



## Clinical trial results:

**A Phase 2, Open-label, Controlled, Multi-Center Extension Study to Evaluate 4-Year Antibody Persistence and Booster Response Following MenABCWY Vaccination in Healthy Adolescents and Young Adults who Previously Participated in Studies V102\_02 (NCT01210885) and V102\_02E1 (NCT01367158).**

### Summary

|                          |                  |
|--------------------------|------------------|
| EudraCT number           | 2016-004420-29   |
| Trial protocol           | Outside EU/EEA   |
| Global end of trial date | 10 December 2015 |

### Results information

|                                |               |
|--------------------------------|---------------|
| Result version number          | v1            |
| This version publication date  | 16 March 2017 |
| First version publication date | 16 March 2017 |

### Trial information

#### Trial identification

|                       |        |
|-----------------------|--------|
| Sponsor protocol code | 205213 |
|-----------------------|--------|

#### Additional study identifiers

|                                    |             |
|------------------------------------|-------------|
| ISRCTN number                      | -           |
| ClinicalTrials.gov id (NCT number) | NCT02451514 |
| WHO universal trial number (UTN)   | -           |

Notes:

### Sponsors

|                              |   |
|------------------------------|---|
| Sponsor organisation name    | GlaxoSmithKline Biologicals   |
| Sponsor organisation address | Rue de l'Institut 89, Rixensart, Belgium, B-1330  |
| Public contact               | Clinical Trials Call Center, GlaxoSmithKline Biologicals, 44 2089904466, GSKClinicalSupportHD@gsk.com |
| Scientific contact           | Clinical Trials Call Center, GlaxoSmithKline Biologicals, 44 2089904466, GSKClinicalSupportHD@gsk.com |

Notes:

### Paediatric regulatory details

|  |     |
|--|-----|
| Is trial part of an agreed paediatric investigation plan (PIP)       | No  |
| 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                       | 07 November 2016 |
| Is this the analysis of the primary completion data? | Yes              |
| Primary completion date                              | 14 November 2015 |
| Global end of trial reached?                         | Yes              |
| Global end of trial date                             | 10 December 2015 |
| Was the trial ended prematurely?                     | No               |

Notes:

## General information about the trial

Main objective of the trial:

- To assess the antibody persistence against N. meningitidis serogroups A, C, W and Y and serogroup B test strains in subjects who previously received MenABCWY+OMV or MenACWY approximately 4 years earlier, as measured by the percentage of subjects with hSBA titers  $\geq$  lower limit quantitation (LLQ) and other thresholds, hSBA Geometric Mean Titers (GMTs) and geometric mean ratios (GMRs).
- To evaluate the immune response against N. meningitidis serogroups A, C, W and Y and serogroup B test strains 30 days after a single dose of MenABCWY+OMV in previously vaccinated subjects, and in vaccine-naïve subjects (VNS) of similar age, as measured by the percentage of subjects with hSBA titers  $\geq$  LLQ and other thresholds, hSBA GMTs and GMRs.

Protection of trial subjects:

The study was conducted in compliance with the protocol, Good Clinical Practices (GCPs) and applicable regulatory requirement(s). This clinical study was designed, implemented and reported in accordance with the ICH Harmonized Tripartite Guidelines for Good Clinical Practice, with applicable local regulations, Novartis codes on protection of human rights, and with the ethical principles laid down in the Declaration of Helsinki (European Council 2001, US Code of Federal Regulations, ICH 1997).

Background therapy: -

Evidence for comparator: -

|   |              |
|---|--------------|
| Actual start date of recruitment                          | 30 June 2015 |
| 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 | Chile: 13    |
| Country: Number of subjects enrolled | Panama: 88   |
| Country: Number of subjects enrolled | Colombia: 28 |
| Worldwide total number of subjects   | 129          |
| EEA total number of subjects         | 0            |

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          | 0 |

|                           |    |
|---------------------------|----|
| months)                   |    |
| Children (2-11 years)     | 0  |
| Adolescents (12-17 years) | 45 |
| Adults (18-64 years)      | 84 |
| From 65 to 84 years       | 0  |
| 85 years and over         | 0  |

## Subject disposition

### Recruitment

Recruitment details:

Subjects were recruited from 5 sites in Panama, 3 sites in Colombia and 1 site in Chile.

### Pre-assignment

Screening details:

Healthy adolescents and young adults, who previously participated in studies V102\_02 (NCT01210885) and V102\_02E1 (NCT01367158) and who received a 2-dose series of MenABCWY+OMV or 1 dose of Menveo (MenACWY), were included in the present study, along with vaccine-naïve subjects of similar age.

### Period 1

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

Blinding implementation details:

The study was an open-label study. Therefore, no blinding procedures were utilized.

### Arms

|                              |                    |
|------------------------------|--------------------|
| Are arms mutually exclusive? | Yes                |
| <b>Arm title</b>             | MenABCWY+OMV Group |

Arm description:

Subjects who received 2 doses of MenABCWY+OMV vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received a booster dose of MenABCWY+OMV vaccine in the current study at Day 1.

|  |   |
|--|---|
| Arm type                               | Experimental  |
| Investigational medicinal product name | Meningococcal (groups A, C, W, Y-135) Oligosaccharide Diphtheria CRM197 Conjugate combined with Meningococcal (group B) Multi-Component Recombinant Vaccine |
| Investigational medicinal product code |   |
| Other name                             |   |
| Pharmaceutical forms                   | Powder and suspension for suspension for injection  |
| Routes of administration               | Intramuscular use   |

Dosage and administration details:

1 dose (0.5 mL)

|                  |               |
|------------------|---------------|
| <b>Arm title</b> | MenACWY Group |
|------------------|---------------|

Arm description:

Subjects who received MenACWY vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received 2 doses of MenABCWY+OMV vaccine, one month apart (Day 1 and Day 31), in the current study.

|  |   |
|--|---|
| Arm type                               | Experimental  |
| Investigational medicinal product name | Meningococcal (groups A, C, W, Y-135) Oligosaccharide Diphtheria CRM197 Conjugate combined with Meningococcal (group B) Multi-Component Recombinant Vaccine |
| Investigational medicinal product code |   |
| Other name                             |   |
| Pharmaceutical forms                   | Powder and suspension for suspension for injection  |
| Routes of administration               | Intramuscular use   |

Dosage and administration details:

2 doses (0.5 mL each), 1 month apart

|                  |             |
|------------------|-------------|
| <b>Arm title</b> | Naive Group |
|------------------|-------------|

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**Arm description:**

Subjects similar in age to subjects in the MenABCWY+OMV and MenACWY groups, who had not previously received any meningococcal vaccine and who received 2 doses of MenABCWY+OMV vaccine, 1 month apart (Day 1 and Day 31), in the current study.

|  |   |
|--|---|
| Arm type                               | Experimental  |
| Investigational medicinal product name | Meningococcal (groups A, C, W, Y-135) Oligosaccharide Diphtheria CRM197 Conjugate combined with Meningococcal (group B) Multi-Component Recombinant Vaccine |
| Investigational medicinal product code |   |
| Other name                             |   |
| Pharmaceutical forms                   | Powder and suspension for suspension for injection  |
| Routes of administration               | Intramuscular use   |

**Dosage and administration details:**

2 doses (0.5 mL each), 1 month apart

| <b>Number of subjects in period 1</b> | MenABCWY+OMV Group | MenACWY Group | Naive Group |
|---------------------------------------|--------------------|---------------|-------------|
| Started                               | 33                 | 46            | 50          |
| Completed                             | 33                 | 46            | 50          |

## Baseline characteristics

### Reporting groups

|                       |                    |
|-----------------------|--------------------|
| Reporting group title | MenABCWY+OMV Group |
|-----------------------|--------------------|

Reporting group description:

Subjects who received 2 doses of MenABCWY+OMV vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received a booster dose of MenABCWY+OMV vaccine in the current study at Day 1.

|                       |               |
|-----------------------|---------------|
| Reporting group title | MenACWY Group |
|-----------------------|---------------|

Reporting group description:

Subjects who received MenACWY vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received 2 doses of MenABCWY+OMV vaccine, one month apart (Day 1 and Day 31), in the current study.

|                       |             |
|-----------------------|-------------|
| Reporting group title | Naive Group |
|-----------------------|-------------|

Reporting group description:

Subjects similar in age to subjects in the MenABCWY+OMV and MenACWY groups, who had not previously received any meningococcal vaccine and who received 2 doses of MenABCWY+OMV vaccine, 1 month apart (Day 1 and Day 31), in the current study.

| Reporting group values                             | MenABCWY+OMV Group | MenACWY Group | Naive Group |
|--|--------------------|---------------|-------------|
| Number of subjects                                 | 33                 | 46            | 50          |
| Age categorical<br>Units: Subjects                 |                    |               |             |
| In utero   | 0                  | 0             | 0           |
| Preterm newborn infants (gestational age < 37 wks) | 0                  | 0             | 0           |
| Newborns (0-27 days)                               | 0                  | 0             | 0           |
| Infants and toddlers (28 days-23 months)           | 0                  | 0             | 0           |
| Children (2-11 years)                              | 0                  | 0             | 0           |
| Adolescents (12-17 years)                          | 12                 | 14            | 19          |
| Adults (18-64 years)                               | 21                 | 32            | 31          |
| From 65-84 years                                   | 0                  | 0             | 0           |
| 85 years and over                                  | 0                  | 0             | 0           |
| Age continuous<br>Units: years                     |                    |               |             |
| arithmetic mean                                    | 18.61              | 18.72         | 17.96       |
| standard deviation                                 | ± 2.207            | ± 1.87        | ± 2.04      |
| Gender categorical<br>Units: Subjects              |                    |               |             |
| Female   | 22                 | 27            | 25          |
| Male   | 11                 | 19            | 25          |

| Reporting group values                             | Total |  |  |
|--|-------|--|--|
| Number of subjects                                 | 129   |  |  |
| Age categorical<br>Units: Subjects                 |       |  |  |
| In utero   | 0     |  |  |
| Preterm newborn infants (gestational age < 37 wks) | 0     |  |  |
| Newborns (0-27 days)                               | 0     |  |  |

|   |    |  |  |
|---|----|--|--|
| Infants and toddlers (28 days-23 months)                                | 0  |  |  |
| Children (2-11 years)   | 0  |  |  |
| Adolescents (12-17 years)   | 45 |  |  |
| Adults (18-64 years)  | 84 |  |  |
| From 65-84 years  | 0  |  |  |
| 85 years and over   | 0  |  |  |
| Age continuous<br>Units: years<br>arithmetic mean<br>standard deviation | -  |  |  |
| Gender categorical<br>Units: Subjects                                   |    |  |  |
| Female  | 74 |  |  |
| Male  | 55 |  |  |

## End points

### End points reporting groups

|   |                    |
|---|--------------------|
| Reporting group title   | MenABCWY+OMV Group |
| Reporting group description:<br>Subjects who received 2 doses of MenABCWY+OMV vaccine in the parent study V102_02 (NCT01210885) and received no subsequent meningococcal vaccines, received a booster dose of MenABCWY+OMV vaccine in the current study at Day 1.               |                    |
| Reporting group title   | MenACWY Group      |
| Reporting group description:<br>Subjects who received MenACWY vaccine in the parent study V102_02 (NCT01210885) and received no subsequent meningococcal vaccines, received 2 doses of MenABCWY+OMV vaccine, one month apart (Day 1 and Day 31), in the current study.          |                    |
| Reporting group title   | Naive Group        |
| Reporting group description:<br>Subjects similar in age to subjects in the MenABCWY+OMV and MenACWY groups, who had not previously received any meningococcal vaccine and who received 2 doses of MenABCWY+OMV vaccine, 1 month apart (Day 1 and Day 31), in the current study. |                    |

### Primary: Percentage of subjects with hSBA $\geq$ LLQ against N. meningitidis serogroups A, C, W and Y and serogroup B test strains

|                 |  |
|-----------------|--|
| End point title | Percentage of subjects with hSBA $\geq$ LLQ against N. meningitidis serogroups A, C, W and Y and serogroup B test strains <sup>[1]</sup> |
|-----------------|--|

#### End point description:

Antibody levels against N. meningitidis serogroups A, C, W and Y and serogroup B test strains (H44/76, 5/99, M14459, M07-024184, M01-0240364, NZ98/254) in subjects who previously received MenABCWY+OMV or MenACWY approximately 4 years earlier, and in Naïve subjects, as measured by the percentages of subjects with hSBA (human serum bactericidal assay)  $\geq$  LLQ (lower limit of quantitation). The data were reported based on the FAS (Full Analysis Set) immunogenicity persistence population set, which included all subjects in the Enrolled population who provided at least one evaluable serum sample at baseline (Visit 1 in V102\_02E2) and whose assay results were available for at least one strain.

|   |         |
|---|---------|
| End point type                                      | Primary |
| End point timeframe:<br>Day 1 (4 years persistence) |         |

#### Notes:

[1] - No statistical analyses have been specified for this primary end point. It is expected there is at least one statistical analysis for each primary end point.

Justification: The immunogenicity results will be updated when they become available.

| End point values                 | MenABCWY+OMV Group | MenACWY Group    | Naive Group      |  |
|----------------------------------|--------------------|------------------|------------------|--|
| Subject group type               | Reporting group    | Reporting group  | Reporting group  |  |
| Number of subjects analysed      | 0 <sup>[2]</sup>   | 0 <sup>[3]</sup> | 0 <sup>[4]</sup> |  |
| Units: Percentage                |                    |                  |                  |  |
| number (confidence interval 95%) |                    |                  |                  |  |
| Serogroup A                      | ( to )             | ( to )           | ( to )           |  |
| Serogroup C                      | ( to )             | ( to )           | ( to )           |  |
| Serogroup W                      | ( to )             | ( to )           | ( to )           |  |
| Serogroup Y                      | ( to )             | ( to )           | ( to )           |  |
| H44/76                           | ( to )             | ( to )           | ( to )           |  |
| 5/99                             | ( to )             | ( to )           | ( to )           |  |



|             |        |        |        |  |
|-------------|--------|--------|--------|--|
| M14459      | ( to ) | ( to ) | ( to ) |  |
| M07-024184  | ( to ) | ( to ) | ( to ) |  |
| M01-0240364 | ( to ) | ( to ) | ( to ) |  |
| NZ98/254    | ( to ) | ( to ) | ( to ) |  |

Notes:

[2] - The immunogenicity results will be updated when they become available.

[3] - The immunogenicity results will be updated when they become available.

[4] - The immunogenicity results will be updated when they become available.

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects reporting any unsolicited and solicited adverse events (AEs) within 30 min after each vaccination

|                 |  |
|-----------------|--|
| End point title | Number of subjects reporting any unsolicited and solicited adverse events (AEs) within 30 min after each vaccination |
|-----------------|--|

End point description:

Any solicited and unsolicited AEs reported within 30 minutes after each vaccination. Assessed solicited local symptoms were: Erythema, Swelling and Induration. Any = occurrence of the symptom spreading beyond 25 millimeters (mm) of injection site. Assessed solicited general symptoms were: Arthralgia, Chills, Fatigue, Headache, Loss of Appetite, Myalgia, Nausea and Fever (body temperature  $\geq 38^{\circ}\text{C}$ ). Other solicited data included: Prevention of Pain and/or Fever and Treatment of Pain and/or Fever. Any = occurrence of the symptom regardless of intensity grade.

Note: There were no unsolicited AEs reported within 30 minutes after vaccination.

The data were reported based on the Solicited Safety Set, which included all subjects in the FAS Immunogenicity population who provided post-vaccination reactogenicity data.

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

End point timeframe:

Within 30 min after each vaccination

| End point values                             | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|--|------------------------|------------------|-----------------|--|
| Subject group type                           | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed                  | 33                     | 46               | 50              |  |
| Units: Subjects                              |                        |                  |                 |  |
| Erythema (1st vacc.) (N=33;46;50)            | 0                      | 1                | 0               |  |
| Erythema (2nd vacc.) (N=0;44;50)             | 0                      | 1                | 0               |  |
| Induration (1st vacc.) (N=33;46;50)          | 0                      | 0                | 0               |  |
| Induration (2nd vacc.) (N=0;44;50)           | 0                      | 0                | 0               |  |
| Pain (1st vacc.) (N=33;46;50)                | 4                      | 8                | 6               |  |
| Pain (2nd vacc.) (N=0;44;50)                 | 0                      | 3                | 4               |  |
| Arthralgia (1st vacc.) (N=33;46;50)          | 0                      | 0                | 0               |  |
| Arthralgia (2nd vacc.) (N=0;44;50)           | 0                      | 0                | 0               |  |
| Chills (1st vacc.) (N=33;46;50)              | 0                      | 0                | 0               |  |
| Chills (2nd vacc.) (N=0;44;50)               | 0                      | 0                | 0               |  |
| Fatigue (1st vacc.) (N=33;46;50)             | 0                      | 0                | 0               |  |
| Fatigue (2nd vacc.) (N=0;44;50)              | 0                      | 0                | 1               |  |
| Headache (1st vacc.) (N=33;46;50)            | 1                      | 0                | 0               |  |
| Headache (2nd vacc.) (N=0;44;50)             | 0                      | 0                | 1               |  |
| Loss of Appetite (1st vacc.)<br>(N=33;46;50) | 0                      | 0                | 0               |  |

|  |   |   |   |  |
|--|---|---|---|--|
| Loss of Appetite (2nd vacc.)<br>(N=0;44;50)          | 0 | 0 | 0 |  |
| Myalgia (1st vacc.) (N=33;46;50)                     | 0 | 0 | 0 |  |
| Myalgia (2nd vacc.) (N=0;44;50)                      | 0 | 0 | 0 |  |
| Nausea (1st vacc.) (N=33;46;50)                      | 0 | 0 | 0 |  |
| Nausea (2nd vacc.) (N=0;44;50)                       | 0 | 0 | 0 |  |
| Fever (1st vacc.) (N=33;46;50)                       | 0 | 0 | 0 |  |
| Fever (2nd vacc.) (N=0;44;50)                        | 0 | 0 | 0 |  |
| Prevention of Pain/Fever (1st vacc.)<br>(N=33;45;50) | 0 | 0 | 0 |  |
| Prevention of Pain/Fever (2nd vacc.)<br>(N=0;44;50)  | 0 | 0 | 1 |  |
| Treatment of Pain/Fever (1st vacc.)<br>(N=33;45;50)  | 0 | 0 | 0 |  |
| Treatment of Pain/Fever (2nd vacc.)<br>(N=0;44;50)   | 0 | 0 | 2 |  |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Number of subjects with any solicited local symptoms

|                 |  |
|-----------------|--|
| End point title | Number of subjects with any solicited local symptoms |
|-----------------|--|

End point description:

Assessed solicited local symptoms were Erythema, Induration and Pain. Any = occurrence of the symptom spreading beyond 25 millimeters (mm) of injection site.

The data were reported based on the Solicited Safety Set, which included all subjects in the FAS Immunogenicity population who provided post-vaccination reactogenicity data.

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

End point timeframe:

From Day 1 (6 h) to Day 7 after each vaccination

| End point values                       | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|--|------------------------|------------------|-----------------|--|
| Subject group type                     | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed            | 33                     | 46               | 50              |  |
| Units: Subjects                        |                        |                  |                 |  |
| Any local AEs (1st vacc.) (N=33;46;50) | 31                     | 41               | 47              |  |
| Erythema (1st vacc.) (N=33;45;50)      | 8                      | 7                | 8               |  |
| Induration (1st vacc.) (N=33;46;50)    | 12                     | 7                | 13              |  |
| Pain (1st vacc.) (N=33;46;50)          | 31                     | 41               | 47              |  |
| Any local AEs (2nd vacc.) (N=0;45;50)  | 0                      | 35               | 41              |  |
| Erythema (2nd vacc.) (N=0;45;49)       | 0                      | 6                | 7               |  |
| Induration (2nd vacc.) (N=0;45;50)     | 0                      | 9                | 8               |  |
| Pain (2nd vacc.) (N=0;45;50)           | 0                      | 34               | 41              |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with solicited systemic symptoms and other solicited data

|                 |  |
|-----------------|--|
| End point title | Number of subjects with solicited systemic symptoms and other solicited data |
|-----------------|--|

End point description:

Assessed solicited systemic symptoms were Arthralgia, Chills, Fatigue, Headache, Loss of Appetite, Myalgia, Nausea and Fever (body temperature  $\geq 38^{\circ}\text{C}$ ). Other solicited data included: Prevention of pain and/or fever and Treatment of pain and/or fever. Any = occurrence of the symptom regardless of intensity grade.

The data were reported based on the Solicited Safety Set, which included all subjects in the FAS Immunogenicity population who provided post-vaccination reactogenicity data.

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

End point timeframe:

From Day 1 (6 h) to Day 7 after each vaccination

| End point values                                     | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|--|------------------------|------------------|-----------------|--|
| Subject group type                                   | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed                          | 33                     | 46               | 50              |  |
| Units: Subjects                                      |                        |                  |                 |  |
| Any systemic AEs (1st vacc.)<br>(N=33;46;50)         | 24                     | 35               | 37              |  |
| Arthralgia (1st vacc.) (N=33;46;50)                  | 8                      | 8                | 15              |  |
| Chills (1st vacc.) (N=33;46;50)                      | 5                      | 11               | 11              |  |
| Fatigue (1st vacc.) (N=33;45;50)                     | 14                     | 19               | 24              |  |
| Headache (1st vacc.) (N=33;46;50)                    | 19                     | 20               | 23              |  |
| Loss of Appetite (1st vacc.)<br>(N=33;45;50)         | 5                      | 9                | 9               |  |
| Myalgia (1st vacc.) (N=33;46;50)                     | 18                     | 22               | 23              |  |
| Nausea (1st vacc.) (N=33;46;50)                      | 4                      | 10               | 13              |  |
| Fever (1st vacc.) (N=33;46;50)                       | 0                      | 4                | 8               |  |
| Prevention of Pain/Fever (1st vacc.)<br>(N=33;44;50) | 0                      | 1                | 1               |  |
| Treatment of Pain/Fever (1st vacc.)<br>(N=33;44;50)  | 8                      | 7                | 11              |  |
| Any systemic AEs (2nd vacc.)<br>(N=0;45;50)          | 0                      | 22               | 28              |  |
| Arthralgia (2nd vacc.) (N=0;45;50)                   | 0                      | 4                | 7               |  |
| Chills (2nd vacc.) (N=0;45;50)                       | 0                      | 5                | 9               |  |
| Fatigue (2nd vacc.) (N=0;44;50)                      | 0                      | 10               | 12              |  |
| Headache (2nd vacc.) (N=0;44;50)                     | 0                      | 11               | 18              |  |
| Loss of Appetite (2nd vacc.)<br>(N=0;45;50)          | 0                      | 3                | 5               |  |
| Myalgia (2nd vacc.) (N=0;45;50)                      | 0                      | 12               | 14              |  |
| Nausea (2nd vacc.) (N=0;45;50)                       | 0                      | 4                | 4               |  |
| Fever (2nd vacc.) (N=0;45;50)                        | 0                      | 4                | 2               |  |
| Prevention of Pain/Fever (2nd vacc.)<br>(N=0;45;50)  | 0                      | 1                | 3               |  |
| Treatment of Pain/Fever (2nd vacc.)<br>(N=0;45;50)   | 0                      | 2                | 6               |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with unsolicited AEs

|   |   |
|---|---|
| End point title   | Number of subjects with unsolicited AEs |
| End point description:<br>An unsolicited AE covers any untoward medical occurrence in a clinical investigation subject temporally associated with the use of a medicinal product, whether or not considered related to the medicinal product and reported in addition to those solicited during the clinical study and any solicited symptom with onset outside the specified period of follow-up for solicited symptoms. Any was defined as the occurrence of any unsolicited AE regardless of intensity grade or relation to vaccination. Possibly or Probably related = AE assessed by the investigator as related to the vaccination.<br>The data were reported based on the Unsolicited Safety Set, which included all subjects in the Exposed Set who had post-vaccination unsolicited adverse event records. |   |
| End point type  | Secondary                               |
| End point timeframe:<br>From Day 1 to Day 31  |   |

| End point values                 | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|----------------------------------|------------------------|------------------|-----------------|--|
| Subject group type               | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed      | 33                     | 46               | 50              |  |
| Units: Subjects                  |                        |                  |                 |  |
| Any AEs                          | 11                     | 21               | 20              |  |
| Possibly or Probably Related AEs | 3                      | 11               | 8               |  |

## Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with medically attended AEs reported during the entire study period

|  |  |
|--|--|
| End point title  | Number of subjects with medically attended AEs reported during the entire study period |
| End point description:<br>Medically attended AEs = were defined as events for which the subject received medical attention defined as hospitalization, an emergency room visit, or a visit to or from medical personnel (medical doctor) for any reason. Any medically attended AE(s) = Occurrence of any medically attended AE(s) regardless of intensity grade or relation to vaccination.<br>The data were reported based on the Unsolicited Safety Set, which included all subjects in the Exposed Set who had post-vaccination unsolicited adverse event records. |  |
| End point type   | Secondary  |

End point timeframe:

From Day 1 to Day 31 (MenABCWY+OMV Group) and from Day 1 to Day 61 (MenACWY and Naive Groups)

| End point values            | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|-----------------------------|------------------------|------------------|-----------------|--|
| Subject group type          | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed | 33                     | 46               | 50              |  |
| Units: Subjects             |                        |                  |                 |  |
| Medically attended AEs      | 2                      | 6                | 5               |  |

### Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with unsolicited AEs leading to premature withdrawal from study reported during the entire study period

|                 |  |
|-----------------|--|
| End point title | Number of subjects with unsolicited AEs leading to premature withdrawal from study reported during the entire study period |
|-----------------|--|

End point description:

The number of subjects who reported unsolicited AEs leading to premature withdrawal from study after any vaccination.

The data were reported based on the Unsolicited Safety Set, which included all subjects in the Exposed Set who had post-vaccination unsolicited adverse event records.

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

End point timeframe:

From Day 1 to Day 31 (MenABCWY+OMV Group) and from Day 1 to Day 61 (MenACWY and Naive Groups)

| End point values                    | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|-------------------------------------|------------------------|------------------|-----------------|--|
| Subject group type                  | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed         | 33                     | 46               | 50              |  |
| Units: Subjects                     |                        |                  |                 |  |
| AEs leading to premature withdrawal | 0                      | 1                | 0               |  |

### Statistical analyses

No statistical analyses for this end point

### Secondary: Number of subjects with serious adverse events (SAEs) reported during the entire study period

|                 |   |
|-----------------|---|
| End point title | Number of subjects with serious adverse events (SAEs) reported during the entire study period |
|-----------------|---|

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**End point description:**

Serious adverse events (SAEs) assessed include medical occurrences that result in death, are life-threatening, require hospitalization or prolongation of hospitalization or result in disability/incapacity. Any SAE(s) = Occurrence of any SAE(s) regardless of intensity grade or relation to vaccination. Possibly or probably related SAE(s) = SAE(s) assessed by the investigator as related to the vaccination. The data were reported based on the Unsolicited Safety Set, which included all subjects in the Exposed Set who had post-vaccination unsolicited adverse event records.

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

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**End point timeframe:**

From Day 1 to Day 31 (MenABCWY+OMV Group) and from Day 1 to Day 61 (MenACWY and Naive Groups)

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| <b>End point values</b>           | MenABCWY+O<br>MV Group | MenACWY<br>Group | Naive Group     |  |
|-----------------------------------|------------------------|------------------|-----------------|--|
| Subject group type                | Reporting group        | Reporting group  | Reporting group |  |
| Number of subjects analysed       | 33                     | 46               | 50              |  |
| Units: Subjects                   |                        |                  |                 |  |
| Any SAEs                          | 0                      | 0                | 0               |  |
| Possibly or probably related SAEs | 0                      | 0                | 0               |  |
| AEs leading to death              | 0                      | 0                | 0               |  |

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**Statistical analyses**

No statistical analyses for this end point

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## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Solicited local and systemic symptoms: from Day 1 (6 hours) to Day 7 after each study vaccination;  
Unsolicited AEs: from Day 1 to Day 31 after each study vaccination; SAEs: during the entire study period (from Day 1 to Day 61).

|                 |            |
|-----------------|------------|
| Assessment type | Systematic |
|-----------------|------------|

### Dictionary used

|                    |        |
|--------------------|--------|
| Dictionary name    | MedDRA |
| Dictionary version | 19.0   |

### Reporting groups

|                       |                    |
|-----------------------|--------------------|
| Reporting group title | MenABCWY+OMV Group |
|-----------------------|--------------------|

Reporting group description:

Subjects who received 2 doses of MenABCWY+OMV vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received a booster dose of MenABCWY+OMV vaccine in the current study at Day 1.

|                       |               |
|-----------------------|---------------|
| Reporting group title | MenACWY Group |
|-----------------------|---------------|

Reporting group description:

Subjects who received MenACWY vaccine in the parent study V102\_02 (NCT01210885) and received no subsequent meningococcal vaccines, received 2 doses of MenABCWY+OMV vaccine, one month apart (Day 1 and Day 31), in the current study.

|                       |             |
|-----------------------|-------------|
| Reporting group title | Naive Group |
|-----------------------|-------------|

Reporting group description:

Subjects similar in age to subjects in the MenABCWY+OMV and MenACWY groups, who had not previously received any meningococcal vaccine and who received 2 doses of MenABCWY+OMV vaccine, 1 month apart (Day 1 and Day 31), in the current study.

| Serious adverse events                            | MenABCWY+OMV Group | MenACWY Group  | Naive Group    |
|---|--------------------|----------------|----------------|
| Total subjects affected by serious adverse events |                    |                |                |
| subjects affected / exposed                       | 0 / 33 (0.00%)     | 0 / 46 (0.00%) | 0 / 50 (0.00%) |
| number of deaths (all causes)                     | 0                  | 0              | 0              |
| number of deaths resulting from adverse events    | 0                  | 0              | 0              |

Frequency threshold for reporting non-serious adverse events: 5 %

| Non-serious adverse events                            | MenABCWY+OMV Group | MenACWY Group    | Naive Group      |
|---|--------------------|------------------|------------------|
| Total subjects affected by non-serious adverse events |                    |                  |                  |
| subjects affected / exposed                           | 33 / 33 (100.00%)  | 44 / 46 (95.65%) | 48 / 50 (96.00%) |
| Nervous system disorders                              |                    |                  |                  |
| Headache  |                    |                  |                  |

|   |                        |                        |                         |
|---|------------------------|------------------------|-------------------------|
| subjects affected / exposed<br>occurrences (all)        | 19 / 33 (57.58%)<br>43 | 23 / 46 (50.00%)<br>84 | 28 / 50 (56.00%)<br>120 |
| General disorders and administration<br>site conditions |                        |                        |                         |
| Chills  |                        |                        |                         |
| subjects affected / exposed                             | 5 / 33 (15.15%)        | 14 / 46 (30.43%)       | 16 / 50 (32.00%)        |
| occurrences (all)                                       | 10                     | 25                     | 31                      |
| Fatigue   |                        |                        |                         |
| subjects affected / exposed                             | 14 / 33 (42.42%)       | 20 / 46 (43.48%)       | 27 / 50 (54.00%)        |
| occurrences (all)                                       | 29                     | 75                     | 82                      |
| Injection site erythema                                 |                        |                        |                         |
| subjects affected / exposed                             | 11 / 33 (33.33%)       | 26 / 46 (56.52%)       | 30 / 50 (60.00%)        |
| occurrences (all)                                       | 45                     | 135                    | 123                     |
| Injection site induration                               |                        |                        |                         |
| subjects affected / exposed                             | 18 / 33 (54.55%)       | 27 / 46 (58.70%)       | 30 / 50 (60.00%)        |
| occurrences (all)                                       | 75                     | 173                    | 169                     |
| Injection site pain                                     |                        |                        |                         |
| subjects affected / exposed                             | 31 / 33 (93.94%)       | 42 / 46 (91.30%)       | 48 / 50 (96.00%)        |
| occurrences (all)                                       | 114                    | 295                    | 333                     |
| Pyrexia   |                        |                        |                         |
| subjects affected / exposed                             | 0 / 33 (0.00%)         | 8 / 46 (17.39%)        | 10 / 50 (20.00%)        |
| occurrences (all)                                       | 0                      | 12                     | 13                      |
| Gastrointestinal disorders                              |                        |                        |                         |
| Nausea  |                        |                        |                         |
| subjects affected / exposed                             | 4 / 33 (12.12%)        | 10 / 46 (21.74%)       | 15 / 50 (30.00%)        |
| occurrences (all)                                       | 11                     | 30                     | 25                      |
| Musculoskeletal and connective tissue<br>disorders      |                        |                        |                         |
| Arthralgia  |                        |                        |                         |
| subjects affected / exposed                             | 8 / 33 (24.24%)        | 11 / 46 (23.91%)       | 19 / 50 (38.00%)        |
| occurrences (all)                                       | 14                     | 35                     | 51                      |
| Myalgia   |                        |                        |                         |
| subjects affected / exposed                             | 18 / 33 (54.55%)       | 25 / 46 (54.35%)       | 26 / 50 (52.00%)        |
| occurrences (all)                                       | 42                     | 85                     | 96                      |
| Infections and infestations                             |                        |                        |                         |
| Nasopharyngitis   |                        |                        |                         |
| subjects affected / exposed                             | 1 / 33 (3.03%)         | 6 / 46 (13.04%)        | 1 / 50 (2.00%)          |
| occurrences (all)                                       | 1                      | 6                      | 1                       |



|                                    |                 |                  |                  |
|------------------------------------|-----------------|------------------|------------------|
| Metabolism and nutrition disorders |                 |                  |                  |
| Decreased appetite                 |                 |                  |                  |
| subjects affected / exposed        | 5 / 33 (15.15%) | 11 / 46 (23.91%) | 13 / 50 (26.00%) |
| occurrences (all)                  | 11              | 25               | 30               |

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

| Date             | Amendment   |
|------------------|---|
| 18 November 2014 | Allow pregnancy test be performed in urine or blood sample. |

Notes:

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### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported