

**Clinical trial results:****A Phase II, Single Centre, Open-label, Randomized Study to Investigate Meningococcal Serogroup A, C, W-135 and Y Saccharide Specific B Cell Response to a Primary and a Booster Course of the Novartis Meningococcal ACWY Conjugate Vaccine in Healthy Infants**

Due to a system error, the data reported in v1 is not correct and has been removed from public view.

Summary

| | |
|--------------------------|----------------|
| EudraCT number | 2006-003476-35 |
| Trial protocol | GB |
| Global end of trial date | 19 June 2009 |

Results information

| | |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Result version number | v2 (current) |
| This version publication date | 03 June 2016 |
| First version publication date | 14 June 2015 |
| Version creation reason | • Correction of full data set re-QC of the study needed because of EudraCT system glitch and updates are required. |

Trial information**Trial identification**

| | |
|-----------------------|--------|
| Sponsor protocol code | V59P16 |
|-----------------------|--------|

Additional study identifiers

| | |
|------------------------------------|-------------|
| ISRCTN number | - |
| ClinicalTrials.gov id (NCT number) | NCT00488683 |
| WHO universal trial number (UTN) | - |

Notes:

Sponsors

| | |
|------------------------------|--------------------------------------------------------------------------------------------------------|
| Sponsor organisation name | Novartis Vaccines and Diagnostics S.r.l. |
| Sponsor organisation address | Via Fiorentina 1, Siena, Italy, 53100 |
| Public contact | Posting Director, Novartis Vaccines and Diagnostics S.r.l. , RegistryContactVaccinesUS@novartis.com |
| Scientific contact | Posting Director, Novartis Vaccines and Diagnostics S.r.l. , RegistryContactVaccinesUS@novartis.com |

Notes:

Paediatric regulatory details

| | |
|----------------------------------------------------------------------|---------------------|
| Is trial part of an agreed paediatric investigation plan (PIP) | Yes |
| EMA paediatric investigation plan number(s) | EMA-000032-PIP01-07 |
| Does article 45 of REGULATION (EC) No 1901/2006 apply to this trial? | No |
| Does article 46 of REGULATION (EC) No 1901/2006 apply to this trial? | Yes |

Notes:

Results analysis stage

| | |
|------------------------------------------------------|-------------------|
| Analysis stage | Final |
| Date of interim/final analysis | 17 September 2012 |
| Is this the analysis of the primary completion data? | No |
| Global end of trial reached? | Yes |
| Global end of trial date | 19 June 2009 |
| Was the trial ended prematurely? | No |

Notes:

General information about the trial

Main objective of the trial:

To assess whether the frequency of meningococcal serogroup A, C, W-135 and Y specific memory B cells, measured 1 month after a 2, 4-month course of Novartis MenACWY vaccine, predicts the specific serum bactericidal activity using human complement (hSBA) of (respectively) serogroup A, C, W-135 and Y at 12 months of age.

Protection of trial subjects:

This clinical study was designed, implemented and reported in accordance with the International Conference on Harmonisation (ICH) Tripartite Guidelines for Good Clinical Practice (GCP), with applicable local regulations, including the European Directive 2001/20/EC, the US CFR Title 21, Novartis codes on the protection of human rights, and with the ethical principles laid down in the Declaration of Helsinki.

Background therapy: -

Evidence for comparator: -

| | |
|-----------------------------------------------------------|--------------|
| Actual start date of recruitment | 09 July 2007 |
| Long term follow-up planned | No |
| Independent data monitoring committee (IDMC) involvement? | No |

Notes:

Population of trial subjects

Subjects enrolled per country

| | |
|--------------------------------------|---------------------|
| Country: Number of subjects enrolled | United Kingdom: 216 |
| Worldwide total number of subjects | 216 |
| EEA total number of subjects | 216 |

Notes:

Subjects enrolled per age group

| | |
|-------------------------------------------|-----|
| In utero | 0 |
| Preterm newborn - gestational age < 37 wk | 0 |
| Newborns (0-27 days) | 0 |
| Infants and toddlers (28 days-23 months) | 216 |
| Children (2-11 years) | 0 |
| Adolescents (12-17 years) | 0 |

| | |
|----------------------|---|
| Adults (18-64 years) | 0 |
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

Subject disposition

Recruitment

Recruitment details:

Participants were enrolled from one study center in UK.

Pre-assignment

Screening details:

All enrolled subjects were included in study.

Period 1

| | |
|------------------------------|--------------------------------|
| Period 1 title | Overall trial (overall period) |
| Is this the baseline period? | Yes |
| Allocation method | Randomised - controlled |
| Blinding used | Not blinded |

Arms

| | |
|------------------------------|--------------------------------------------|
| Are arms mutually exclusive? | Yes |
| Arm title | MenACWY-CRM and Routine Vaccines (Group 1) |

Arm description:

Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 13 months), and 1 dose each of MMR and Hib (booster) at 13 months.

| | |
|----------------------------------------|--------------------------------------------------------------------------------------------|
| Arm type | Experimental |
| Investigational medicinal product name | Meningococcal (groups A, C, W, and Y) oligosaccharide diphtheria CRM-197 conjugate vaccine |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Powder and solution for solution for injection |
| Routes of administration | Intramuscular use |

Dosage and administration details:

One dose (0.5 mL) of MenACWY conjugate vaccine supplied as an extemporaneous mixing just before injection of the lyophilized component (MenA) reconstituted with the liquid component (MenCWY) was administered at 2-, 4-, and 12-months as IM injections in the anterolateral area of the right thigh.

| | |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Investigational medicinal product name | DTaP-Hib-IPV |
| Investigational medicinal product code | |
| Other name | Combined diphtheria, tetanus toxoid, acellular pertussis, Haemophilus influenzae type B and inactivated polio vaccine, Pediacel |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |

Dosage and administration details:

Three doses (0.5 mL each) were administered at 2-, 3-, and 4-months in the anterolateral area of the left thigh.

| | |
|----------------------------------------|----------------------------------------------|
| Investigational medicinal product name | PCV |
| Investigational medicinal product code | |
| Other name | Heptavalent Streptococcus pneumonia, Prevnar |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |

Dosage and administration details:

Three doses (0.5 mL each) were administered at 2-, 4-, 13-months in the anterolateral area of the left thigh.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Investigational medicinal product name | Hib |
| Investigational medicinal product code | |
| Other name | Vaxem Hib |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) was administered at 13 months in the anterolateral area of the right thigh. | |
| Investigational medicinal product name | MMR |
| Investigational medicinal product code | |
| Other name | Measles, mumps, and rubella vaccine, Priorix |
| Pharmaceutical forms | Powder and solvent for solution for injection |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) was administered at 13 months in the anterolateral area of the left thigh. | |
| Arm title | MenACWY-CRM and Routine Vaccines (Group 2) |
| Arm description: | |
| Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months. This group had an additional blood draw at the time of enrollment. | |
| Arm type | Experimental |
| Investigational medicinal product name | Meningococcal (groups A, C, W, and Y) oligosaccharide diphtheria CRM-197 conjugate vaccine |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Powder and solution for solution for injection |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) of MenACWY conjugate vaccine supplied as an extemporaneous mixing just before injection of the lyophilized component (MenA) reconstituted with the liquid component (MenCWY) was administered at 2-, 4-, and 12-months as IM injections in the anterolateral area of the right thigh. | |
| Investigational medicinal product name | DTaP-Hib-IPV |
| Investigational medicinal product code | |
| Other name | Combined diphtheria, tetanus toxoid, acellular pertussis, Haemophilus influenzae type B and inactivated polio vaccine, Pediacel |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| Three doses (0.5 mL each) were administered at 2-, 3-, and 4-months in the anterolateral area of the left thigh. | |
| Investigational medicinal product name | PCV |
| Investigational medicinal product code | |
| Other name | Heptavalent Streptococcus pneumonia, Prevnar |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| Three doses (0.5 mL each) were administered at 2-, 4-, 12-months in the anterolateral area of the left thigh. | |
| Investigational medicinal product name | MMR |
| Investigational medicinal product code | |
| Other name | Measles, mumps, and rubella vaccine, Priorix |
| Pharmaceutical forms | Powder and solvent for solution for injection |
| Routes of administration | Intramuscular use |

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Dosage and administration details: | |
| One dose (0.5 mL) was administered at 13 months in the anterolateral area of the left thigh. | |
| Investigational medicinal product name | Hib |
| Investigational medicinal product code | |
| Other name | Vaxem Hib |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) was administered at 13 months in the anterolateral area of the right thigh. | |
| Arm title | MenACWY-CRM and Routine Vaccines (Group 3) |
| Arm description: | |
| Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months of age. This group had an additional blood draw at 6-7 days after third dose of MenACWY-CRM. | |
| Arm type | Experimental |
| Investigational medicinal product name | Meningococcal (groups A, C, W, and Y) oligosaccharide diphtheria CRM-197 conjugate vaccine |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Powder and solution for solution for injection |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) of MenACWY conjugate vaccine supplied as an extemporaneous mixing just before injection of the lyophilized component (MenA) reconstituted with the liquid component (MenCWY) was administered at 2-, 4-, and 12-months as IM injections in the anterolateral area of the right thigh. | |
| Investigational medicinal product name | DTaP-Hib-IPV |
| Investigational medicinal product code | |
| Other name | Combined diphtheria, tetanus toxoid, acellular pertussis, Haemophilus influenzae type B and inactivated polio vaccine, Pediacel |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| Three doses (0.5 mL each) were administered at 2-, 3-, and 4-months in the anterolateral area of the left thigh. | |
| Investigational medicinal product name | PCV |
| Investigational medicinal product code | |
| Other name | Heptavalent Streptococcus pneumonia, Prevnar |
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| Three doses (0.5 mL each) were administered at 2-, 4-, 12-months in the anterolateral area of the left thigh | |
| Investigational medicinal product name | MMR |
| Investigational medicinal product code | |
| Other name | Measles, mumps, and rubella vaccine, Priorix |
| Pharmaceutical forms | Powder and solvent for solution for injection |
| Routes of administration | Intramuscular use |
| Dosage and administration details: | |
| One dose (0.5 mL) was administered at 13 months in the anterolateral area of the left thigh. | |
| Investigational medicinal product name | Hib |
| Investigational medicinal product code | |
| Other name | Vaxem Hib |

| | |
|--------------------------|----------------------------------------------|
| Pharmaceutical forms | Solution for injection in pre-filled syringe |
| Routes of administration | Intramuscular use |

Dosage and administration details:

One dose (0.5 mL) was administered at 13 months in the anterolateral area of the right thigh.

| Number of subjects in period 1 | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) |
|---------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Started | 108 | 54 | 54 |
| Completed | 96 | 48 | 52 |
| Not completed | 12 | 6 | 2 |
| Consent withdrawn by subject | 1 | 2 | 2 |
| Unable to classify | 1 | - | - |
| Lost to follow-up | 5 | 3 | - |
| Protocol deviation | 5 | 1 | - |

Baseline characteristics

Reporting groups

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 1) |
| Reporting group description: | |
| Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 13 months), and 1 dose each of MMR and Hib (booster) at 13 months. | |
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 2) |
| Reporting group description: | |
| Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months. This group had an additional blood draw at the time of enrollment. | |
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 3) |
| Reporting group description: | |
| Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months of age. This group had an additional blood draw at 6-7 days after third dose of MenACWY-CRM. | |

| Reporting group values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) |
|------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Number of subjects | 108 | 54 | 54 |
| Age categorical | | | |
| Units: Subjects | | | |

| | | | |
|---------------------------------------------|-------|-------|-------|
| Age continuous | | | |
| Analysis was done on all enrolled subjects. | | | |
| Units: days | | | |
| arithmetic mean | 60.5 | 59.8 | 59.8 |
| standard deviation | ± 3.7 | ± 3.6 | ± 3.6 |
| Gender categorical | | | |
| Analysis was done on all enrolled subjects. | | | |
| Units: Subjects | | | |
| Female | 48 | 28 | 25 |
| Male | 60 | 26 | 29 |

| Reporting group values | Total | | |
|------------------------|-------|--|--|
| Number of subjects | 216 | | |
| Age categorical | | | |
| Units: Subjects | | | |

| | | | |
|---------------------------------------------|---|--|--|
| Age continuous | | | |
| Analysis was done on all enrolled subjects. | | | |
| Units: days | | | |
| arithmetic mean | | | |
| standard deviation | - | | |

| | | | |
|---------------------------------------------|-----|--|--|
| Gender categorical | | | |
| Analysis was done on all enrolled subjects. | | | |
| Units: Subjects | | | |
| Female | 101 | | |
| Male | 115 | | |

End points

End points reporting groups

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 1) |
| Reporting group description: Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 13 months), and 1 dose each of MMR and Hib (booster) at 13 months. | |
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 2) |
| Reporting group description: Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months. This group had an additional blood draw at the time of enrollment. | |
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 3) |
| Reporting group description: Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months of age. This group had an additional blood draw at 6-7 days after third dose of MenACWY-CRM. | |
| Subject analysis set title | All enrolled population |
| Subject analysis set type | Full analysis |
| Subject analysis set description: All subjects enrolled/randomized in the study, i.e., with a record in DEMOG. This population was used for the analysis of demographics. | |
| Subject analysis set title | Modified Intention-to-treat (ITT) population, Immunogenicity |
| Subject analysis set type | Modified intention-to-treat |
| Subject analysis set description: All randomized subjects who received a dose of MenACWY, and provided at least one evaluable blood sample after vaccination. | |
| Subject analysis set title | Per protocol (PP) population, Immunogenicity |
| Subject analysis set type | Per protocol |
| Subject analysis set description: All subjects in the enrolled population who received all the relevant doses of vaccine correctly, and - provided evaluable blood samples at the relevant time points, and - had no major protocol violation as defined prior to analysis. | |
| Subject analysis set title | Safety population |
| Subject analysis set type | Safety analysis |
| Subject analysis set description: All subjects who received a dose of MenACWY and some post-baseline safety data. | |
| Subject analysis set title | Plasma cells at 7 Days after booster vacc. (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Plasma cells per 2x10 ⁵ PBMCs at 7 Days After Booster Vaccination of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Subject analysis set title | Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Serogroup Specific IgG Geometric Mean Concentration at 1 week after booster vaccination of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Subject analysis set title | Specific Memory B cells at 7 days after booster vacc (Group 3) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Memory B cells per 2x10E5 Lymphocytes Obtained from Culture (LOC) at 7 Days After Booster Vaccination of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3).

| | |
|----------------------------|--------------------------------------------------------|
| Subject analysis set title | Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Human SBA GMTs at 7 Days After Booster Vaccination of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3).

| | |
|----------------------------|----------------------------------------------|
| Subject analysis set title | Human SBA GMTs at 12 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Human SBA GMTs at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1).

| | |
|----------------------------|----------------------------------------------|
| Subject analysis set title | Human SBA GMTs at 12 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Human SBA GMTs at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2).

| | |
|----------------------------|----------------------------------------------|
| Subject analysis set title | Human SBA GMTs at 12 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Human SBA GMTs at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3).

| | |
|----------------------------|-------------------------------------------------------|
| Subject analysis set title | Specific Memory B Cells at 12 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Memory B cells at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1).

| | |
|----------------------------|-------------------------------------------------------|
| Subject analysis set title | Specific Memory B Cells at 12 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Memory B cells at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2).

| | |
|----------------------------|-------------------------------------------------------|
| Subject analysis set title | Specific Memory B Cells at 12 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of Memory B cells at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3).

| | |
|----------------------------|----------------------------------------------------------------|
| Subject analysis set title | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of IgG Geometric Mean Concentrations at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1).

| | |
|----------------------------|----------------------------------------------------------------|
| Subject analysis set title | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of IgG Geometric Mean Concentrations at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2).

| | |
|----------------------------|----------------------------------------------------------------|
| Subject analysis set title | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |

Subject analysis set description:

Summary of IgG Geometric Mean Concentrations at 12 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3).

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Subject analysis set title | Human SBA GMTs at 13 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Human SBA GMTs at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1). | |
| Subject analysis set title | Human SBA GMTs at 13 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Human SBA GMTs at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2). | |
| Subject analysis set title | Human SBA GMTs at 13 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Human SBA GMTs at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Subject analysis set title | Specific Memory B Cells at 13 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Memory B cells at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1). | |
| Subject analysis set title | Specific Memory B Cells at 13 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Memory B cells at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2). | |
| Subject analysis set title | Specific Memory B Cells at 13 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of Memory B cells at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of IgG Geometric Mean Concentrations at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of IgG Geometric Mean Concentrations at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of IgG Geometric Mean Concentrations at 13 Months of Age of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: Summary of IgG Geometric Mean Concentrations at Day 1 in mothers of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 1). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group |

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2) | |
| Subject analysis set type | Per protocol |
| Subject analysis set description: | |
| Summary of IgG Geometric Mean Concentrations at Day 1 in mothers of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 2). | |
| Subject analysis set title | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Subject analysis set type | Per protocol |
| Subject analysis set description: | |
| Summary of IgG Geometric Mean Concentrations at Day 1 in mothers of subjects that belongs to MenACWY-CRM and Routine Vaccines (Group 3). | |
| Primary: 1. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135, and Y Specific Memory B Cells at 5 Months of Age and hSBA Titers at 12 Months of Age by Serogroup A, C, W-135 and Y | |
| End point title | 1. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135, and Y Specific Memory B Cells at 5 Months of Age and hSBA Titers at 12 Months of Age by Serogroup A, C, W-135 and Y |
| End point description: | |
| <p>The memory B cell response at one month after primary vaccinations (5 months of age) was defined as the mean number of meningococcal serogroup A, C, W-135 and Y specific memory B cells, measured in vitro by ELISpot assay per 2×10^5 lymphocytes obtained from culture (LOC) of peripheral blood mononuclear cells (PBMC) circulating in blood incubated for 5.5 days in the presence of polyclonal B cell activators. Serogroup A, C, W-135 and Y geometric mean titers (GMTs) were measured by serum bactericidal assay using human complement (hSBA) at 12 months of age (before third dose). Correlation and linear regression coefficients were determined between memory B cells at 1 month after primary vaccinations with MenACWY-CRM (5 months of age) and hSBA titers at 12 months of age (before third dose) for the serogroups A, C, W-135 and Y.</p> <p>Analysis was performed on per-protocol (PP) dataset of primary vaccination.</p> <p>Note: hSBA GMTs dispersion was reported as confidence intervals (see table notes)</p> | |
| End point type | Primary |
| End point timeframe: | |
| 1 month after primary vaccination and 12 months of age | |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Human SBA GMTs at 12 Months of Age (Group 1) |
|------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[1] | 31 ^[2] | 43 ^[3] | 85 ^[4] |
| Units: B cells per 2×10^5 lymphocytes | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 2.2 (± 0) |
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 5.56 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.72) | 1.57 (± 1.47) | 8.4 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 8.71 (± 0) |

Notes:

[1] - N= Serogroup A=50, C=71, W-135=62, Y=54

[2] - N= Serogroup A=25, C=31, W-135=26, Y=25

[3] - N= Serogroup A=30, C=43, W-135=40, Y=30

[4] - N= Serogroup A=85, C=83, W-135=67, Y=43; 95%CI= A=2.05-2.36, C=4.23-7.3, W-135=6.03-12, Y=5.82-13

| | | | | |
|------------------|-----------|-----------|--|--|
| End point values | Human SBA | Human SBA | | |
|------------------|-----------|-----------|--|--|

| | GMTs at 12 Months of Age (Group 2) | GMTs at 12 Months of Age (Group 3) | | |
|--------------------------------------------------|------------------------------------|------------------------------------|--|--|
| Subject group type | Subject analysis set | Subject analysis set | | |
| Number of subjects analysed | 40 ^[5] | 42 ^[6] | | |
| Units: B cells per 2x10 ⁵ lymphocytes | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2 (± 0) | 2.14 (± 0) | | |
| Serogroup C | 4.83 (± 0) | 5.61 (± 0) | | |
| Serogroup W-135 | 12 (± 0) | 10 (± 0) | | |
| Serogroup Y | 9.9 (± 0) | 9.15 (± 0) | | |

Notes:

[5] - N= Serogroup A=40, C=39, W-135=37, Y=25; 95%CI= A=2-2, C=3.28-7.09, W-135=8.05-17, Y=5.39-18

[6] - N= Serogroup A=42, C=40, W-135=34, Y=16; 95%CI= A=1.93-2.37, C=3.78-8.33, W-135=6.73-15, Y=4.95-17

Statistical analyses

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 1 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup A. | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[7] |
| P-value | = 0.69 ^[8] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.06 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[7] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[8] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 2 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[9] |
| P-value | = 0.3 ^[10] |
| Method | parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[9] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[10] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[11] |
| P-value | < 0.0001 ^[12] |
| Method | parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.81 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[11] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[12] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup Y

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[13] |
| P-value | = 0.0012 ^[14] |
| Method | parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.67 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[13] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[14] - Values from Groups 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup A

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[15] |
| P-value | = 0.61 ^[16] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[15] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[16] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup C

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[17] |
| P-value | = 0.02 ^[18] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.31 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[17] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[18] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[19] |
| P-value | = 0.0018 ^[20] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.45 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[19] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[20] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 8 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup Y

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[21] |
| P-value | = 0.08 ^[22] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.4 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[21] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[22] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup A

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[23] |
| Method | Regression, Linear |
| Parameter estimate | R-square |
| Point estimate | 0.0041 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[23] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup C

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|-----------------------|
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[24] |
| Method | Regression, Linear |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[24] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup W - 135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[25] |
| Method | Regression, Linear |
| Parameter estimate | R-square |
| Point estimate | 0.66 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[25] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and hSBA titers at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 1) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 312 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[26] |
| Method | Regression, Linear |
| Parameter estimate | R-square |
| Point estimate | 0.45 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[26] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Secondary: 2. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells at 1 Month After MenACWY-CRM Primary Vaccination and Serogroup A, C, W-135 and Y Specific Memory B Cells and IgG Concentration at 12 Months Age

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 2. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells at 1 Month After MenACWY-CRM Primary Vaccination and Serogroup A, C, W-135 and Y Specific Memory B Cells and IgG Concentration at 12 Months Age |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Memory B cell response at 1 month after primary vaccination and immediately before third dose at 12 months of age was measured as mean number of meningococcal serogroup specific memory B cells by ELISpot assay per 2×10^5 LOC.

The meningococcal serogroup A, C, W-135 and Y specific IgG concentrations immediately before third dose at 12 months of age were measured by ELISA and reported as $\mu\text{g/mL}$.

Note: Specific IgG GMCs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

1 month after primary vaccination (B cells) and at 12 months of age (B cells and IgG concentration)

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Specific Memory B Cells at 12 Months of Age (Group 1) |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[27] | 31 ^[28] | 43 ^[29] | 75 ^[30] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (\pm 2.03) | 1.8 (\pm 1.27) | 1.72 (\pm 1.89) | 1.811 (\pm 1.935) |
| Serogroup C | 2.57 (\pm 2.73) | 1.71 (\pm 1.12) | 2.43 (\pm 2.32) | 2.076 (\pm 1.926) |
| Serogroup W-135 | 2.39 (\pm 4.69) | 1.5 (\pm 0.721) | 1.57 (\pm 1.47) | 1.783 (\pm 2.189) |
| Serogroup Y | 2.91 (\pm 8.36) | 1.43 (\pm 0.71) | 1.78 (\pm 1.67) | 2.172 (\pm 2.934) |

Notes:

[27] - N= Serogroup A=50, C=71, W-135=62, Y=54

[28] - N= Serogroup A=25, C=31, W-135=26, Y=25

[29] - N= Serogroup A=30, C=43, W-135=40, Y=30

[30] - N= Serogroup A=58, C=75, W-135=75, Y=67

| End point values | Specific Memory B Cells at 12 Months of Age (Group | Specific Memory B Cells at 12 Months of Age (Group | Specific IgG Geometric Mean Conc at 12 Months of | Specific IgG Geometric Mean Conc at 12 Months of |
|------------------|----------------------------------------------------|----------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
|------------------|----------------------------------------------------|----------------------------------------------------|--------------------------------------------------|--------------------------------------------------|

| | 2) | 3) | Age (Group 1) | Age (Group 2) |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 35 ^[31] | 38 ^[32] | 55 ^[33] | 25 ^[34] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 1.988 (± 1.881) | 1.692 (± 1.398) | 0.37 (± 0) | 0.33 (± 0) |
| Serogroup C | 1.983 (± 1.482) | 2.188 (± 2.004) | 0.19 (± 0) | 0.18 (± 0) |
| Serogroup W-135 | 1.793 (± 1.531) | 2.067 (± 2.716) | 0.31 (± 0) | 0.35 (± 0) |
| Serogroup Y | 1.556 (± 0.898) | 1.749 (± 1.797) | 0.43 (± 0) | 0.47 (± 0) |

Notes:

[31] - N= Serogroup A=29, C=35, W-135=34, Y=33

[32] - N= Serogroup A=31, C=38, W-135=38, Y=34

[33] - N= Serogroup A=49, C=55, W-135=55, Y=49; 95%CI= A=0.27-0.49, C=0.16-0.23, W-135=0.25-0.38, Y=0.34-0.55

[34] - N= Serogroup A=23, C=25, W-135=21, Y=21; 95%CI= A=0.23-0.46, C=0.14-0.22, W-135=0.25-0.48, Y=0.33-0.67

| End point values | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) | | | |
|--------------------------------------|----------------------------------------------------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 26 ^[35] | | | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 0.31 (± 0) | | | |
| Serogroup C | 0.2 (± 0) | | | |
| Serogroup W-135 | 0.29 (± 0) | | | |
| Serogroup Y | 0.37 (± 0) | | | |

Notes:

[35] - N= Serogroup A=24, C=26, W-135=26, Y=24; 95%CI= A=0.23-0.42, C=0.15-0.28, W-135=0.2-0.43, Y=0.25-0.55

Statistical analyses

| Statistical analysis title | Statistical Analysis 1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[36] |
| P-value | = 0.7 ^[37] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | -0.07 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[36] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[37] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 2 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup C

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[38] |
| P-value | = 0.37 ^[39] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | -0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[38] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[39] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[40] |
| P-value | < 0.0001 ^[41] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.66 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[40] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[41] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[42] |
| P-value | < 0.0001 ^[43] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.9 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[42] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[43] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup A

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[44] |
| P-value | = 0.94 ^[45] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | 0.01 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[44] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[45] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup C

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[46] |
| P-value | = 0.7 ^[47] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | -0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[46] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[47] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[48] |
| P-value | = 0.04 ^[49] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | 0.3 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[48] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[49] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 8 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[50] |
| P-value | = 0.0043 ^[51] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | 0.46 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[50] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[51] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup A

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[52] |
| Parameter estimate | R-square |
| Point estimate | 0.0053 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[52] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup C

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[53] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[53] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[54] |
| Parameter estimate | R-square |
| Point estimate | 0.43 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[54] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 12 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccinations and memory B cells at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 293 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[55] |
| Parameter estimate | R-square |
| Point estimate | 0.82 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[55] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 13 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[56] |
| P-value | = 0.68 ^[57] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[56] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[57] - Values from Group 1, 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 14 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[58] |
| P-value | = 0.46 ^[59] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[58] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[59] - Values from Group 1, 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 15 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[60] |
| P-value | = 0.08 ^[61] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[60] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[61] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 16 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[62] |
| P-value | = 0.000145 ^[63] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.45 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[62] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[63] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 17 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[64] |
| P-value | = 0.75 ^[65] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | -0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[64] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[65] - Values from Group 1, 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 18 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[66] |
| P-value | = 0.27 ^[67] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[66] - Confidence Intervals were not calculated for the purpose of this study.

[67] - Non-parametric correlation

Values from Group 1, 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 19 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[68] |
| P-value | = 0.07 ^[69] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[68] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[69] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 20 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[70] |
| P-value | = 0.06 ^[71] |
| Method | Non-parametric correlation |
| Parameter estimate | spearman correlation coefficient |
| Point estimate | 0.23 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[70] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[71] - Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 21 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[72] |
| Parameter estimate | R-square |
| Point estimate | 0.0029 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[72] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 22 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[73] |
| Parameter estimate | R-square |
| Point estimate | 0.0059 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[73] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 23 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccinations and serogroup specific IgG concentration at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[74] |
| Parameter estimate | R-square |
| Point estimate | 0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[74] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 24 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccinations and

serogroup specific IgG concentration at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 251 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[75] |
| Parameter estimate | R-square |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[75] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Secondary: 3. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells 1 Month After MenACWY-CRM Primary Vaccination and Memory B Cells and hSBA Titers and IgG Conc. 1 Month Post MenACWY-CRM Booster Vaccination

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 3. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells 1 Month After MenACWY-CRM Primary Vaccination and Memory B Cells and hSBA Titers and IgG Conc. 1 Month Post MenACWY-CRM Booster Vaccination |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Memory B cell response at 1 month after MenACWY-CRM primary and booster vaccinations was measured as mean number of meningococcal serogroup specific memory B cells by ELISpot assay per 2x100000 LOC.

hSBA geometric mean titers (GMTs) for the serogroup A, C, W-135 and Y were measured one month after the third MenACWY-CRM vaccination.

The meningococcal serogroup A, C, W-135 and Y specific IgG concentrations one month after third MenACWY-CRM vaccination were measured by ELISA and reported as µg/mL.

Values from Group 1 were analyzed separately. Values from Group 2 and 3 were combined for the analysis. Groups 2 and 3 received PCV at 12 months while Group 1 received PCV at 13 months. Analysis was performed on PP booster population.

Note: Specific IgG GMCs and hSBA GMTs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

1 month after primary vaccination and 1 month after third vaccination

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Human SBA GMTs at 13 Months of Age (Group 1) |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[76] | 31 ^[77] | 43 ^[78] | 85 ^[79] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 65 (± 0) |

| | | | | |
|-----------------|---------------|---------------|---------------|-----------|
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 315 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.72) | 1.57 (± 1.47) | 889 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 492 (± 0) |

Notes:

[76] - N= Serogroup A=50, C=71, W-135=62, Y=54

[77] - N= Serogroup A=25, C=31, W-135=26, Y=25

[78] - N= Serogroup A=30, C=43, W-135=40, Y=30

[79] - N= Serogroup A=85, C=78, W-135=59, Y=32; 95%CI= A=47-89, C=239-417, W-135=622-1271, Y=305-793

| End point values | Human SBA GMTs at 13 Months of Age (Group 2) | Human SBA GMTs at 13 Months of Age (Group 3) | Specific Memory B Cells at 13 Months of Age (Group 1) | Specific Memory B Cells at 13 Months of Age (Group 2) |
|--------------------------------------|----------------------------------------------|----------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[80] | 42 ^[81] | 73 ^[82] | 37 ^[83] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 48 (± 0) | 67 (± 0) | 6.429 (± 6.365) | 6.527 (± 5.957) |
| Serogroup C | 217 (± 0) | 308 (± 0) | 9.437 (± 10.861) | 8.907 (± 9.791) |
| Serogroup W-135 | 649 (± 0) | 602 (± 0) | 6.205 (± 6.776) | 4.43 (± 5.939) |
| Serogroup Y | 480 (± 0) | 475 (± 0) | 6.95 (± 9.122) | 6.603 (± 8.198) |

Notes:

[80] - N= Serogroup A=40, C=39, W-135=35, Y=20; 95%CI= A=32-72, C=138-341, W-135=419-1004, Y=269-857

[81] - N= Serogroup A=42, C=40, W-135=33, Y=15; 95%CI= A=44-102, C=214-445, W-135=343-1057, Y=220-1025

[82] - N= Serogroup A=54, C=73, W-135=73, Y=64

[83] - N= Serogroup A=26, C=37, W-135=37, Y=32

| End point values | Specific Memory B Cells at 13 Months of Age (Group 3) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
|--------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[84] | 66 ^[85] | 34 ^[86] | 38 ^[87] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 7.488 (± 12.512) | 4.59 (± 0) | 3.5 (± 0) | 5.18 (± 0) |
| Serogroup C | 8.915 (± 10.83) | 1.83 (± 0) | 1.67 (± 0) | 2.63 (± 0) |
| Serogroup W-135 | 5.201 (± 6.648) | 5.97 (± 0) | 5.37 (± 0) | 5.12 (± 0) |
| Serogroup Y | 5.746 (± 12.624) | 6.2 (± 0) | 5.58 (± 0) | 5.75 (± 0) |

Notes:

[84] - N= Serogroup A=33, C=40, W-135=39, Y=34

[85] - N= Serogroup A=66, C=59, W-135=56, Y=56; 95%CI= A=3.63-5.81, C=1.43-2.35, W-135=4.67-7.64, Y=4.77-8.05

[86] - N= Serogroup A=34, C=33, W-135=32, Y=31; 95%CI= A=2.6-4.73, C=1.18-2.36, W-135=4.06-7.1, Y=4.06-7.67

Statistical analyses

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 1 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[88] |
| P-value | = 0.46 |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | -0.26 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[88] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 2 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[89] |
| P-value | = 0.59 ^[90] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[89] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[90] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[91] |
| P-value | = 0.98 |
| Method | parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.006 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[91] - parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[92] |
| P-value | = 0.2 ^[93] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.24 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[92] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[93] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[94] |
| P-value | = 0.08 |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.43 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[94] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[95] |
| P-value | = 0.68 ^[96] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | -0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[95] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[96] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y

| | |
|-------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
|-------------------|----------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[97] |
| P-value | = 0.006 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.77 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[97] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 8 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[98] |
| P-value | = 0.48 ^[99] |
| Method | Parametric correlation |
| Parameter estimate | pearson correlation coefficient |
| Point estimate | 0.16 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[98] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[99] - Values from Group 2 and 3 were combined for this analysis.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 9 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[100] |
| P-value | = 0.46 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.26 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[100] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[101] |
| P-value | = 0.4 ^[102] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[101] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[102] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
|-------------------|----------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[103] |
| P-value | = 0.6 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.12 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[103] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v MenACWY-CRM and Routine Vaccines (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[104] |
| P-value | = 0.03 ^[105] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.4 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[104] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[105] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 13 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[106] |
| P-value | = 0.001 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.72 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[106] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 14 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[107] |
| P-value | = 1 ^[108] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[107] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[108] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 15 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[109] |
| P-value | = 0.24 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.39 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[109] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 16 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[110] |
| P-value | = 0.34 ^[111] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.22 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[110] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[111] - Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 17 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[112] |
| Parameter estimate | Regression, Linear |
| Point estimate | 0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[112] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 18 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells |

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------|
| | at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[113] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[113] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 19 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[114] |
| Parameter estimate | Regression, Linear |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[114] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 20 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[115] |
| Parameter estimate | Regression, Linear |
| Point estimate | 0.06 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[115] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 21 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[116] |
| Parameter estimate | R-square |
| Point estimate | 0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[116] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 22 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[117] |
| Parameter estimate | R-square |
| Point estimate | 0.0068 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[117] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 23 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[118] |
| Parameter estimate | R-square |
| Point estimate | 0.59 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[118] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 24 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[119] |
| Parameter estimate | R-square |
| Point estimate | 0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[119] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 25 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[120] |
| P-value | = 0.0002 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.77 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[120] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 26 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[121] |
| P-value | = 0.9 ^[122] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[121] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[122] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 27 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[123] |
| P-value | = 0.02 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.47 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[123] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 28 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[124] |
| P-value | = 0.12 ^[125] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.29 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[124] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[125] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 29 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[126] |
| P-value | = 0.22 |
| Method | Parametric correlation |
| Parameter estimate | [Pearson correlation coefficient |
| Point estimate | 0.31 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[126] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 30 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[127] |
| P-value | < 0.0001 ^[128] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.81 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[127] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[128] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 31 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[129] |
| P-value | = 0.82 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.15 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[129] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 32 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA

titers one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[130] |
| P-value | = 0.66 ^[131] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.15 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[130] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[131] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 33 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[132] |
| P-value | = 0.03 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.51 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[132] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 34 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[133] |
| P-value | = 0.53 ^[134] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[133] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[134] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 35 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[135] |
| P-value | = 0.35 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[135] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 36 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[136] |
| P-value | = 0.09 ^[137] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.47 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[136] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[137] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 37 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[138] |
| P-value | = 0.04 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.51 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[138] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 38 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[139] |
| P-value | = 0.1 ^[140] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.35 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[139] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[140] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 39 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[141] |
| P-value | = 0.56 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.35 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[141] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 40 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[142] |
| P-value | = 0.84 ^[143] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[142] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[143] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 41 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[144] |
| Parameter estimate | R-square |
| Point estimate | 0.59 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[144] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 42 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[145] |
| Parameter estimate | R-square |
| Point estimate | 0.0007 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[145] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 43 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[146] |
| Parameter estimate | R-square |
| Point estimate | 0.22 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[146] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 44 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[147] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[147] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 45 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[148] |
| Parameter estimate | R-square |
| Point estimate | 0.1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[148] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 46 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[149] |
| Parameter estimate | R-square |
| Point estimate | 0.66 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[149] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 47 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[150] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[150] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 48 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one month after booster vaccination for the serogroup Y

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[151] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[151] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 49 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[152] |
| P-value | = 0.08 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.29 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[152] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 50 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[153] |
| P-value | = 0.74 ^[154] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.05 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[153] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[154] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 51 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[155] |
| P-value | = 0.94 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[155] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 52 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[156] |
| P-value | = 0.51 ^[157] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.09 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[156] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[157] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 53 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[158] |
| P-value | = 0.12 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.27 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[158] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 54 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[159] |
| P-value | = 0.09 ^[160] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[159] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[160] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 55 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[161] |
| P-value | = 0.81 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[161] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 56 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[162] |
| P-value | = 0.07 ^[163] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.28 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[162] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[163] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 57 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[164] |
| P-value | = 0.02 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.36 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[164] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 58 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[165] |
| P-value | = 0.59 ^[166] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[165] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[166] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 59 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[167] |
| P-value | = 0.51 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.1 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[167] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 60 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[168] |
| P-value | = 0.9 ^[169] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[168] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[169] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 61 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[170] |
| P-value | = 0.02 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.39 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[170] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 62 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[171] |
| P-value | = 0.2 ^[172] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[171] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[172] - Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 63 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[173] |
| P-value | = 0.34 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.18 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[173] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 64 |
|--------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and | |

serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[174] |
| P-value | = 0.04 ^[175] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.33 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[174] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[175] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 65 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[176] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[176] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 66 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[177] |
| Parameter estimate | R-square |
| Point estimate | 0.0027 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[177] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 67 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[178] |
| Parameter estimate | R-square |
| Point estimate | 0.0002 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[178] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 68 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[179] |
| Parameter estimate | R-square |
| Point estimate | 0.0077 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[179] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 69 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[180] |
| Parameter estimate | R-square |
| Point estimate | 0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[180] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 70 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[181] |
| Parameter estimate | R-square |
| Point estimate | 0.06 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[181] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 71 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[182] |
| Parameter estimate | R-square |
| Point estimate | 0.0023 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[182] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 72 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[183] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[183] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Secondary: 4. Correlation and Regression Coefficients Between Memory B Cells 1 Month After Primary Vaccination and Rise From Prebooster Levels in Serogroup Specific Memory B Cells and IgG Concentration and hSBA Titers 1 Month After MenACWY -CRM Booster Vaccination

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 4. Correlation and Regression Coefficients Between Memory B Cells 1 Month After Primary Vaccination and Rise From Prebooster Levels in Serogroup Specific Memory B Cells and IgG Concentration and hSBA Titers 1 Month After MenACWY -CRM Booster Vaccination |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Memory B cell response at 1 month after MenACWY-CRM primary and booster vaccination was measured as mean number of meningococcal serogroup specific memory B cells by ELISpot assay per 2x100000 LOC. The serogroup A, C, W-135 and Y specific IgG concentrations at 1 month after MenACWY-CRM booster were measured by ELISA and reported as µg/mL. hSBA GMTs were measured by hSBA assay one month after MenACWY-CRM booster vaccination. The rise in serogroup specific IgG, memory B cells and hSBA was calculated by pre/post third dose geometric mean ratios, calculated by the difference in the log10 of the concentrations/titers measured at 13 months to the log10 of the concentrations at 12 months: (i.e. rise = log10(x) at 13 months minus log10(x) at 12 months) where x is the serogroup specific IgG or memory B cell concentrations or SBA titers. Analysis was performed on PP booster population.

Note: Specific IgG GMCs and hSBA GMTs dispersion was reported as confidence intervals (see table notes).

| | |
|-----------------------------------------------|-----------|
| End point type | Secondary |
| End point timeframe: | |
| 1 month after primary and booster vaccination | |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Human SBA GMTs at 13 Months of Age (Group 1) |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[184] | 31 ^[185] | 43 ^[186] | 85 ^[187] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 65 (± 0) |
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 315 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.72) | 1.57 (± 1.47) | 889 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 492 (± 0) |

Notes:

[184] - N= Serogroup A=50, C=71, W-135=62, Y=54

[185] - N= Serogroup A=25, C=31, W-135=26, Y=25

[186] - N= Serogroup A=30, C=43, W-135=40, Y=30

[187] - N= Serogroup A=85, C=78, W-135=59, Y=32; 95%CI= A=47-89, C=239-417, W-135=622-1271, Y=305-793

| End point values | Human SBA GMTs at 13 Months of Age (Group 2) | Human SBA GMTs at 13 Months of Age (Group 3) | Specific Memory B Cells at 13 Months of Age (Group 1) | Specific Memory B Cells at 13 Months of Age (Group 2) |
|--------------------------------------|----------------------------------------------|----------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[188] | 42 ^[189] | 73 ^[190] | 37 ^[191] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 48 (± 0) | 67 (± 0) | 6.429 (± 6.365) | 6.527 (± 5.957) |
| Serogroup C | 217 (± 0) | 308 (± 0) | 9.437 (± 10.861) | 8.907 (± 9.791) |
| Serogroup W-135 | 649 (± 0) | 602 (± 0) | 6.205 (± 6.776) | 4.43 (± 5.939) |
| Serogroup Y | 480 (± 0) | 475 (± 0) | 6.95 (± 9.122) | 6.603 (± 8.198) |

Notes:

[188] - N= Serogroup A=40, C=39, W-135=35, Y=20; 95%CI= A=32-72, C=138-341, W-135=419-1004, Y=269-857

[189] - N= Serogroup A=42, C=40, W-135=33, Y=15; 95%CI= A=44-102, C=214-445, W-135=343-1057, Y=220-1025

[190] - N= Serogroup A=54, C=73, W-135=73, Y=64

[191] - N= Serogroup A=26, C=37, W-135=37, Y=32

| End point values | Specific Memory B Cells at 13 Months of Age (Group 3) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
|-----------------------------|-------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[192] | 66 ^[193] | 34 ^[194] | 38 ^[195] |

| | | | | |
|--------------------------------------|-----------------------|-----------------|-----------------|-----------------|
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 7.488 (\pm 12.512) | 4.59 (\pm 0) | 3.5 (\pm 0) | 5.18 (\pm 0) |
| Serogroup C | 8.915 (\pm 10.83) | 1.83 (\pm 0) | 1.67 (\pm 0) | 2.63 (\pm 0) |
| Serogroup W-135 | 5.201 (\pm 6.648) | 5.97 (\pm 0) | 5.37 (\pm 0) | 5.12 (\pm 0) |
| Serogroup Y | 5.746 (\pm 12.624) | 6.2 (\pm 0) | 5.58 (\pm 0) | 5.75 (\pm 0) |

Notes:

[192] - N= Serogroup A=33, C=40, W-135=39, Y=34

[193] - N= Serogroup A=66, C=59, W-135=56, Y=56; 95%CI= A=3.63-5.81, C=1.43-2.35, W-135=4.67-7.64, Y=4.77-8.05

[194] - N= Serogroup A=34, C=33, W-135=32, Y=31; 95%CI= A=2.6-4.73, C=1.18-2.36, W-135=4.06-7.1, Y=4.06-7.67

[195] - N= Serogroup A=38, C=37, W-135=32, Y=33; 95%CI= A=3.48-6.99, C=1.87-3.7, W-135=3.5-7.5, Y=3.93-8.42

Statistical analyses

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 1 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A.

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[196] |
| P-value | = 0.59 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[196] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 2 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[197] |
| P-value | = 0.68 ^[198] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.12 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[197] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[198] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[199] |
| P-value | = 0.12 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.36 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[199] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[200] |
| P-value | = 0.26 ^[201] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.22 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[200] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[201] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[202] |
| P-value | = 0.08 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.43 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[202] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[203] |
| P-value | = 0.42 ^[204] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[203] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[204] - Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 7 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[205] |
| P-value | = 0.01 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.77 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[205] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 8 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[206] |
| P-value | = 0.65 ^[207] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.12 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[206] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[207] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 9 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[208] |
| P-value | = 0.58 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[208] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 10 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[209] |
| P-value | = 0.51 ^[210] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[209] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[210] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 11 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific |

| | |
|-----------------------------------------|----------------------------------------------|
| | Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[211] |
| P-value | = 0.24 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.28 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[211] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 12 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[212] |
| P-value | = 0.06 ^[213] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.36 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[212] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[213] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 13 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[214] |
| P-value | = 0.001 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.72 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[214] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 14 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[215] |
| P-value | = 0.12 ^[216] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.32 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[215] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[216] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 15 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[217] |
| P-value | = 0.18 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.49 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[217] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 16 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[218] |
| P-value | = 0.34 ^[219] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[218] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[219] - Values from Group 2 and 3 were combined for this analysis.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 17 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[220] |
| Parameter estimate | R-square |
| Point estimate | 0.06 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[220] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 18 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[221] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[221] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 19 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[222] |
| Parameter estimate | R-square |
| Point estimate | 0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[222] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 20 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[223] |
| Parameter estimate | R-square |
| Point estimate | 0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[223] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 21 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[224] |
| Parameter estimate | R-square |
| Point estimate | 0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[224] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 22 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[225] |
| Parameter estimate | R-square |
| Point estimate | 0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[225] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 23 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[226] |
| Parameter estimate | R-square |
| Point estimate | 0.6 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[226] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 24 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 151 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[227] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[227] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Specific number of subjects for serogroup Y is 121.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 25 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[228] |
| P-value | = 0.0008 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.83 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[228] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 26 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[229] |
| P-value | = 0.57 ^[230] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[229] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[230] - Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 27 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[231] |
| P-value | = 0.001 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.65 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[231] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 28 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[232] |
| P-value | = 0.11 ^[233] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.31 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[232] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[233] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 29 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[234] |
| P-value | = 0.94 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[234] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 30 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[235] |
| P-value | = 1 ^[236] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.0003 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[235] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[236] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 31 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[237] |
| P-value | = 1 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.004 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[237] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 32 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[238] |
| P-value | = 0.37 ^[239] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.3 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[238] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[239] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 33 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[240] |
| P-value | = 0.09 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.52 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[240] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 34 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[241] |
| P-value | = 0.4 ^[242] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[241] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[242] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 35 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[243] |
| P-value | = 0.2 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.28 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[243] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 36 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[244] |
| P-value | = 0.03 ^[245] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.41 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[244] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[245] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 37 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[246] |
| P-value | = 0.07 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.48 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[246] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 38 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[247] |
| P-value | = 0.3 ^[248] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.22 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[247] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[248] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 39 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[249] |
| P-value | = 0.74 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.26 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[249] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 40 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[250] |
| P-value | = 0.25 ^[251] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.38 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[250] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[251] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 41 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[252] |
| Parameter estimate | R-square |
| Point estimate | 0.69 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[252] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 42 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[253] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[253] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 43 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[254] |
| Parameter estimate | R-square |
| Point estimate | 0.42 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[254] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 44 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[255] |
| Parameter estimate | R-square |
| Point estimate | 0.1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[255] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 45 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[256] |
| Parameter estimate | R-square |
| Point estimate | 0.0004 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[256] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 46 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of |

| | |
|-----------------------------------------|------------------------|
| | Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[257] |
| Parameter estimate | R-square |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[257] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 47 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[258] |
| Parameter estimate | R-square |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[258] - Regression, Linea

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 48 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers rise from pre-booster to one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 13 Months of Age (Group 2) v Human SBA GMTs at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[259] |
| Parameter estimate | R-square |
| Point estimate | 0.09 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[259] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 49 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[260] |
| P-value | = 0.86 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[260] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 50 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[261] |
| P-value | = 0.7 ^[262] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[261] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[262] - Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 51 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[263] |
| P-value | = 0.58 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[263] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 52 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[264] |
| P-value | = 0.44 ^[265] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[264] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[265] - Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 53 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[266] |
| P-value | = 0.75 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[266] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 54 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[267] |
| P-value | = 0.84 ^[268] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[267] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[268] - Values from Group 2 and 3 were combined for this analysis.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 55 |
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[269] |
| P-value | = 0.67 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |
| Notes: | |
| [269] - Parametric correlation Confidence Intervals were not calculated for the purpose of this study. | |

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 56 |
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[270] |
| P-value | = 0.99 ^[271] |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.002 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |
| Notes: | |
| [270] - Parametric correlation Confidence Intervals were not calculated for the purpose of this study. | |

[271] - Values from Group 2 and 3 were combined for this analysis.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 57 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[272] |
| P-value | = 0.62 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[272] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 58 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[273] |
| P-value | = 0.36 ^[274] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[273] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[274] - Values from Group 2 and 3 were combined for this analysis.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 59 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for | |

the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[275] |
| P-value | = 0.99 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.003 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[275] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 60 |
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[276] |
| P-value | = 0.24 ^[277] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[276] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[277] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 61 |
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[278] |
| P-value | = 0.62 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[278] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 62 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[279] |
| P-value | = 0.69 ^[280] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[279] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[280] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 63 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[281] |
| P-value | = 0.6 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[281] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 64 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[282] |
| P-value | = 0.95 ^[283] |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[282] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

[283] - Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 65 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[284] |
| Parameter estimate | R-square |
| Point estimate | 0.0015 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[284] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 66 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[285] |
| Parameter estimate | R-square |
| Point estimate | 0.0057 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[285] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 67 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[286] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[286] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 68 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[287] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[287] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 69 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[288] |
| Parameter estimate | R-square |
| Point estimate | 0.0048 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[288] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 70 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[289] |
| Parameter estimate | R-square |
| Point estimate | 0.0018 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[289] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 71 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 137 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[290] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[290] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 72 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise from pre-booster levels in serogroup specific IgG concentration one month after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[291] |
| Parameter estimate | R-square |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[291] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Secondary: 5. Correlation and Linear Regression Coefficients Between Memory B Cells 1 Month After Primary Vaccination and Serogroup A, C, W-135 and Y Specific Plasma Cells and Memory B Cells and IgG Concentration and hSBA Titers 1 Week After MenACWY-CRM Booster

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 5. Correlation and Linear Regression Coefficients Between Memory B Cells 1 Month After Primary Vaccination and Serogroup A, C, W-135 and Y Specific Plasma Cells and Memory B Cells and IgG Concentration and hSBA Titers 1 Week After MenACWY-CRM Booster ^[292] |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Memory B cell response at 1 month after primary vaccination and at 1 week after booster vaccination was measured as mean number of meningococcal serogroup specific memory B cells by ELISpot assay per 2x100000 LOC. Plasma B cell response at 1 week after vaccination was measured as the mean number of cells secreting antibodies specific for meningococcal serogroup A, C, W-135 and Y, measured by ELISpot assay, per 2x100000 PBMC. Serogroup A, C, W-135 and Y specific IgG were measured by ELISA and reported as µg/mL and hSBA titers (GMTs) were measured at 1 week after booster vaccination.

This outcome was assessed in Group 3 subjects only as they provided a blood draw at 1 week following the MenACWY-CRM booster vaccination. Analysis was performed on PP booster population.

Note: Specific IgG GMCs and hSBA GMTs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

One month after primary and 1 week after booster

Notes:

[292] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: statistical analyses not applicable for this endpoint.

| End point values | MenACWY-CRM and Routine Vaccines (Group 3) | Plasma cells at 7 Days after booster vacc. (Group 3) | Specific IgG GMC 7 Days after booster vacc. (Group 3) | Specific Memory B cells at 7 days after booster vacc (Group 3) |
|--------------------------------------|--------------------------------------------|------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|
| Subject group type | Reporting group | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 43 ^[293] | 41 ^[294] | 32 ^[295] | 7 ^[296] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 1.72 (± 1.89) | 15.511 (± 22.96) | 9.28 (± 0) | 19.85 (± 9.12) |
| Serogroup C | 2.43 (± 2.32) | 7.373 (± 9.002) | 4.16 (± 0) | 39.41 (± 43.16) |

| | | | | |
|-----------------|--------------------|------------------------|----------------|----------------------|
| Serogroup W-135 | 1.57 (\pm 1.47) | 10.894 (\pm 13.229) | 7.3 (\pm 0) | 71.88 (\pm 67.59) |
| Serogroup Y | 1.78 (\pm 1.67) | 13.626 (\pm 19.535) | 11 (\pm 0) | 85.46 (\pm 86.23) |

Notes:

[293] - N= Serogroup A=30, C=43, W-135=40, Y=30

[294] - N= Serogroup A=40, C=41, W-135=41, Y=41

[295] - N= Serogroup A=32, C=31, W-135=31, Y=31; 95%CI= A=6.49-13, C=2.9-5.96, W-135=4.86-11, Y=7.27-16

[296] - N= Serogroup A=2, C=7, W-135=5, Y=5

| | | | | |
|--------------------------------------------------------------------|--------------------------------------------------------|--|--|--|
| End point values | Human SBA GMTs at 7 days after booster vacc. (Group 3) | | | |
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 43 ^[297] | | | |
| Units: Mean of memory B cells arithmetic mean (standard deviation) | | | | |
| Serogroup A | 97 (\pm 0) | | | |
| Serogroup C | 657 (\pm 0) | | | |
| Serogroup W-135 | 1063 (\pm 0) | | | |
| Serogroup Y | 435 (\pm 0) | | | |

Notes:

[297] - N= Serogroup A=43, C=41, W-135=31, Y=16; 95%CI= A=67-139, C=466-927, W-135=628-1802, Y=199-954

Statistical analyses

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 1 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[298] |
| P-value | = 0.68 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[298] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 2 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and

serogroup specific plasma cells one week after booster vaccination for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[299] |
| P-value | = 0.09 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.44 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[299] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 3 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[300] |
| P-value | = 0.69 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[300] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 4 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[301] |
| P-value | = 0.2 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.38 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[301] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 5 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[302] |
| P-value | = 0.88 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[302] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 6 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[303] |
| P-value | = 0.12 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.41 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[303] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[304] |
| P-value | = 0.37 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[304] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 8 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[305] |
| P-value | = 0.36 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.28 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[305] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 9 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[306] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[306] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 10 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[307] |
| Parameter estimate | R-square |
| Point estimate | 0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[307] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 11 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[308] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[308] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific plasma cells one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Plasma cells at 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 84 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[309] |
| Parameter estimate | R-square |
| Point estimate | 0.15 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[309] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 13 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and memory B cells one week after booster vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B cells at 7 days after booster vacc (Group 3) |
| Number of subjects included in analysis | 50 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[310] |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[310] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 14 |
| Statistical analysis description: Spearman correlation coefficient between memory B cells one month after primary vaccination and memory B cells one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B cells at 7 days after booster vacc (Group 3) |
| Number of subjects included in analysis | 50 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[311] |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[311] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 15 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B cells at 7 days after booster vacc (Group 3) |
| Number of subjects included in analysis | 50 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[312] |
| Parameter estimate | R-square |
| Point estimate | 1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[312] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 16 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B cells at 7 days after booster vacc (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 50 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[313] |
| Parameter estimate | R-square |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[313] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 17 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and memory B cells one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B cells at 7 days after booster vacc (Group 3) |
| Number of subjects included in analysis | 50 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[314] |
| Parameter estimate | R-square |
| Point estimate | 0 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[314] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 18 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup A

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[315] |
| P-value | = 0.79 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[315] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 19 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[316] |
| P-value | = 0.16 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.35 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[316] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 20 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[317] |
| P-value | = 0.1 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.48 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[317] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 21 |
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA |

| | |
|-----------------------------------------|----------------------------------------------|
| | GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[318] |
| P-value | = 0.0033 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.98 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[318] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 22 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[319] |
| P-value | = 0.91 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[319] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 23 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[320] |
| P-value | = 0.01 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.57 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[320] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 24 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[321] |
| P-value | = 0.19 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.39 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[321] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 25 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[322] |
| P-value | = 0.04 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.89 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[322] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 26 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[323] |
| Parameter estimate | R-square |
| Point estimate | 0.006 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[323] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 27 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[324] |
| Parameter estimate | R-square |
| Point estimate | 0.12 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[324] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 28 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[325] |
| Parameter estimate | R-square |
| Point estimate | 0.23 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[325] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 29 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 7 days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 86 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[326] |
| Parameter estimate | R-square |
| Point estimate | 0.96 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[326] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 30 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup A

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[327] |
| P-value | = 0.46 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.18 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[327] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 31 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[328] |
| P-value | = 0.9 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[328] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 32 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[329] |
| P-value | = 0.00844 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.51 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[329] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 33 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG |

| | |
|-----------------------------------------|------------------------------------------|
| | GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[330] |
| P-value | = 0.08 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.42 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[330] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 34 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[331] |
| P-value | = 0.52 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.15 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[331] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 35 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[332] |
| P-value | = 0.18 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.27 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[332] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 36 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup W-135

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[333] |
| P-value | = 0.07 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.37 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[333] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 37 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[334] |
| P-value | = 0.55 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[334] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 38 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[335] |
| Parameter estimate | R-square |
| Point estimate | 0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[335] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 39 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[336] |
| Parameter estimate | R-square |
| Point estimate | 0.0007 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[336] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 40 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[337] |
| Parameter estimate | R-square |
| Point estimate | 0.27 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[337] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 41 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration one week after booster vaccination for the serogroup Y

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG GMC 7 Days after booster vacc. (Group 3) |
| Number of subjects included in analysis | 75 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[338] |
| Parameter estimate | R-square |
| Point estimate | 0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[338] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Secondary: 6. Correlation and Linear Regression Coefficients Between CRM197 Specific Memory B Cells 1 Month After Primary Vaccination and CRM197 Specific Memory B Cells and IgG Concentration at 12 Months of Age and One Month After MenACWYCRM Booster Vaccination

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 6. Correlation and Linear Regression Coefficients Between CRM197 Specific Memory B Cells 1 Month After Primary Vaccination and CRM197 Specific Memory B Cells and IgG Concentration at 12 Months of Age and One Month After MenACWYCRM Booster Vaccination |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

CRM197 specific memory B cell response at each time point was measured as mean number of CRM197 specific memory B cells by ELISpot assay per 2x100000 LOC.

CRM197 specific IgG concentration was measured by ELISA reported as µg/mL at 12 months of age and one month after MenACWY-CRM booster vaccination.

Analysis was done on the PP primary population and PP booster population.

Specific IgG GMCs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

5 months (memory B cells), 12 months, and 13 months (memory B cells and IgG) of age

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Specific Memory B Cells at 12 Months of Age (Group 1) |
|----------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 | 30 | 43 | 75 |
| Units: Mean of CRM197 Specific B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| CRM197 | 6.942 (\pm 8.379) | 4.317 (\pm 4.589) | 6.063 (\pm 7.244) | 11.252 (\pm 10.883) |

| End point values | Specific Memory B Cells at 12 Months of Age (Group 2) | Specific Memory B Cells at 12 Months of Age (Group 3) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) |
|----------------------------------------|-------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 35 | 38 | 85 ^[339] | 37 ^[340] |
| Units: Mean of CRM197 Specific B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| CRM197 | 8.143 (\pm 8.81) | 10.112 (\pm 9.997) | 0.26 (\pm 0) | 0.23 (\pm 0) |

Notes:

[339] - 95%CI = 0.22-0.3

[340] - 95%CI =0.18-0.29

| End point values | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) | Specific Memory B Cells at 13 Months of Age (Group 1) | Specific Memory B Cells at 13 Months of Age (Group 2) | Specific Memory B Cells at 13 Months of Age (Group 3) |
|----------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[341] | 73 | 37 | 40 |
| Units: Mean of CRM197 Specific B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| CRM197 | 0.28 (\pm 0) | 25.64 (\pm 17.527) | 19.978 (\pm 12.454) | 22.953 (\pm 13.325) |

Notes:

[341] - 95%CI = 0.22-0.35

| End point values | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) | Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) | |
|----------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | |
| Number of subjects analysed | 81 ^[342] | 39 ^[343] | 46 ^[344] | |
| Units: Mean of CRM197 Specific B cells | | | | |
| arithmetic mean (standard deviation) | | | | |

| | | | | |
|--------|-----------------|-----------------|-----------------|--|
| CRM197 | 2.84 (\pm 0) | 2.81 (\pm 0) | 3.34 (\pm 0) | |
|--------|-----------------|-----------------|-----------------|--|

Notes:

[342] - 95%CI = 2.43-3.32

[343] - 95%CI = 2.24-3.52

[344] - 95%CI = 2.71-4.11

Statistical analyses

| Statistical analysis title | Statistical Analysis 1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells at 12 months of age | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 292 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[345] |
| P-value | = 0.0006 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.45 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[345] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 2 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells at 12 months of age | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 292 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[346] |
| P-value | = 0.0021 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.41 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[346] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells at 12 months of age

| | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 12 Months of Age (Group 1) v Specific Memory B Cells at 12 Months of Age (Group 2) v Specific Memory B Cells at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 292 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[347] |
| Parameter estimate | R-square |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[347] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells 1 month after booster vaccination

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[348] |
| P-value | = 0.53 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.15 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[348] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 5 |
| Statistical analysis description: Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells one month after booster vaccination | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 294 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[349] |
| P-value | = 0.26 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[349] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 6 |
| Statistical analysis description: Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells one month after booster vaccination | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[350] |
| P-value | = 0.84 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[350] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells one month after booster vaccination

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 150 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[351] |
| P-value | = 0.26 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.22 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[351] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 8 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells one month after booster vaccination

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific Memory B Cells at 13 Months of Age (Group 1) |
| Number of subjects included in analysis | 144 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[352] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[352] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific memory B cells one month after booster vaccination

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific Memory B Cells at 13 Months of Age (Group 2) v Specific Memory B Cells at 13 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 150 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[353] |
| Parameter estimate | R-square |
| Point estimate | 0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[353] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration at 12 months of age

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 306 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[354] |
| P-value | = 0.00012 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.33 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[354] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration at 12 months of age

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 306 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[355] |
| P-value | < 0.001 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.46 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[355] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration at 12 months of age

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 306 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[356] |
| P-value | < 0.001 |
| Method | Regression, Linear |
| Parameter estimate | R-square |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[356] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 1, 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 13 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|---------------------------------|
| Number of subjects included in analysis | 152 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[357] |
| P-value | = 0.06 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.24 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[357] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 14 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Pearson correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 158 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[358] |
| P-value | < 0.001 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.5 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[358] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 15 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 152 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[359] |
| P-value | = 0.01 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.31 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[359] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 16 |
| Statistical analysis description: | |
| Spearman correlation coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 158 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[360] |
| P-value | = 0.1 |
| Method | Non-parametric correlation |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.2 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[360] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 17 |
| Statistical analysis description: | |
| Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 152 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[361] |
| Parameter estimate | R-square |
| Point estimate | 0.06 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[361] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 18 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between CRM197 specific memory B cells one month after primary vaccination and CRM197 specific IgG concentration one month after booster vaccination

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 13 Months of Age (Group 3) |
| Number of subjects included in analysis | 158 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[362] |
| Parameter estimate | R-square |
| Point estimate | 0.25 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[362] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Secondary: 7. Increase in Serogroup A, C, W-135 and Y Specific Memory B Cells Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 7. Increase in Serogroup A, C, W-135 and Y Specific Memory B Cells Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Memory B cell response before and one month after MenACWY-CRM booster vaccination at 12 months of age was measured as mean number of meningococcal serogroup A, C, W-135 and Y specific memory B cells by ELISpot assay per 2×10^5 LOC.

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Before and one month after booster vaccination

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|-------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 75 | 37 | 40 | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A specific B cells (N=58,29,31) month 12 | 1.811 (± 1.935) | 1.988 (± 1.881) | 1.692 (± 1.398) | |
| Serogroup A specific B cells (N=54,26,33) month 13 | 6.429 (± 6.365) | 6.527 (± 5.957) | 7.488 (± 12.512) | |
| Serogroup C specific B cells (N=75,35,38) month 12 | 2.076 (± 1.926) | 1.983 (± 1.482) | 2.188 (± 2.004) | |
| Serogroup C specific B cells (N=73,37,40) month 13 | 9.437 (± 10.861) | 8.907 (± 9.791) | 8.915 (± 10.83) | |
| Serogroup W specific B cells (N=75,34,38) month 12 | 1.783 (± 2.189) | 1.793 (± 1.531) | 2.067 (± 2.716) | |
| Serogroup W specific B cells(N=73,37,39) month 13 | 6.205 (± 6.776) | 4.43 (± 5.939) | 5.201 (± 6.648) | |
| Serogroup Y specific B cells (N=67,33,34) month 12 | 2.172 (± 2.934) | 1.556 (± 0.898) | 1.749 (± 1.797) | |
| Serogroup Y specific B cells (N=64,32,34) month 13 | 6.95 (± 9.122) | 6.603 (± 8.198) | 5.746 (± 12.624) | |

Statistical analyses

No statistical analyses for this end point

Secondary: 8. Increase in Serogroup A, C, W-135 and Y Specific IgG Concentrations Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone

| | |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 8. Increase in Serogroup A, C, W-135 and Y Specific IgG Concentrations Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone |
| End point description: | Serogroup A, C, W-135 and Y specific IgG concentrations were measured before and one month after MenACWY-CRM booster vaccination by ELISA. |
| End point type | Secondary |
| End point timeframe: | Before and one month after booster vaccination |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|-------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 66 | 34 | 38 | |
| Units: µg/mL | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Serogroup A specific IgG (N=49,23,47) before | 0.37 (0.27 to 0.49) | 0.33 (0.23 to 0.46) | 0.31 (0.23 to 0.42) | |
| Serogroup A specific IgG (N=66,34,38) after | 4.59 (3.63 to 5.81) | 3.5 (2.6 to 4.73) | 5.18 (3.84 to 6.99) | |
| Serogroup C specific IgG (N=55,25,26) before | 0.19 (0.16 to 0.23) | 0.18 (0.14 to 0.22) | 0.2 (0.15 to 0.28) | |
| Serogroup C specific IgG (N=59,33,37) after | 1.83 (1.43 to 2.35) | 1.67 (1.18 to 2.36) | 2.63 (1.87 to 3.7) | |
| Serogroup W specific IgG (N=55,21,26) before | 0.31 (0.25 to 0.38) | 0.35 (0.25 to 0.48) | 0.29 (0.2 to 0.43) | |
| Serogroup W specific IgG (N=56,32,32) after | 5.97 (4.67 to 7.64) | 5.37 (4.06 to 7.1) | 5.12 (3.5 to 7.5) | |
| Serogroup Y specific IgG (N=49,21,24) before | 0.43 (0.34 to 0.55) | 0.47 (0.33 to 0.67) | 0.37 (0.25 to 0.55) | |
| Serogroup Y specific IgG (N=56,31,33) after | 6.2 (4.77 to 8.05) | 5.58 (4.06 to 7.67) | 5.75 (3.93 to 8.42) | |

Statistical analyses

No statistical analyses for this end point

Secondary: 9. Increase in Serogroup A, C, W-135 and Y hSBA Titers Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone

| | |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 9. Increase in Serogroup A, C, W-135 and Y hSBA Titers Before and 1 Month After MenACWY-CRM Booster Vaccination at 12 Months of Age Administered Concomitantly With Pneumococcal Conjugate Vaccine or Alone |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

hSBA GMTs were measured before and one month after MenACWY-CRM booster vaccination at 12 months of age.

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Before and one month after booster vaccination

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|---------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 85 | 40 | 42 | |
| Units: Geometric mean of titers | | | | |
| geometric mean (confidence interval 95%) | | | | |

| | | | | |
|----------------------------------------------|--------------------|---------------------|---------------------|--|
| Serogroup A - hSBA GMT - before | 2.2 (2.05 to 2.36) | 2 (2 to 2) | 2.14 (1.93 to 2.37) | |
| Serogroup A - hSBA GMT - after | 65 (47 to 89) | 48 (32 to 72) | 67 (44 to 102) | |
| Serogroup C - hSBA GMT (N=83,39,40) - before | 5.56 (4.23 to 7.3) | 4.83 (3.28 to 7.09) | 5.61 (3.78 to 8.33) | |
| Serogroup C - hSBA GMT (N=78,39,40)- after | 315 (239 to 417) | 217 (138 to 341) | 308 (214 to 445) | |
| Serogroup W - hSBA GMT (N=67,37,34)- before | 8.4 (6.03 to 12) | 12 (8.05 to 17) | 10 (6.73 to 15) | |
| Serogroup W - hSBA GMT (N=59,35,33) | 889 (622 to 1271) | 649 (419 to 1004) | 602 (343 to 1057) | |
| Serogroup Y - hSBA GMT (N=43,25,16)- before | 8.71 (5.82 to 13) | 9.9 (5.39 to 18) | 9.15 (4.95 to 17) | |
| Serogroup Y - hSBA GMT (N=32,20,15)- after | 492 (305 to 793) | 480 (269 to 857) | 475 (220 to 1025) | |

Statistical analyses

No statistical analyses for this end point

Secondary: 10. Serogroups A, C, W-135 and Y Specific Memory B Cell Response in Children Lacking a hSBA Titer of $\geq 1:8$ One Month After MenACWY-CRM Primary Vaccination

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 10. Serogroups A, C, W-135 and Y Specific Memory B Cell Response in Children Lacking a hSBA Titer of $\geq 1:8$ One Month After MenACWY-CRM Primary Vaccination |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

The memory B cell response in children lacking a hSBA titer $\geq 1:8$ one month after MenACWY-CRM primary vaccination was calculated as the mean number of meningococcal serogroup specific memory B cells, measured by ELISpot assay per 2x100000 LOC.

- Serogroup C specific memory B cells (N=6,2,1)/ Group 3: Analysis was done on one subject only
- Serogroup W-135 specific memory B cells (N=3,0,1)/ Group 2: None of the subject had hSBA titer $< 1:8$
- Serogroup W-135 specific memory B cells (N=3,0,1)/ Group 3: Analysis was done on one subject only
- Serogroup Y specific memory B cells (N=0,1,1)/ Group 1: None of the subject had hSBA titer $< 1:8$

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

One month after primary vaccination

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|---------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 24 | 11 | 8 | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A specific memory B cells (N=24,11,8) | 1.533 (\pm 1.028) | 1.391 (\pm 0.467) | 1.25 (\pm 0) | |
| Serogroup C specific memory B cells (N=6,2,1) | 2.667 (\pm 2.444) | 1.25 (\pm 0) | 1.25 (\pm 0) | |
| Serogroup W-135 specific memory B cells (N=3,0,1) | 1.25 (\pm 0) | 0 (\pm 0) | 1.25 (\pm 0) | |

| | | | | |
|--------------------------------------------------|--------------|-----------------|-----------------|--|
| Serogroup Y specific memory B cells (N=0,1,1) | 0 (\pm 0) | 1.25 (\pm 0) | 1.25 (\pm 0) | |
|--------------------------------------------------|--------------|-----------------|-----------------|--|

Statistical analyses

No statistical analyses for this end point

Secondary: 11. Kinetics of Serogroup A, C, W-135 and Y Specific Memory B Cells and Plasma B Cells After MenACWY-CRM Primary Vaccination

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 11. Kinetics of Serogroup A, C, W-135 and Y Specific Memory B Cells and Plasma B Cells After MenACWY-CRM Primary Vaccination ^[363] |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

To assess the kinetics of serogroup A, C, W-135 and Y specific memory B cells and plasma B cells were measured on days 0, 7, 14, 49, 90, and 120 following vaccination with MenACWY-CRM vaccination at month 4 of the study

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Day 0, 7, 14, 49, 90, and 120 after MenACWY-CRM vaccination at month 4

Notes:

[363] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: statistical analyses not applicable for this endpoint.

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | | | |
|--------------------------------------------------|--------------------------------------------|--|--|--|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 88 | | | |
| Units: Mean | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A sp. memory B cell (N=4)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup A sp. memory B cell (N=14)- Day 7 | 3.889 (\pm 5.07) | | | |
| Serogroup A sp. memory B cell (N=7)- Day 14 | 2.343 (\pm 2.891) | | | |
| Serogroup A sp. memory B cell (N=10)- Day 49 | 1.97 (\pm 1.533) | | | |
| Serogroup A sp. memory B cell (N=9)- Day 90 | 1.25 (\pm 0) | | | |
| Serogroup A sp. memory B cell (N=11)- Day 120 | 1.845 (\pm 1.14) | | | |
| Serogroup C sp. memory B cell (N=6)- Day 0 | 1.558 (\pm 0.775) | | | |
| Serogroup C sp. memory B cell (N=16)- Day 7 | 2.856 (\pm 2.974) | | | |
| Serogroup C sp. memory B cell (N=12)- Day 14 | 5.183 (\pm 5.723) | | | |
| Serogroup C sp. memory B cell (N=13)- Day 49 | 2.323 (\pm 2.044) | | | |
| Serogroup C sp. memory B cell (N=16)- Day 90 | 2.469 (\pm 1.865) | | | |

| | | | | |
|------------------------------------------------------|----------------------|--|--|--|
| Serogroup C sp. memory B cell (N=14)- Day 120 | 1.561 (\pm 1.163) | | | |
| Serogroup W-135 sp. memory B cell (N=4)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. memory B cell (N=15)- Day 7 | 3.737 (\pm 6.68) | | | |
| Serogroup W-135 sp. memory B cell (N=12)- Day 14 | 2.754 (\pm 2.245) | | | |
| Serogroup W-135 sp. memory B cell (N=13)- Day 49 | 2.735 (\pm 2.4) | | | |
| Serogroup W-135 sp. memory B cell (N=14)- Day 90 | 1.404 (\pm 0.575) | | | |
| Serogroup W-135 sp. memory B cell (N=14)- Day 120 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. memory B cell (N=3)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. memory B cell (N=15)- Day 7 | 4.847 (\pm 9.043) | | | |
| Serogroup Y sp. memory B cell (N=7)- Day 14 | 1.471 (\pm 0.586) | | | |
| Serogroup Y sp. memory B cell (N=11)- Day 49 | 1.482 (\pm 0.769) | | | |
| Serogroup Y sp. memory B cell (N=12)- Day 90 | 1.567 (\pm 0.74) | | | |
| Serogroup Y sp. memory B cell (N=13)- Day 120 | 1.527 (\pm 0.684) | | | |
| Serogroup A sp. plasma B cell (N=3)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup A sp. plasma B cell (N=1)- Day 7 | 1.25 (\pm 0) | | | |
| Serogroup A sp. plasma B cell (N=1)- Day 14 | 1.25 (\pm 0) | | | |
| Serogroup A sp. plasma B cell (N=2)- Day 49 | 1.25 (\pm 0) | | | |
| Serogroup A sp. plasma B cell (N=2)- Day 90 | 1.25 (\pm 0) | | | |
| Serogroup A sp. plasma B cell (N=2)- Day 120 | 1.25 (\pm 0) | | | |
| Serogroup C sp. plasma B cell (N=3)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup C sp. plasma B cell (N=2)- Day 7 | 2.025 (\pm 1.096) | | | |
| Serogroup C sp. plasma B cell (N=1)- Day 14 | 1.25 (\pm 0) | | | |
| Serogroup C sp. plasma B cell (N=2)- Day 49 | 1.25 (\pm 0) | | | |
| Serogroup C sp. plasma B cell (N=2)- Day 90 | 1.25 (\pm 0) | | | |
| Serogroup C sp. plasma B cell (N=3)- Day 120 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=3)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=1)- Day 7 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=1)- Day 14 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=2)- Day 49 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=2)- Day 90 | 1.25 (\pm 0) | | | |
| Serogroup W-135 sp. plasma B cell (N=3)- Day 120 | 1.25 (\pm 0) | | | |

| | | | | |
|-------------------------------------------------|-----------------|--|--|--|
| Serogroup Y sp. plasma B cell (N=3)- Day 0 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. plasma B cell (N=1)- Day 7 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. plasma B cell (N=1)- Day 14 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. plasma B cell (N=2)- Day 49 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. plasma B cell (N=2)- Day 90 | 1.25 (\pm 0) | | | |
| Serogroup Y sp. plasma B cell (N=2)- Day 120 | 1.25 (\pm 0) | | | |

Statistical analyses

No statistical analyses for this end point

Secondary: 12. Kinetics of Serogroup A, C, W-135 and Y Specific IgG Concentrations After MenACWY-CRM Primary Vaccination

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|
| End point title | 12. Kinetics of Serogroup A, C, W-135 and Y Specific IgG Concentrations After MenACWY-CRM Primary Vaccination ^[364] |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|

End point description:

To assess the kinetics of serogroup A, C, W-135 and Y specific IgG concentrations, the geometric means was measured on day 0, 7, 14, 30, 49, 90, and 120 following vaccination with MenACWY-CRM vaccination at month 4 of the study.

Note: Confidence Interval was not calculated for Serogroup A specific IgG (N=1)- Day 120 because only one subject was analyzed.

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Day 0, 7, 14, 30, 49, 90,120 after MenACWY-CRM vaccination at month 4

Notes:

[364] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: statistical analyses not applicable for this endpoint.

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | | | |
|------------------------------------------|--------------------------------------------|--|--|--|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 60 | | | |
| Units: Geometric mean of Concentrations | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Serogroup A specific IgG (N=3)- Day 0 | 0.98 (0.0094 to 101) | | | |
| Serogroup A specific IgG (N=9)- Day 7 | 2.23 (1.02 to 4.87) | | | |
| Serogroup A specific IgG (N=7)- Day 14 | 2.27 (0.75 to 6.9) | | | |
| Serogroup A specific IgG (N=45)- Day 30 | 1.29 (1.01 to 1.65) | | | |

| | | | | |
|---------------------------------------------|----------------------|--|--|--|
| Serogroup A specific IgG (N=5)- Day 49 | 1.39 (0.47 to 4.14) | | | |
| Serogroup A specific IgG (N=5)- Day 90 | 0.94 (0.62 to 1.43) | | | |
| Serogroup A specific IgG (N=1)- Day 120 | 1.03 (-9999 to 9999) | | | |
| Serogroup C specific IgG (N=4)- Day 0 | 0.92 (0.19 to 4.35) | | | |
| Serogroup C specific IgG (N=14)- Day 7 | 1.4 (0.85 to 2.28) | | | |
| Serogroup C specific IgG (N=8)- Day 14 | 1.43 (0.76 to 2.7) | | | |
| Serogroup C specific IgG (N=60)- Day 30 | 0.94 (0.77 to 1.14) | | | |
| Serogroup C specific IgG (N=5)- Day 49 | 1.02 (0.28 to 3.69) | | | |
| Serogroup C specific IgG (N=7)- Day 90 | 0.75 (0.46 to 1.23) | | | |
| Serogroup C specific IgG (N=5)- Day 120 | 0.85 (0.26 to 2.75) | | | |
| Serogroup W-135 specific IgG (N=3)- Day 0 | 0.43 (0.0096 to 19) | | | |
| Serogroup W-135 specific IgG (N=10)- Day 7 | 3.75 (1.76 to 8) | | | |
| Serogroup W-135 specific IgG (N=8)- Day 14 | 3.77 (1.82 to 7.84) | | | |
| Serogroup W-135 specific IgG (N=39)- Day 30 | 1.53 (1.14 to 2.05) | | | |
| Serogroup W-135 specific IgG (N=6)- Day 49 | 2.58 (0.83 to 8.05) | | | |
| Serogroup W-135 specific IgG (N=9)- Day 90 | 0.81 (0.59 to 1.13) | | | |
| Serogroup W-135 specific IgG (N=2)- Day 120 | 0.57 (0.0011 to 305) | | | |
| Serogroup Y specific IgG (N=3)- Day 0 | 0.82 (0.039 to 18) | | | |
| Serogroup Y specific IgG (N=4)- Day 7 | 1.46 (0.24 to 8.99) | | | |
| Serogroup Y specific IgG (N=3)- Day 14 | 5.04 (0.58 to 44) | | | |
| Serogroup Y specific IgG (N=33)- Day 30 | 1.34 (1.01 to 1.79) | | | |
| Serogroup Y specific IgG (N=3)- Day 49 | 2.47 (0.24 to 26) | | | |
| Serogroup Y specific IgG (N=2)- Day 90 | 0.57 (0.039 to 8.17) | | | |

Statistical analyses

No statistical analyses for this end point

Secondary: 13. Kinetics of Serogroup A, C, W-135 and Y hSBA Titers After MenACWY-CRM Primary Vaccination

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------|
| End point title | 13. Kinetics of Serogroup A, C, W-135 and Y hSBA Titers After MenACWY-CRM Primary Vaccination ^[365] |
|-----------------|----------------------------------------------------------------------------------------------------------------|

End point description:

To assess the kinetics of serogroup A, C, W-135 and Y hSBA titers, the geometric means was measured on day 0, 7, 14, 30, 49, 90, and 120 following vaccination with MenACWY-CRM vaccination at month 4

of the study.

Note: Confidence Interval was not calculated for Serogroup Y - hSBA GMTs (N=1)- Day 0 because only one subject was analyzed.

| | |
|-----------------------------------------------------------------------|-----------|
| End point type | Secondary |
| End point timeframe: | |
| Day 0, 7, 14, 30, 49, 90,120 after MenACWY-CRM vaccination at month 4 | |

Notes:

[365] - The end point is not reporting statistics for all the arms in the baseline period. It is expected all the baseline period arms will be reported on when providing values for an end point on the baseline period.

Justification: statistical analyses not applicable for this endpoint.

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | | | |
|--------------------------------------------|--------------------------------------------|--|--|--|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 61 | | | |
| Units: Geometric mean of titers | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Serogroup A - hSBA GMTs (N=7)- Day 0 | 2 (2 to 2) | | | |
| Serogroup A - hSBA GMTs (N=18)- Day 7 | 13 (7.15 to 25) | | | |
| Serogroup A - hSBA GMTs (N=16)- Day 14 | 26 (10 to 63) | | | |
| Serogroup A - hSBA GMTs - Day 30 | 9.79 (7.22 to 13) | | | |
| Serogroup A - hSBA GMTs (N=16)- Day 49 | 9.53 (4.49 to 20) | | | |
| Serogroup A - hSBA GMTs (N=18)- Day 90 | 2.63 (1.77 to 3.91) | | | |
| Serogroup A - hSBA GMTs (N=16) Day 120 | 4.45 (2.25 to 8.83) | | | |
| Serogroup C - hSBA GMTs (N=5)- Day 0 | 7.19 (1.33 to 39) | | | |
| Serogroup C - hSBA GMTs (N=16)- Day 7 | 138 (43 to 439) | | | |
| Serogroup C - hSBA GMTs (N=12)- Day 14 | 180 (55 to 596) | | | |
| Serogroup C - hSBA GMTs (N=31)- Day 30 | 105 (73 to 151) | | | |
| Serogroup C - hSBA GMTs (N=16)- Day 49 | 104 (50 to 219) | | | |
| Serogroup C - hSBA GMTs (N=18)- Day 90 | 31 (18 to 53) | | | |
| Serogroup C - hSBA GMTs (N=16)- Day 120 | 15 (6.5 to 36) | | | |
| Serogroup W-135 - hSBA GMTs (N=5)- Day 0 | 4.43 (1.48 to 13) | | | |
| Serogroup W-135 - hSBA GMTs (N=12)- Day 7 | 99 (42 to 232) | | | |
| Serogroup W-135 - hSBA GMTs (N=9)- Day 14 | 144 (42 to 497) | | | |
| Serogroup W-135 - hSBA GMTs (N=61)- Day 30 | 60 (44 to 83) | | | |
| Serogroup W-135 - hSBA GMTs (N=11)- Day 49 | 35 (18 to 69) | | | |
| Serogroup W-135 - hSBA GMTs (N=15)- Day 90 | 20 (11 to 35) | | | |

| | | | | |
|--------------------------------------------|-------------------|--|--|--|
| Serogroup W-135 - hSBA GMTs (N=4)- Day 120 | 12 (7.58 to 20) | | | |
| Serogroup Y - hSBA GMTs (N=1)- Day 0 | 2 (-9999 to 9999) | | | |
| Serogroup Y - hSBA GMTs (N=8)- Day 7 | 32 (8.06 to 123) | | | |
| Serogroup Y - hSBA GMTs (N=4)- Day 14 | 95 (8 to 1131) | | | |
| Serogroup Y - hSBA GMTs (N=20)- Day 30 | 24 (16 to 38) | | | |
| Serogroup Y - hSBA GMTs (N=8)- Day 49 | 33 (11 to 101) | | | |
| Serogroup Y - hSBA GMTs (N=9)- Day 90 | 12 (4.62 to 29) | | | |
| Serogroup Y - hSBA GMTs (N=8)- Day 120 | 8.15 (3.77 to 18) | | | |

Statistical analyses

No statistical analyses for this end point

Secondary: 14. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells 1 Month After MenACWY-CRM Primary Vaccination and IgG Concentration at Day 1 in the Serum of Mothers of Infants

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 14. Correlation and Linear Regression Coefficients Between Serogroup A, C, W-135 and Y Specific Memory B Cells 1 Month After MenACWY-CRM Primary Vaccination and IgG Concentration at Day 1 in the Serum of Mothers of Infants |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

The serogroup A, C, W-135 and Y specific IgG concentrations were measured in the serum of mothers at the time of their enrollment into the study (Day 1) by ELISA and reported as µg/mL.

Analysis was done on the PP primary population and PP booster population.

Specific IgG GMCs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

Day 1 (IgG) and one month after primary vaccination (B cells)

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[366] | 31 ^[367] | 43 ^[368] | 101 ^[369] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 4.14 (± 0) |
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 0.54 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.72) | 1.57 (± 1.47) | 0.48 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 0.64 (± 0) |

Notes:

[366] - N= Serogroup A=50, C=71, W-135=62, Y=54

[367] - N= Serogroup A=25, C=31, W-135=26, Y=25

[368] - N= Serogroup A=30, C=43, W-135=40, Y=30

[369] - N= Serogroup A,C,Y =101, W-135=98; 95%CI= A=3.18-5.4, C=0.38-0.75,W-135=0.37-0.61, Y=0.48-0.84

| End point values | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) | Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) | | |
|--------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--|--|
| Subject group type | Subject analysis set | Subject analysis set | | |
| Number of subjects analysed | 41 ^[370] | 52 ^[371] | | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 6.11 (± 0) | 3.28 (± 0) | | |
| Serogroup C | 1.59 (± 0) | 0.61 (± 0) | | |
| Serogroup W-135 | 0.75 (± 0) | 0.62 (± 0) | | |
| Serogroup Y | 0.96 (± 0) | 0.69 (± 0) | | |

Notes:

[370] - 95%CI= A=4.03-9.27, C=0.94-2.7,W-135=0.5-1.11,Y=0.62-1.49

[371] - N= Serogroup A,C,Y=52, W-135=51; 95%CI= A=2.27-4.75, C=0.38-0.98, W-135=0.43-0.88, Y=0.47-1.02

Statistical analyses

| Statistical analysis title | Statistical Analysis 1 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[372] |
| P-value | = 0.7 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | 0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[372] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 2 |
|----------------------------|------------------------|
|----------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup C

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[373] |
| P-value | = 0.63 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[373] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup W-135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[374] |
| P-value | = 0.74 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[374] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Pearson correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[375] |
| P-value | = 0.74 |
| Method | Parametric correlation |
| Parameter estimate | Pearson correlation coefficient |
| Point estimate | -0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[375] - Parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 5 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[376] |
| P-value | = 0.05 |
| Method | Non-parametric correlation] |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.18 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[376] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 6 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric |

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------|
| | Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[377] |
| P-value | = 0.36 |
| Method | Non-parametric correlation] |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[377] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 7 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[378] |
| P-value | = 0.18 |
| Method | Non-parametric correlation] |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | -0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[378] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 8 |
| Statistical analysis description: | |
| Spearman correlation coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |

| | |
|-----------------------------------------|----------------------------------|
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[379] |
| P-value | = 0.82 |
| Method | Non-parametric correlation] |
| Parameter estimate | Spearman correlation coefficient |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[379] - Non-parametric correlation

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup A

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[380] |
| Parameter estimate | R-square |
| Point estimate | 0.0013 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[380] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup C

| | |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[381] |
| Parameter estimate | R-square |
| Point estimate | 0.0014 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[381] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup W-135

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[382] |
| Parameter estimate | R-square |
| Point estimate | 0.0008 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[382] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at day 1 in the serum of mother for the serogroup Y

| | |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 1) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 2) v Specific IgG Geometric Mean Conc at Day 1 in mothers (Group 3) |
| Number of subjects included in analysis | 339 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[383] |
| Parameter estimate | R-square |
| Point estimate | 0.0009 |

| Confidence interval | |
|---------------------|---------|
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[383] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Secondary: 15. Linear Regression Coefficients (1) Between Serogroup A, C, W-135 and Y Memory B at 5 Months and hSBA Titers at 12 Months, (2) Between Serogroup A, C, W-135 and Y Memory B at 5 Months and IgG at 12 Months, After a 2-Dose Primary Course of MenACWY-CRM

| | |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 15. Linear Regression Coefficients (1) Between Serogroup A, C, W-135 and Y Memory B at 5 Months and hSBA Titers at 12 Months, (2) Between Serogroup A, C, W-135 and Y Memory B at 5 Months and IgG at 12 Months, After a 2-Dose Primary Course of MenACWY-CRM |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

Linear regression analysis between memory B cells at 5 months of age and hSBA titers and IgG at 12 months of age was performed with and without inclusion of demographic factors (subject's household smoking status, number of older children living in subject's household, attendance at daycare and total duration of breast feeding) in the model.

Analysis was performed on the PP dataset of persistence population.

Note: Specific IgG GMCs and hSBA GMTs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

1 month post primary vaccination (B cells) and 12 months (hSBA titers and IgG)

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Human SBA GMTs at 12 Months of Age (Group 1) |
|--------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|----------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[384] | 31 ^[385] | 43 ^[386] | 85 ^[387] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 2.2 (± 0) |
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 5.56 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.721) | 1.57 (± 1.47) | 8.4 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 8.71 (± 0) |

Notes:

[384] - N= Serogroup A=50, C=71, W-135=62, Y=54

[385] - N= Serogroup A=25, C=31, W-135=26, Y=25

[386] - N= Serogroup A=30, C=43, W-135=40, Y=30

[387] - N= Serogroup A=85, C=83, W-135=67, Y=43; 95%CI= A=2.05-2.36, C=4.23-7.3, W-135=6.03-12, Y=5.82-13

| End point values | Human SBA GMTs at 12 Months of Age (Group 2) | Human SBA GMTs at 12 Months of Age (Group 3) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) |
|------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|
|------------------|----------------------------------------------|----------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|

| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| Number of subjects analysed | 40 ^[388] | 42 ^[389] | 55 ^[390] | 25 ^[391] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2 (± 0) | 2.14 (± 0) | 0.37 (± 0) | 0.33 (± 0) |
| Serogroup C | 4.83 (± 0) | 5.61 (± 0) | 0.19 (± 0) | 0.18 (± 0) |
| Serogroup W-135 | 12 (± 0) | 10 (± 0) | 0.31 (± 0) | 0.35 (± 0) |
| Serogroup Y | 9.9 (± 0) | 9.15 (± 0) | 0.43 (± 0) | 0.47 (± 0) |

Notes:

[388] - N= Serogroup A=40, C=39, W-135=37, Y=25; 95%CI= A=2-2, C=3.28-7.09, W-135=8.05-17, Y=5.39-18

[389] - N= Serogroup A=42, C=40, W-135=34, Y=16; 95%CI= A=1.93-2.37, C=3.78-8.33, W-135=6.73-15, Y=4.95-17

[390] - N= Serogroup A=49, C=55, W-135=55, Y=49; 95%CI= A=0.27-0.49, C=0.16-0.23, W-135=0.25-0.38, Y=0.34-0.55

[391] - N= Serogroup A=23, C=25, W-135=21, Y=21; 95%CI= A=0.23-0.46, C=0.14-0.22, W-135=0.25-0.48, Y=0.33-0.67

| End point values | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) | | | |
|--------------------------------------|----------------------------------------------------------------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 26 ^[392] | | | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 0.31 (± 0) | | | |
| Serogroup C | 0.2 (± 0) | | | |
| Serogroup W-135 | 0.29 (± 0) | | | |
| Serogroup Y | 0.37 (± 0) | | | |

Notes:

[392] - N= Serogroup A=24, C=26, W-135=26, Y=24; 95%CI= A=0.23-0.42, C=0.15-0.28, W-135=0.2-0.43, Y=0.25-0.55

Statistical analyses

| Statistical analysis title | Statistical Analysis 1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[393] |
| Parameter estimate | R-square |
| Point estimate | 0.34 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[393] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 2 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[394] |
| Parameter estimate | R-square |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[394] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 3 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells at 5 months of age and hSBA titers at 12 months of age after a 2, 4-month course of MenACWY-CRM vaccination for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[395] |
| Parameter estimate | R-square |
| Point estimate | 0.09 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[395] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup C

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[396] |
| Parameter estimate | R-square |
| Point estimate | 0.16 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[396] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[397] |
| Parameter estimate | R-square |
| Point estimate | 0.22 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[397] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[398] |
| Parameter estimate | R-square |
| Point estimate | 0.33 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[398] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 7 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[399] |
| Parameter estimate | R-square |
| Point estimate | 0.74 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[399] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 8 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[400] |
| Parameter estimate | R-square |
| Point estimate | 0.53 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[400] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[401] |
| Parameter estimate | R-square |
| Point estimate | 0.37 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[401] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[402] |
| Parameter estimate | R-square |
| Point estimate | 0.14 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[402] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[403] |
| Parameter estimate | R-square |
| Point estimate | 0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[403] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 12 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[404] |
| Parameter estimate | R-square |
| Point estimate | 0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[404] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 13 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[405] |
| Parameter estimate | R-square |
| Point estimate | 0.9 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[405] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 14 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[406] |
| Parameter estimate | R-square |
| Point estimate | 0.78 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[406] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 15 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[407] |
| Parameter estimate | R-square |
| Point estimate | 0.94 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[407] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 16 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and hSBA titers at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[408] |
| Parameter estimate | R-square |
| Point estimate | 0.85 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[408] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 17 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[409] |
| Parameter estimate | R-square |
| Point estimate | 0.03 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[409] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 18 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[410] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[410] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 19 |
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[411] |
| Parameter estimate | R-square |
| Point estimate | 0.007 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[411] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 20 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[412] |
| Parameter estimate | R-square |
| Point estimate | 0.04 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[412] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 21 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[413] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[413] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 22 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[414] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[414] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 23 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[415] |
| Parameter estimate | R-square |
| Point estimate | 0.13 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[415] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 24 |
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[416] |
| Parameter estimate | R-square |
| Point estimate | 0.28 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[416] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 25 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[417] |
| Parameter estimate | R-square |
| Point estimate | 0.3 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[417] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 26 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[418] |
| Parameter estimate | R-square |
| Point estimate | 0.1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[418] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 27 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[419] |
| Parameter estimate | R-square |
| Point estimate | 0.11 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[419] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 28 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[420] |
| Parameter estimate | R-square |
| Point estimate | 0.06 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[420] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 29 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[421] |
| Parameter estimate | R-square |
| Point estimate | 0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[421] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 30 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[422] |
| Parameter estimate | R-square |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[422] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 31 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[423] |
| Parameter estimate | R-square |
| Point estimate | 0.39 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[423] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 32 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors memory B cells one month after primary vaccination and serogroup specific IgG concentration at 12 months of age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 125 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[424] |
| Parameter estimate | R-square |
| Point estimate | 0.33 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[424] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Secondary: 16. Linear Regression Coefficients (1) Between Serogroup A, C, W-135 and Y Memory B Cells at 5 Months and Rise in hSBA Titers, (2) Between Serogroup A, C, W-135 and Y Memory B Cells at 5 Months and Rise in IgG, After Third Dose of MenACWY-CRM at 12 Months

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| End point title | 16. Linear Regression Coefficients (1) Between Serogroup A, C, W-135 and Y Memory B Cells at 5 Months and Rise in hSBA Titers, (2) Between Serogroup A, C, W-135 and Y Memory B Cells at 5 Months and Rise in IgG, After Third Dose of MenACWY-CRM at 12 Months |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

End point description:

The rise in serogroup-specific hSBA and IgG was calculated by pre/post third dose geometric mean ratios, calculated by the difference in the log₁₀ of the concentrations/titers measured at 13 months to the log₁₀ of the concentrations at 12 months: i.e. rise = log₁₀(x) at 13 months minus log₁₀(x) at 12 months where x is the serogroup specific IgG or SBA titers.

Linear regression analysis between memory B cells at 5 months of age and rise in hSBA titers or IgG at 12 months of age was performed with and without inclusion of demographic factors (subject's household smoking status, number of older children living in subject's household, attendance at daycare and total duration of breast feeding) in the model.

Analysis was performed on the PP dataset after booster vaccination.

Note: Specific IgG GMCs and hSBA GMTs dispersion was reported as confidence intervals (see table notes)

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

1 month post primary vaccination (B cells) and 12 months (hSBA titers and IgG)

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | Human SBA GMTs at 12 Months of Age (Group 1) |
|--------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------|
| Subject group type | Reporting group | Reporting group | Reporting group | Subject analysis set |
| Number of subjects analysed | 71 ^[425] | 31 ^[426] | 43 ^[427] | 85 ^[428] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2.1 (± 2.03) | 1.8 (± 1.27) | 1.72 (± 1.89) | 2.2 (± 0) |
| Serogroup C | 2.57 (± 2.73) | 1.71 (± 1.12) | 2.43 (± 2.32) | 5.56 (± 0) |
| Serogroup W-135 | 2.39 (± 4.69) | 1.5 (± 0.721) | 1.57 (± 1.47) | 8.4 (± 0) |
| Serogroup Y | 2.91 (± 8.36) | 1.43 (± 0.71) | 1.78 (± 1.67) | 8.71 (± 0) |

Notes:

[425] - N= Serogroup A=50, C=71, W-135=62, Y=54

[426] - N= Serogroup A=25, C=31, W-135=26, Y=25

[427] - N= Serogroup A=30, C=43, W-135=40, Y=30

[428] - N= Serogroup A=85, C=83, W-135=67, Y=43; 95%CI= A=2.05-2.36, C=4.23-7.3, W-135=6.03-12, Y=5.82-13

| End point values | Human SBA GMTs at 12 Months of Age (Group 2) | Human SBA GMTs at 12 Months of Age (Group 3) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) |
|--------------------------------------|-------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Subject group type | Subject analysis set | Subject analysis set | Subject analysis set | Subject analysis set |
| Number of subjects analysed | 40 ^[429] | 42 ^[430] | 55 ^[431] | 25 ^[432] |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 2 (± 0) | 2.14 (± 0) | 0.37 (± 0) | 0.33 (± 0) |
| Serogroup C | 4.83 (± 0) | 5.61 (± 0) | 0.19 (± 0) | 0.18 (± 0) |
| Serogroup W-135 | 12 (± 0) | 10 (± 0) | 0.31 (± 0) | 0.35 (± 0) |
| Serogroup Y | 9.9 (± 0) | 9.15 (± 0) | 0.43 (± 0) | 0.47 (± 0) |

Notes:

[429] - N= Serogroup A=40, C=39, W-135=37, Y=25; 95%CI= A=2-2, C=3.28-7.09, W-135=8.05-17, Y=5.39-18

[430] - N= Serogroup A=42, C=40, W-135=34, Y=16; 95%CI= A=1.93-2.37, C=3.78-8.33, W-135=6.73-15, Y=4.95-17

[431] - N= Serogroup A=49, C=55, W-135=55, Y=49; 95%CI= A=0.27-0.49, C=0.16-0.23, W-135=0.25-0.38, Y=0.34-0.55

[432] - N= Serogroup A=23, C=25, W-135=21, Y=21; 95%CI= A=0.23-0.46, C=0.14-0.22, W-135=0.25-0.48, Y=0.33-0.67

| End point values | Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) | | | |
|--------------------------------------|----------------------------------------------------------------------------|--|--|--|
| Subject group type | Subject analysis set | | | |
| Number of subjects analysed | 47 ^[433] | | | |
| Units: Mean of memory B cells | | | | |
| arithmetic mean (standard deviation) | | | | |
| Serogroup A | 0.31 (± 0) | | | |
| Serogroup C | 0.2 (± 0) | | | |
| Serogroup W-135 | 0.29 (± 0) | | | |
| Serogroup Y | 0.37 (± 0) | | | |

Notes:

[433] - N= Serogroup A=47, C=26, W-135=26, Y=24; 95%CI= A=0.23-0.42, C=0.15-0.28, W-135=0.2-0.43, Y=0.25-0.55

Statistical analyses

| Statistical analysis title | Statistical Analysis 1 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[434] |
| Parameter estimate | R-square |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[434] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 2 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[435] |
| Parameter estimate | R-square |
| Point estimate | 0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[435] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 3 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Statistical analysis description: Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup C | |

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[436] |
| Parameter estimate | R-square |
| Point estimate | 0.24 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[436] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 4 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[437] |
| Parameter estimate | R-square |
| Point estimate | 0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[437] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 5 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[438] |
| Parameter estimate | R-square |
| Point estimate | 0.52 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[438] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 6 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[439] |
| Parameter estimate | R-square |
| Point estimate | 0.29 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[439] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 7 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[440] |
| Parameter estimate | R-square |
| Point estimate | 1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[440] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 8 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[441] |
| Parameter estimate | R-square |
| Point estimate | 0.05 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[441] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|------------------------|
| Statistical analysis title | Statistical Analysis 9 |
|-----------------------------------|------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[442] |
| Parameter estimate | R-square |
| Point estimate | 0.7 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[442] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 10 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup A

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[443] |
| Parameter estimate | R-square |
| Point estimate | 0.21 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[443] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 11 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup C

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[444] |
| Parameter estimate | R-square |
| Point estimate | 0.5 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[444] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 12 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[445] |
| Parameter estimate | R-square |
| Point estimate | 0.16 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[445] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 13 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[446] |
| Parameter estimate | R-square |
| Point estimate | 0.93 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[446] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 14 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup W-135 | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[447] |
| Parameter estimate | R-square |
| Point estimate | 0.3 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[447] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 15 |
| Statistical analysis description: | |
| Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Human SBA GMTs at 12 Months of Age (Group 1) |

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[448] |
| Parameter estimate | R-square |
| Point estimate | 1 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[448] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 16 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in hSBA after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Human SBA GMTs at 12 Months of Age (Group 2) v Human SBA GMTs at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 156 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[449] |
| Parameter estimate | R-square |
| Point estimate | 0.12 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[449] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 17 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[450] |
| Parameter estimate | R-square |
| Point estimate | 0.0015 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[450] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 18 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup A | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[451] |
| Parameter estimate | R-square |
| Point estimate | 0.0057 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[451] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| Statistical analysis title | Statistical Analysis 19 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[452] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[452] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| Statistical analysis title | Statistical Analysis 20 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Statistical analysis description: | |
| Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup C | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric |

| | |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------|
| | Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[453] |
| Parameter estimate | R-square |
| Point estimate | 0.02 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[453] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 21 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[454] |
| Parameter estimate | R-square |
| Point estimate | 0.0048 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[454] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 22 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[455] |
| Parameter estimate | R-square |
| Point estimate | 0.0018 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[455] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 23 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[456] |
| Parameter estimate | R-square |
| Point estimate | 0.01 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[456] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 24 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[457] |
| Parameter estimate | R-square |
| Point estimate | 0 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[457] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 25 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup A

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[458] |
| Parameter estimate | R-square |
| Point estimate | 0.27 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[458] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Statistical analysis title

Statistical Analysis 26

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup A

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[459] |
| Parameter estimate | R-square |
| Point estimate | 0.19 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[459] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Statistical analysis title

Statistical Analysis 27

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup C

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
|-------------------|-------------------------------------------------------------------------------------------------------------|

| | |
|-----------------------------------------|------------------------|
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[460] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[460] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 28 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup C

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[461] |
| Parameter estimate | R-square |
| Point estimate | 0.08 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[461] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 29 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[462] |
| Parameter estimate | R-square |
| Point estimate | 0.45 |

| | |
|---------------------|---------|
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[462] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 30 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup W-135

| | |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[463] |
| Parameter estimate | R-square |
| Point estimate | 0.17 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[463] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

| | |
|-----------------------------------|-------------------------|
| Statistical analysis title | Statistical Analysis 31 |
|-----------------------------------|-------------------------|

Statistical analysis description:

Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup Y

| | |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 1) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 1) |
| Number of subjects included in analysis | 126 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[464] |
| Parameter estimate | R-square |
| Point estimate | 0.37 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[464] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Statistical analysis title | Statistical Analysis 32 |
| Statistical analysis description: Linear regression coefficient between demographic factors, memory B cells one month after primary vaccination and rise in serogroup specific IgG concentration after booster vaccination age for the serogroup Y | |
| Comparison groups | MenACWY-CRM and Routine Vaccines (Group 2) v MenACWY-CRM and Routine Vaccines (Group 3) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 2) v Specific IgG Geometric Mean Conc at 12 Months of Age (Group 3) |
| Number of subjects included in analysis | 146 |
| Analysis specification | Pre-specified |
| Analysis type | other ^[465] |
| Parameter estimate | R-square |
| Point estimate | 0.07 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -9999 |
| upper limit | 9999 |

Notes:

[465] - Regression, Linear

Confidence Intervals were not calculated for the purpose of this study.

Values from Group 2 and 3 were combined for this analysis.

Secondary: 17. Percentage of Subjects Who Reported Injection Site Local Reactions After Each MenACWY-CRM and Routine Infant Vaccinations.

| | |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|
| End point title | 17. Percentage of Subjects Who Reported Injection Site Local Reactions After Each MenACWY-CRM and Routine Infant Vaccinations. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|

End point description:

Safety was assessed as the percentage of subjects who reported injection site local reactions during 7-day follow-up period after each MenACWY-CRM and routine infant vaccination administered as a primary course of vaccination.

| | |
|----------------|-----------|
| End point type | Secondary |
|----------------|-----------|

End point timeframe:

7 days post primary MenACWY-CRM and routine infant vaccination

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 108 | 54 | 54 | |
| Units: Percentage of subjects | | | | |
| Tenderness - MenACWY-CRM (Vaccination 1) | 35 | 19 | 12 | |
| Tenderness - MenACWY-CRM (Vaccination 2) | 21 | 15 | 9 | |
| Erythema - MenACWY-CRM (Vaccination 1) | 101 | 52 | 51 | |

| | | | | |
|-------------------------------------------|-----|----|----|--|
| Erythema - MenACWY-CRM (Vaccination 2) | 104 | 52 | 54 | |
| Induration - MenACWY-CRM (Vaccination 1) | 38 | 20 | 21 | |
| Induration - MenACWY-CRM (Vaccination 2) | 48 | 27 | 29 | |
| Tenderness - DTaP-IPV-Hib (Vaccination 1) | 43 | 23 | 15 | |
| Tenderness - DTaP-IPV-Hib (Vaccination 2) | 33 | 19 | 17 | |
| Tenderness - DTaP-IPV-Hib (Vaccination 3) | 29 | 18 | 13 | |
| Erythema - DTaP-IPV-Hib (Vaccination 1) | 105 | 53 | 49 | |
| Erythema - DTaP-IPV-Hib (Vaccination 2) | 102 | 50 | 54 | |
| Erythema - DTaP-IPV-Hib (Vaccination 3) | 105 | 53 | 53 | |
| Induration - DTaP-IPV-Hib (Vaccination 1) | 53 | 27 | 29 | |
| Induration - DTaP-IPV-Hib (Vaccination 2) | 57 | 35 | 29 | |
| Induration - DTaP-IPV-Hib (Vaccination 3) | 71 | 39 | 38 | |
| Tenderness - PCV (Vaccination 1) | 43 | 21 | 18 | |
| Tenderness - PCV (Vaccination 2) | 29 | 21 | 14 | |
| Erythema - PCV (Vaccination 1) | 103 | 53 | 50 | |
| Erythema - PCV (Vaccination 2) | 105 | 52 | 54 | |
| Induration - PCV (Vaccination 1) | 41 | 24 | 27 | |
| Induration - PCV (Vaccination 2) | 57 | 33 | 35 | |

Statistical analyses

No statistical analyses for this end point

Secondary: 18. Percentage of Subjects Who Reported Solicited Systemic Reactions After MenACWY-CRM and Routine Infants Primary Vaccinations

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| End point title | 18. Percentage of Subjects Who Reported Solicited Systemic Reactions After MenACWY-CRM and Routine Infants Primary Vaccinations |
| End point description: | |
| Safety was assessed as the percentage of subjects who reported systemic reactions during 7-day follow-up period after MenACWY-CRM (2 and 4 months) and routine infant primary vaccinations (2, 3 and 4 months). | |
| End point type | Secondary |
| End point timeframe: | |
| 7 days post vaccination at 2, 3, and 4 months of age | |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|-------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 108 | 54 | 54 | |
| Units: Percentage of subjects | | | | |
| Change in eat. habits (N=106,54,54)- Vaccination 1 | 20 | 11 | 16 | |
| Change in eat. habits (N=107,53,54)- Vaccination 2 | 19 | 8 | 9 | |
| Change in eat. habits (N=106,54,53)- Vaccination 3 | 20 | 14 | 16 | |
| Sleepiness (Vaccination 1) | 63 | 29 | 32 | |
| Sleepiness (Vaccination 2) | 42 | 18 | 28 | |
| Sleepiness (Vaccination 3) | 38 | 18 | 20 | |
| Vomiting (Vaccination 1) | 26 | 6 | 9 | |
| Vomiting (Vaccination 2) | 15 | 7 | 3 | |
| Vomiting (Vaccination 3) | 16 | 6 | 8 | |
| Diarrhea (Vaccination 1) | 22 | 11 | 8 | |
| Diarrhea (Vaccination 2) | 18 | 5 | 7 | |
| Diarrhea (Vaccination 3) | 10 | 9 | 7 | |
| Irritability (Vaccination 1) | 71 | 37 | 33 | |
| Irritability (Vaccination 2) | 51 | 41 | 27 | |
| Irritability (Vaccination 3) | 55 | 30 | 31 | |
| Unusual crying (Vaccination 1) | 29 | 11 | 8 | |
| Unusual crying (Vaccination 2) | 18 | 15 | 10 | |
| Unusual crying (Vaccination 3) | 23 | 8 | 14 | |
| Fever (≥ 38 °C) - Vaccination 1 | 4 | 2 | 0 | |
| Fever (≥ 38 °C) - Vaccination 2 | 6 | 3 | 0 | |
| Fever (≥ 38 °C) - Vaccination 3 | 6 | 5 | 2 | |
| Analg. Antipyr. Med. Used (Vaccination 1) | 43 | 14 | 15 | |
| Analg. Antipyr. Med. Used (Vaccination 2) | 28 | 24 | 21 | |
| Analg. Antipyr. Med. Used (Vaccination 3) | 44 | 18 | 30 | |

Statistical analyses

No statistical analyses for this end point

Secondary: 19. Percentage of Subjects Who Reported Injection Site Local Reactions After MenACWY-CRM and PCV Vaccinations at 12 Months of Age

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| End point title | 19. Percentage of Subjects Who Reported Injection Site Local Reactions After MenACWY-CRM and PCV Vaccinations at 12 Months of Age |
| End point description: | |
| Safety was assessed as the percentage of subjects who reported injection site local reactions during 7-day follow-up period after MenACWY-CRM and PCV vaccinations at 12 months of age. | |
| End point type | Secondary |
| End point timeframe: | |
| 7 days post 12 month vaccination | |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|-------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 103 | 50 | 52 | |
| Units: Percentage of subjects | | | | |
| Tenderness - MenACWY-CRM | 29 | 14 | 10 | |
| Erythema - MenACWY-CRM | 102 | 46 | 49 | |
| Induration - MenACWY-CRM | 54 | 25 | 29 | |
| Tenderness - PCV | 15 | 15 | 11 | |
| Erythema - PCV | 43 | 43 | 49 | |
| Induration - PCV | 24 | 24 | 33 | |

Statistical analyses

No statistical analyses for this end point

Secondary: 20. Percentage of Subjects Who Reported Solicited Systemic Reactions After MenACWY-CRM and PCV Vaccination at 12 Months of Age

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| End point title | 20. Percentage of Subjects Who Reported Solicited Systemic Reactions After MenACWY-CRM and PCV Vaccination at 12 Months of Age |
| End point description: | |
| Safety was assessed as the percentage of subjects who reported systemic reactions during 7-day follow-up period after MenACWY-CRM and PCV vaccination at 12 months of age. | |
| End point type | Secondary |
| End point timeframe: | |
| 7 days post 12 months vaccination | |

| End point values | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) | |
|---------------------------------------|-----------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------|--|
| Subject group type | Reporting group | Reporting group | Reporting group | |
| Number of subjects analysed | 103 | 50 | 52 | |
| Units: Percentage of subjects | | | | |
| Change in eating habits (N=97,48,52) | 22 | 11 | 16 | |
| Sleepiness | 21 | 12 | 13 | |
| Vomiting | 3 | 5 | 6 | |
| Diarrhea | 14 | 8 | 8 | |
| Irritability | 26 | 23 | 21 | |
| Unusual crying | 12 | 10 | 8 | |
| Fever ($\geq 38^{\circ}\text{C}$) | 8 | 3 | 3 | |
| Analgesics Antipyretics Medicine Used | 33 | 22 | 24 | |

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

All the serious adverse events were collected throughout the study (day 1 to 18 months).

Adverse event reporting additional description:

Other adverse events included solicited local and systemic reactions and non-serious unsolicited adverse events.

Solicited local and systemic reactions were collected from day 1 to day 7 after each vaccination.

Non-serious unsolicited adverse events were collected from 7 days after each vaccination to the next visit.

| | |
|-----------------|----------------|
| Assessment type | Non-systematic |
|-----------------|----------------|

Dictionary used

| | |
|--------------------|--------|
| Dictionary name | MedDRA |
| Dictionary version | 12.1 |

Reporting groups

| | |
|-----------------------|--------------------------------------------|
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 1) |
|-----------------------|--------------------------------------------|

Reporting group description:

Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 13 months), and 1 dose each of MMR and Hib (booster) at 13 months.

| | |
|-----------------------|--------------------------------------------|
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 2) |
|-----------------------|--------------------------------------------|

Reporting group description:

Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months. This group had an additional blood draw at the time of enrollment.

| | |
|-----------------------|--------------------------------------------|
| Reporting group title | MenACWY-CRM and Routine Vaccines (Group 3) |
|-----------------------|--------------------------------------------|

Reporting group description:

Infants received 2 doses of MenACWY-CRM (at 2 and 4 months) as a primary course of vaccination and third dose (at 12 months) as a booster. Infants also received routine vaccines - 3 doses of DTaP-Hib-IPV (at 2, 3, and 4 months), 3 doses of PCV (at 2, 4, and 12 months), and 1 dose each of MMR and Hib (booster) at 13 months of age. This group had an additional blood draw at 6-7 days after third dose of MenACWY-CRM.

| Serious adverse events | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) |
|---------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Total subjects affected by serious adverse events | | | |
| subjects affected / exposed | 7 / 108 (6.48%) | 4 / 54 (7.41%) | 6 / 54 (11.11%) |
| number of deaths (all causes) | 0 | 0 | 0 |
| number of deaths resulting from adverse events | 0 | 0 | 0 |
| Injury, poisoning and procedural complications | | | |
| Head injury | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 0 / 54 (0.00%) | 1 / 54 (1.85%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 1 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |

| | | | |
|------------------------------------------------------|-----------------|----------------|----------------|
| Nervous system disorders | | | |
| Febrile convulsion | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 1 / 54 (1.85%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 1 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| General disorders and administration site conditions | | | |
| Pyrexia | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 0 / 54 (0.00%) | 1 / 54 (1.85%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 1 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Gastrointestinal disorders | | | |
| Eosinophilic colitis | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 0 / 54 (0.00%) | 1 / 54 (1.85%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 1 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Gastroesophageal Reflux Disease | | | |
| subjects affected / exposed | 1 / 108 (0.93%) | 0 / 54 (0.00%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 1 | 0 / 0 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Respiratory, thoracic and mediastinal disorders | | | |
| Wheezing | | | |
| subjects affected / exposed | 1 / 108 (0.93%) | 0 / 54 (0.00%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 1 | 0 / 0 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Infections and infestations | | | |
| Bronchiolitis | | | |
| subjects affected / exposed | 2 / 108 (1.85%) | 1 / 54 (1.85%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 3 | 0 / 1 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Cellulitis | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 1 / 54 (1.85%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 1 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Gastroenteritis | | | |

| | | | |
|-------------------------------------------------|-----------------|----------------|----------------|
| subjects affected / exposed | 0 / 108 (0.00%) | 0 / 54 (0.00%) | 2 / 54 (3.70%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 2 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Lower respiratory tract infection | | | |
| subjects affected / exposed | 1 / 108 (0.93%) | 1 / 54 (1.85%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 1 | 0 / 1 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Viral infection | | | |
| subjects affected / exposed | 3 / 108 (2.78%) | 0 / 54 (0.00%) | 2 / 54 (3.70%) |
| occurrences causally related to treatment / all | 0 / 3 | 0 / 0 | 0 / 2 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |
| Viral upper respiratory tract infection | | | |
| subjects affected / exposed | 0 / 108 (0.00%) | 1 / 54 (1.85%) | 0 / 54 (0.00%) |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 1 | 0 / 0 |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | 0 / 0 |

Frequency threshold for reporting non-serious adverse events: 5 %

| Non-serious adverse events | MenACWY-CRM and Routine Vaccines (Group 1) | MenACWY-CRM and Routine Vaccines (Group 2) | MenACWY-CRM and Routine Vaccines (Group 3) |
|-------------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Total subjects affected by non-serious adverse events | | | |
| subjects affected / exposed | 108 / 108 (100.00%) | 54 / 54 (100.00%) | 54 / 54 (100.00%) |
| Nervous system disorders | | | |
| Somnolence | | | |
| subjects affected / exposed | 81 / 108 (75.00%) | 40 / 54 (74.07%) | 42 / 54 (77.78%) |
| occurrences (all) | 184 | 82 | 108 |
| General disorders and administration site conditions | | | |
| Injection site erythema | | | |
| alternative dictionary used: MedDRA 17.1 | | | |
| subjects affected / exposed | 108 / 108 (100.00%) | 53 / 54 (98.15%) | 54 / 54 (100.00%) |
| occurrences (all) | 859 | 475 | 486 |
| Injection site induration | | | |
| alternative dictionary used: MedDRA 17.1 | | | |

| | | | |
|-------------------------------------------------|-------------------|------------------|------------------|
| subjects affected / exposed | 91 / 108 (84.26%) | 50 / 54 (92.59%) | 50 / 54 (92.59%) |
| occurrences (all) | 437 | 271 | 283 |
| Injection site pain | | | |
| alternative dictionary used: MedDRA 17.1 | | | |
| subjects affected / exposed | 74 / 108 (68.52%) | 42 / 54 (77.78%) | 38 / 54 (70.37%) |
| occurrences (all) | 265 | 172 | 121 |
| Pyrexia | | | |
| subjects affected / exposed | 25 / 108 (23.15%) | 12 / 54 (22.22%) | 9 / 54 (16.67%) |
| occurrences (all) | 36 | 19 | 10 |
| Crying | | | |
| alternative dictionary used: MedDRA 17.1 | | | |
| subjects affected / exposed | 49 / 108 (45.37%) | 29 / 54 (53.70%) | 29 / 54 (53.70%) |
| occurrences (all) | 98 | 57 | 47 |
| Gastrointestinal disorders | | | |
| Diarrhoea | | | |
| subjects affected / exposed | 45 / 108 (41.67%) | 23 / 54 (42.59%) | 19 / 54 (35.19%) |
| occurrences (all) | 77 | 43 | 40 |
| Gastrooesophageal reflux disease | | | |
| subjects affected / exposed | 3 / 108 (2.78%) | 4 / 54 (7.41%) | 2 / 54 (3.70%) |
| occurrences (all) | 3 | 4 | 2 |
| Teething | | | |
| subjects affected / exposed | 14 / 108 (12.96%) | 8 / 54 (14.81%) | 5 / 54 (9.26%) |
| occurrences (all) | 15 | 10 | 7 |
| Vomiting | | | |
| subjects affected / exposed | 43 / 108 (39.81%) | 20 / 54 (37.04%) | 19 / 54 (35.19%) |
| occurrences (all) | 75 | 31 | 34 |
| Respiratory, thoracic and mediastinal disorders | | | |
| Cough | | | |
| subjects affected / exposed | 14 / 108 (12.96%) | 6 / 54 (11.11%) | 3 / 54 (5.56%) |
| occurrences (all) | 15 | 9 | 3 |
| Skin and subcutaneous tissue disorders | | | |
| Eczema | | | |
| subjects affected / exposed | 7 / 108 (6.48%) | 4 / 54 (7.41%) | 4 / 54 (7.41%) |
| occurrences (all) | 8 | 4 | 4 |
| Rash | | | |

| | | | |
|--------------------------------------------------|------------------------|---------------------|---------------------|
| subjects affected / exposed occurrences (all) | 10 / 108 (9.26%) 10 | 4 / 54 (7.41%) 4 | 1 / 54 (1.85%) 2 |
| Psychiatric disorders | | | |
| Irritability | | | |
| alternative dictionary used: MedDRA 17.1 | | | |
| subjects affected / exposed | 93 / 108 (86.11%) | 53 / 54 (98.15%) | 47 / 54 (87.04%) |
| occurrences (all) | 248 | 163 | 145 |
| Eating disorder | | | |
| subjects affected / exposed | 55 / 108 (50.93%) | 30 / 54 (55.56%) | 31 / 54 (57.41%) |
| occurrences (all) | 100 | 52 | 80 |
| Infections and infestations | | | |
| Conjunctivitis | | | |
| alternative dictionary used: MedDRA 17.1 | | | |
| subjects affected / exposed | 7 / 108 (6.48%) | 3 / 54 (5.56%) | 5 / 54 (9.26%) |
| occurrences (all) | 9 | 3 | 6 |
| Ear infection | | | |
| subjects affected / exposed | 7 / 108 (6.48%) | 5 / 54 (9.26%) | 1 / 54 (1.85%) |
| occurrences (all) | 7 | 5 | 1 |
| Lower respiratory tract infection | | | |
| subjects affected / exposed | 10 / 108 (9.26%) | 11 / 54 (20.37%) | 5 / 54 (9.26%) |
| occurrences (all) | 12 | 13 | 5 |
| Nasopharyngitis | | | |
| subjects affected / exposed | 1 / 108 (0.93%) | 3 / 54 (5.56%) | 0 / 54 (0.00%) |
| occurrences (all) | 1 | 4 | 0 |
| Rhinitis | | | |
| subjects affected / exposed | 21 / 108 (19.44%) | 15 / 54 (27.78%) | 13 / 54 (24.07%) |
| occurrences (all) | 26 | 20 | 15 |
| Upper respiratory tract infection | | | |
| subjects affected / exposed | 7 / 108 (6.48%) | 2 / 54 (3.70%) | 6 / 54 (11.11%) |
| occurrences (all) | 7 | 2 | 6 |

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

| Date | Amendment |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 June 2008 | Amendment No. 1: The main reason for this amendment was to insert a new secondary objective due to the addition of an optional genetic analysis. Moreover also the Sponsor Study personnel have been updated. Finally some changes have been implemented throughout the protocol for consistency and to better clarify the text. |

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported

Online references

<http://www.ncbi.nlm.nih.gov/pubmed/23538521>

<http://www.ncbi.nlm.nih.gov/pubmed/23566945>