



Clinical trial results:

A phase III, open, controlled, multi-centric study to evaluate the immunogenicity, safety and reactogenicity of GSK Biologicals' 10-valent pneumococcal conjugate vaccine when administered to children aged between 2 to 17 years who are at an increased risk of pneumococcal infection and to an age-matched control group of healthy children aged 24 to 59 months.

Summary

EudraCT number	2011-006013-34
Trial protocol	Outside EU/EEA PL
Global end of trial date	29 June 2015

Results information

Result version number	v2
This version publication date	21 July 2016
First version publication date	04 February 2016
Version creation reason	• New data added to full data set Data for secondary endpoints have been added.

Trial information

Trial identification

Sponsor protocol code	115884
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Additional study identifiers

ISRCTN number	-
ClinicalTrials.gov id (NCT number)	NCT01746108
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)	Yes
EMA paediatric investigation plan number(s)	EMA-000673-PIP01-09
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	31 May 2016
Is this the analysis of the primary completion data?	Yes
Primary completion date	29 June 2015
Global end of trial reached?	Yes
Global end of trial date	29 June 2015
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To assess the immunogenicity of GSK Biologicals' 10Pn-PD-DiT vaccine when administered to at-risk children aged between 2-17 years, either as a 2-dose catch-up vaccination in unprimed children or as a single dose in primed children.

Protection of trial subjects:

All subjects were supervised closely for at least 30 minutes following vaccination with appropriate medical treatment readily available. Vaccines were administered by qualified and trained personnel. Only eligible subjects that had no contraindications to any components of the vaccines were vaccinated. Subjects were followed-up after each vaccination.

Background therapy: -

Evidence for comparator: -

Actual start date of recruitment	18 June 2013
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	Poland: 15
Country: Number of subjects enrolled	Russian Federation: 37
Worldwide total number of subjects	52
EEA total number of subjects	15

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)	0
Children (2-11 years)	35
Adolescents (12-17 years)	17

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

Subject disposition

Recruitment

Recruitment details:

No Healthy primed subjects, aged 2-4 years (age-matched to the 2-4 years primed subjects in At risk group - see enrolment process for healthy subjects, as described for HE-Un-2-4Y Group; who had to receive 1 dose of 10Pn-PD-DiT because vaccinated with at least 1 dose of a pneumococcal conjugate vaccine before enrolment) were enrolled in the study.

Pre-assignment

Screening details: -

Pre-assignment period milestones

Number of subjects started	52
Number of subjects completed	52

Period 1

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

Arms

Are arms mutually exclusive?	Yes
Arm title	AR-Pr-2-17Y Group

Arm description:

Primed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 1 dose of 10Pn-PD-DiT vaccine: Primed groups included subjects who have been previously vaccinated with at least one dose of a pneumococcal conjugate vaccine, i.e. either Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13 or with plain polysaccharide pneumococcal vaccine more than 2 years (24 months) and less than 5 years (60 months) before enrolment.

*An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Arm type	Experimental
Investigational medicinal product name	Synflorix
Investigational medicinal product code	GSK1024850A
Other name	10Pn-PD-DiT, 10Pn
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

Subjects received 1 dose of Synflorix™ vaccine (Month 0). Pneumococcal vaccine dose was administered intramuscularly into the non-dominant deltoid for Children ≥ 12 months of age if the muscle size is adequate or in the thigh for the other subjects.

Arm title	AR-Un-2-17Y Group
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Arm description:

Unprimed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 2 doses of 10Pn-PD-DiT vaccine: Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13.

* An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus

erythematous (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Arm type	Experimental
Investigational medicinal product name	Synflorix
Investigational medicinal product code	GSK1024850A
Other name	10Pn-PD-DiT, 10Pn
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

Subjects received 2 doses of Synflorix™ vaccine (Month 0 and Month 2). Pneumococcal vaccine doses were administered intramuscularly into the non-dominant deltoid for Children ≥ 12 months of age if the muscle size is adequate or in the thigh for the other subjects.

Arm title	HE-Un-2-4Y Group
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Arm description:

Healthy (HE) unprimed subjects, aged between 24 and 59 months of age (age-matched to the subjects aged 24-59 months in the At risk groups), receiving 2 doses of 10Pn-PD-DiT vaccine. Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13. For each enrolled at-risk subject aged between 24-59 months, a healthy subject of the same age expressed in years from the same country should be enrolled regardless of the priming status. In other words, a healthy subject could be enrolled only once if he/she could be matched with an unmatched at-risk subject of the same age and country.

Arm type	Active comparator
Investigational medicinal product name	Synflorix
Investigational medicinal product code	GSK1024850A
Other name	10Pn-PD-DiT, 10Pn
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

Subjects received 2 doses of Synflorix™ vaccine (Month 0 and Month 2). Pneumococcal vaccine doses were administered intramuscularly into the non-dominant deltoid for Children ≥ 12 months of age if the muscle size is adequate or in the thigh for the other subjects.

Number of subjects in period 1	AR-Pr-2-17Y Group	AR-Un-2-17Y Group	HE-Un-2-4Y Group
Started	18	28	6
Completed	18	24	6
Not completed	0	4	0
Consent withdrawn by subject	-	1	-
Adverse event, non-fatal	-	1	-
Migrated /moved from study area	-	1	-
Lost to follow-up	-	1	-

Baseline characteristics

Reporting groups

Reporting group title	AR-Pr-2-17Y Group
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Reporting group description:

Primed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 1 dose of 10Pn-PD-DiT vaccine: Primed groups included subjects who have been previously vaccinated with at least one dose of a pneumococcal conjugate vaccine, i.e. either Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13 or with plain polysaccharide pneumococcal vaccine more than 2 years (24 months) and less than 5 years (60 months) before enrolment.

*An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Reporting group title	AR-Un-2-17Y Group
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Reporting group description:

Unprimed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 2 doses of 10Pn-PD-DiT vaccine: Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13.

* An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Reporting group title	HE-Un-2-4Y Group
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Reporting group description:

Healthy (HE) unprimed subjects, aged between 24 and 59 months of age (age-matched to the subjects aged 24-59 months in the At risk groups), receiving 2 doses of 10Pn-PD-DiT vaccine. Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13. For each enrolled at-risk subject aged between 24-59 months, a healthy subject of the same age expressed in years from the same country should be enrolled regardless of the priming status. In other words, a healthy subject could be enrolled only once if he/she could be matched with an unmatched at-risk subject of the same age and country.

Reporting group values	AR-Pr-2-17Y Group	AR-Un-2-17Y Group	HE-Un-2-4Y Group
Number of subjects	18	28	6
Age categorical			
Units: Subjects			
In utero			
Preterm newborn infants (gestational age < 37 wks)			
Newborns (0-27 days)			
Infants and toddlers (28 days-23 months)			
Children (2-11 years)			
Adolescents (12-17 years)			
Adults (18-64 years)			
From 65-84 years			
85 years and over			

Age continuous Units: years arithmetic mean standard deviation	11.3 ± 3.8	8.6 ± 4.2	2.8 ± 0.8
Gender categorical Units: Subjects			
Female	10	14	2
Male	8	14	4

Reporting group values	Total		
Number of subjects	52		
Age categorical 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)	0		
Adults (18-64 years)	0		
From 65-84 years	0		
85 years and over	0		
Age continuous Units: years arithmetic mean standard deviation	-		
Gender categorical Units: Subjects			
Female	26		
Male	26		

End points

End points reporting groups

Reporting group title	AR-Pr-2-17Y Group
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Reporting group description:

Primed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 1 dose of 10Pn-PD-DiT vaccine: Primed groups included subjects who have been previously vaccinated with at least one dose of a pneumococcal conjugate vaccine, i.e. either Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13 or with plain polysaccharide pneumococcal vaccine more than 2 years (24 months) and less than 5 years (60 months) before enrolment.

*An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Reporting group title	AR-Un-2-17Y Group
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Reporting group description:

Unprimed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 2 doses of 10Pn-PD-DiT vaccine: Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13.

* An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Reporting group title	HE-Un-2-4Y Group
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Reporting group description:

Healthy (HE) unprimed subjects, aged between 24 and 59 months of age (age-matched to the subjects aged 24-59 months in the At risk groups), receiving 2 doses of 10Pn-PD-DiT vaccine. Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13. For each enrolled at-risk subject aged between 24-59 months, a healthy subject of the same age expressed in years from the same country should be enrolled regardless of the priming status. In other words, a healthy subject could be enrolled only once if he/she could be matched with an unmatched at-risk subject of the same age and country.

Subject analysis set title	AR-PR-2-4Y Group
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Subject analysis set type	Sub-group analysis
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Subject analysis set description:

subset of the AR-PR-2-17Y Group including subjects aged between 24 and 59 months.

Subject analysis set title	AR-Un-2-4Y Group
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Subject analysis set type	Sub-group analysis
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Subject analysis set description:

subset of the AR-UN-2-17Y Group including subjects aged between 24 and 59 months.

Subject analysis set title	AR-PR-5-17Y Group
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Subject analysis set type	Sub-group analysis
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Subject analysis set description:

subset of the AR-PR-2-17Y Group including subjects aged between 5 and 17 years.

Subject analysis set title	AR- UN-5-17Y Group
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Subject analysis set type	Sub-group analysis
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Subject analysis set description:

subset of the AR- UN-5-17Y Group including subjects aged between 5 and 17 years.

Primary: Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the At risk Primed Group.

End point title	Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the At risk Primed Group. ^{[1][2]}
End point description:	
Antibodies assessed for this outcome measure were those against the vaccine pneumococcal serotypes 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F (ANTI-1, -4, -5, -6A, -6B, -7F, -9V, -14, -18C, -19A, -19F and -23F). Antibody concentrations were measured by 22F-inhibition enzyme-linked immunosorbent assay (ELISA), expressed as geometric mean concentrations (GMCs), in micrograms per millilitre (µg/mL). The seropositivity cut-off of the assay was an antibody concentration ≥ 0.05 µg/mL. Antibody concentrations < 0.05 µg/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.	
End point type	Primary
End point timeframe:	
One month after Dose 1 (At Month 1)	

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 intent of this endpoint was descriptive, no comparison of groups was performed.

[2] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Pr-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	18			
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-1 (N=18)	1.94 (1.4 to 2.69)			
Anti-4 (N=18)	6.16 (3.89 to 9.76)			
Anti-5 (N=18)	2.44 (1.24 to 4.83)			
Anti-6B (N=18)	3.66 (1.93 to 6.96)			
Anti-7F (N=18)	3.34 (2.54 to 4.38)			
Anti-9V (N=18)	2.87 (1.65 to 4.97)			
Anti-14 (N=18)	21.08 (10.97 to 40.52)			
Anti-18C (N=18)	10.84 (6.99 to 16.81)			
Anti-19F (N=18)	18.22 (9.57 to 34.7)			
Anti-23F (N=18)	2.24 (1.14 to 4.41)			
Anti-6A (N=18)	3.76 (1.7 to 8.34)			
Anti-19A (N=18)	4.44 (2.34 to 8.45)			

Statistical analyses

Primary: Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the At risk Un-primed Group.

End point title	Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the At risk Un-primed Group. ^{[3][4]}
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End point description:

Antibodies assessed for this outcome measure were those against the vaccine pneumococcal serotypes 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F (ANTI-1, -4, -5, -6A, -6B, -7F, -9V, -14, -18C, -19A, -19F and -23F). Antibody concentrations were measured by 22F-inhibition enzyme-linked immunosorbent assay (ELISA), expressed as geometric mean concentrations (GMCs), in micrograms per millilitre (µg/mL). The seropositivity cut-off of the assay was an antibody concentration ≥ 0.05 µg/mL. Antibody concentrations < 0.05 µg/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.

End point type	Primary
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End point timeframe:

One month after Dose 1 (At Month 1) and one month after Dose 2 (At Month 3)

Notes:

[3] - 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 intent of this endpoint was descriptive, no comparison of groups was performed.

[4] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Un-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	23			
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-1 Month 1 (N=23)	1.52 (1.13 to 2.06)			
Anti-1 Month 3 (N=21)	2.52 (1.87 to 3.4)			
Anti-4 Month 1 (N=23)	9.26 (6.62 to 12.95)			
Anti-4 Month 3 (N=21)	7.67 (5.59 to 10.53)			
Anti-5 Month 1 (N=23)	2.74 (1.6 to 4.69)			
Anti-5 Month 3 (N=21)	3.93 (2.46 to 6.27)			
Anti-6B Month 1 (N=23)	1.21 (0.59 to 2.46)			
Anti-6B Month 3 (N=21)	2.19 (1.26 to 3.8)			
Anti-7F Month 1 (N=23)	3.25 (2.24 to 4.71)			
Anti-7F Month 3 (N=21)	5.6 (3.95 to 7.93)			
Anti-9V Month 1 (N=23)	1.89 (1.14 to 3.12)			
Anti-9V Month 3 (N=21)	3.23 (2.07 to 5.03)			
Anti-14 Month 1 (N=23)	7.78 (3.86 to 15.68)			

Anti-14 Month 3 (N=21)	13.64 (8.42 to 22.12)			
Anti-18C Month 1 (N=23)	13.04 (8.08 to 21.04)			
Anti-18C Month 3 (N=21)	24.15 (15.4 to 37.86)			
Anti-19F Month 1 (N=23)	12.41 (6.05 to 25.44)			
Anti-19F Month 3 (N=21)	20.53 (11.42 to 36.9)			
Anti-23F Month 1 (N=23)	1.09 (0.5 to 2.4)			
Anti-23F Month 3 (N=21)	2.26 (1.27 to 4.04)			
Anti-6A Month 1 (N=23)	1.02 (0.53 to 1.97)			
Anti-6A Month 3 (N=21)	1.5 (0.87 to 2.58)			
Anti-19A Month 1 (N=23)	2.18 (0.96 to 4.95)			
Anti-19A Month 3 (N=21)	4.05 (1.96 to 8.38)			

Statistical analyses

No statistical analyses for this end point

Primary: Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the At Risk Primed Group.

End point title	Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the At Risk Primed Group. ^{[5][6]}
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End point description:

Pneumococcal vaccine serotypes assessed were 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F and were calculated, expressed as geometric mean titers (GMTs). The seropositivity cut-off for the assay was ≥ 8 . Antibody titers < 8 were given an arbitrary value of half the cut-off for the purpose of GMT calculation.

End point type	Primary
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End point timeframe:

One month after Dose 1 (At Month 1)

Notes:

[5] - 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 intent of this endpoint was descriptive, no comparison of groups was performed.

[6] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Pr-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	15			
Units: Titers				
geometric mean (confidence interval 95%)				
Opsono-1 (N=14)	12.4 (5.3 to 29.3)			

Opsono-4 (N=15)	1291.6 (722.5 to 2308.9)			
Opsono-5 (N=15)	75.9 (26.9 to 214.2)			
Opsono-6B (N=15)	698.1 (348.8 to 1397.2)			
Opsono-7F (N=15)	2787.4 (1959.9 to 3964.4)			
Opsono-9V (N=15)	1955.3 (1209.8 to 3160.3)			
Opsono-14 (N=15)	2495.7 (1220.6 to 5103.1)			
Opsono-18C (N=15)	4421.4 (2982.8 to 6553.9)			
Opsono-19F (N=15)	3272.4 (1849.4 to 5790.5)			
Opsono-23F (N=15)	613.8 (244.9 to 1538.5)			
Opsono-6A (N=15)	2590.9 (1394.2 to 4814.7)			
Opsono-19A (N=15)	961.2 (376.4 to 2454.8)			

Statistical analyses

No statistical analyses for this end point

Primary: Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the At Risk Un-primed Group.

End point title	Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the At Risk Un-primed Group. ^{[7][8]}
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End point description:

Pneumococcal vaccine serotypes assessed were 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F and were calculated, expressed as geometric mean titers (GMTs). The seropositivity cut-off for the assay was ≥ 8 . Antibody titers < 8 were given an arbitrary value of half the cut-off for the purpose of GMT calculation.

End point type	Primary
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End point timeframe:

One month after Dose 1 (At Month 1) and one month after Dose 2 (At Month 3)

Notes:

[7] - 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 intent of this endpoint was descriptive, no comparison of groups was performed.

[8] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Un-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	17			
Units: Titers				
geometric mean (confidence interval 95%)				
Opsono-1 Month 1 (N=14)	8.6 (4 to 18.6)			
Opsono-1 Month 3 (N=15)	29.1 (12.1 to 70.1)			
Opsono-4 Month 1 (N=17)	1497.1 (696.6 to 3217.4)			
Opsono-4 Month 3 (N=16)	2657 (1763.5 to 4003.3)			
Opsono-5 Month 1 (N=16)	112.5 (49.1 to 258)			
Opsono-5 Month 3 (N=16)	212.9 (116 to 390.7)			
Opsono-6B Month 1 (N=16)	1188.8 (548.7 to 2575.7)			
Opsono-6B Month 3 (N=16)	2384.3 (1483.2 to 3832.8)			
Opsono-7F Month 1 (N=17)	4433.6 (3110.8 to 6319)			
Opsono-7F Month 3 (N=16)	6724.3 (4240.9 to 10661.8)			
Opsono-9V Month 1 (N=17)	1076.5 (330.8 to 3502.8)			
Opsono-9V Month 3 (N=16)	1319.5 (677.2 to 2571.1)			
Opsono-14 Month 1 (N=17)	2724.6 (1473.1 to 5039.1)			
Opsono-14 Month 3 (N=16)	6590.5 (3329.7 to 13044.6)			
Opsono-18C Month 1 (N=17)	8665.8 (5076.4 to 14793.2)			
Opsono-18C Month 3 (N=16)	9939.8 (7045 to 14024.1)			
Opsono-19F Month 1 (N=16)	4569.1 (2695.3 to 7745.5)			
Opsono-19F Month 3 (N=16)	3441.8 (1709.8 to 6928)			
Opsono-23F Month 1 (N=16)	1326.4 (796.1 to 2210)			
Opsono-23F Month 3 (N=16)	1949.3 (1145.5 to 3317.2)			
Opsono-6A Month 1 (N=16)	1982.6 (648.9 to 6057.2)			
Opsono-6A Month 3 (N=14)	1908.3 (975.1 to 3734.8)			
Opsono-19A Month 1 (N=16)	1037.4 (373.5 to 2881.5)			

Opsono-19A Month 3 (N=16)	2769.3 (1490.6 to 5145)			
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Statistical analyses

No statistical analyses for this end point

Primary: Concentrations of Antibodies against Protein D (PD) in the At Risk Primed Group.

End point title	Concentrations of Antibodies against Protein D (PD) in the At Risk Primed Group. ^{[9][10]}
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End point description:

Anti-protein D (Anti-PD) antibody concentrations by Enzyme-Linked Immunosorbent Assay (ELISA) were calculated, expressed as geometric mean concentrations (GMCs) in ELISA unit per millilitre (EL.U/mL) and tabulated. The seropositivity cut-off for the assay was ≥ 153 EL.U/mL. Antibody concentrations < 153 EL.U/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.

End point type	Primary
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End point timeframe:

One month after Dose 1 (At Month 1)

Notes:

[9] - 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 intent of this endpoint was descriptive, no comparison of groups was performed.

[10] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Pr-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	18			
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PD Month 1	173.1 (109.2 to 274.3)			

Statistical analyses

No statistical analyses for this end point

Primary: Concentrations of Antibodies against Protein D (PD) in the At Risk Un-primed Group.

End point title	Concentrations of Antibodies against Protein D (PD) in the At Risk Un-primed Group. ^{[11][12]}
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End point description:

Anti-protein D (Anti-PD) antibody concentrations by Enzyme-Linked Immunosorbent Assay (ELISA) were calculated, expressed as geometric mean concentrations (GMCs) in ELISA unit per millilitre (EL.U/mL) and tabulated. The seropositivity cut-off for the assay was ≥ 153 EL.U/mL. Antibody concentrations $<$

153 EL.U/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.

End point type	Primary
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End point timeframe:

One month after Dose 1 (At Month 1) and one month after Dose 2 (At Month 3)

Notes:

[11] - 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 intent of this endpoint was descriptive, no comparison of groups was performed.

[12] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	AR-Un-2-17Y Group			
Subject group type	Reporting group			
Number of subjects analysed	23			
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PD Month 1 (N=23)	372.5 (179.3 to 773.8)			
Anti-PD Month 3 (N=19)	870.8 (420.6 to 1803)			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 1 for subjects aged between 2 to 4 years.

End point title	Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 1 for subjects aged between 2 to 4 years. ^[13]
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End point description:

Solicited local AEs assessed were pain, redness and swelling. Any = incidence of any local symptom regardless of intensity grade. Grade 3 pain = cried when limb was moved/spontaneously painful. Grade 3 redness/swelling = redness/swelling above 30 millimetre. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 1

Notes:

[13] - 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: The endpoint concerns only subjects from the Groups specified in the Endpoint title

End point values	HE-Un-2-4Y Group	AR-PR-2-4Y Group	AR-Un-2-4Y Group	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	6	1	5	
Units: Subjects				
Any pain Dose 1	5	1	2	
Grade 3 pain Dose 1	1	0	0	
Any redness Dose 1	6	1	2	
Grade 3 redness Dose 1	2	0	0	
Any swelling Dose 1	3	1	1	
Grade 3 Swelling Dose 1	1	0	1	

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 2 for subjects aged between 2 to 4 years.

End point title	Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 2 for subjects aged between 2 to 4 years. ^[14]
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End point description:

Solicited local AEs assessed were pain, redness and swelling. Any = incidence of any local symptom regardless of intensity grade. Grade 3 pain = cried when limb was moved/spontaneously painful. Grade 3 redness/swelling = redness/swelling above 30 millimetre. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 2

Notes:

[14] - 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: The endpoint concerns only subjects from the Groups specified in the Endpoint title

End point values	HE-Un-2-4Y Group	AR-Un-2-4Y Group		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	6	2		
Units: Subjects				
Any pain Dose 2	3	1		
Grade 3 pain Dose 2	1	0		
Any redness Dose 2	4	0		
Grade 3 Redness Dose 2	0	0		
Any swelling Dose 2	1	1		
Grade 3 Swelling Dose 2	0	0		

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 1 for subjects aged between 5 to 17 years.

End point title	Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 1 for subjects aged between 5 to 17 years.
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End point description:

Solicited local AEs assessed were pain, redness and swelling. Any = incidence of any local symptom regardless of intensity grade. Grade 3 pain = Significant pain at rest. Prevented normal every day activities. Grade 3 redness/swelling = redness/swelling above 50 millimetre. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 1

End point values	AR-PR-5-17Y Group	AR- UN-5-17Y Group		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	17	23		
Units: Subjects				
Any pain Dose 1	14	22		
Grade 3 pain Dose 1	0	4		
Any redness Dose 1	6	10		
Grade 3 redness Dose 1	0	0		
Any swelling Dose 1	4	6		
Grade 3 Swelling Dose 1	1	0		

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 2 for subjects aged between 5 to 17 years.

End point title	Number of subjects with any and severe (grade 3) solicited local Adverse Events (AEs) after dose 2 for subjects aged between 5 to 17 years.
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End point description:

Solicited local AEs assessed were pain, redness and swelling. Any = incidence of any local symptom regardless of intensity grade. Grade 3 pain = Significant pain at rest. Prevented normal every day activities. Grade 3 redness/swelling = redness/swelling above 50 millimetre. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 2

End point values	AR- UN-5-17Y Group			
Subject group type	Subject analysis set			
Number of subjects analysed	23			
Units: Subjects				
Any pain Dose 2	16			
Grade 3 pain Dose 2	1			
Any redness Dose 2	7			
Grade 3 redness Dose 2	1			
Any swelling Dose 2	5			
Grade 3 Swelling Dose 2	3			

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 1 for subjects aged between 2 to 4 years.

End point title	Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 1 for subjects aged between 2 to 4 years. ^[15]
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End point description:

General AEs = drowsiness, irritability, loss of appetite (loss of appet) and fever (axillary ≥ 37.5 degrees Celsius). Any= Incidence of any solicited general symptom regardless of intensity grade or relationship to vaccination. Grade 3: drowsiness = prevented normal activity; irritability = crying that could not be comforted/ prevented normal activity; loss of appetite = not eating at all; fever $> 39.5^{\circ}\text{C}$. Related = symptom assessed by the investigator as related to the vaccination. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 1

Notes:

[15] - 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: The endpoint concerns only subjects from the Groups specified in the Endpoint title

End point values	HE-Un-2-4Y Group	AR-PR-2-4Y Group	AR-Un-2-4Y Group	
Subject group type	Reporting group	Subject analysis set	Subject analysis set	
Number of subjects analysed	6	1	5	
Units: Subjects				
Any drowsiness Dose 1	1	1	0	
Grade 3 drowsiness Dose 1	0	0	0	
Related drowsiness Dose 1	1	1	0	
Any irritability Dose 1	3	1	1	
Grade 3 irritability Dose 1	0	0	0	
Related irritability Dose 1	3	1	1	
Any loss of appet Dose 1	4	1	2	
Grade 3 loss of appet. Dose 1	0	0	0	
Related loss of appet. Dose 1	3	1	1	
Any Fever Dose 1	1	0	1	
Grade 3 Fever Dose 1	0	0	0	

Related fever Dose 1	1	0	0	
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Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 2 for subjects aged between 2 to 4 years.

End point title	Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 2 for subjects aged between 2 to 4 years. ^[16]
-----------------	---

End point description:

General AEs = drowsiness, irritability, loss of appetite (loss of appet) and fever (axillary ≥ 37.5 degrees Celsius). Any= Incidence of any solicited general symptom regardless of intensity grade or relationship to vaccination. Grade 3: drowsiness = prevented normal activity; irritability = crying that could not be comforted/ prevented normal activity; loss of appetite = not eating at all; fever $> 39.5^{\circ}\text{C}$. Related = symptom assessed by the investigator as related to the vaccination. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 2

Notes:

[16] - 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: The endpoint concerns only subjects from the Groups specified in the Endpoint title

End point values	HE-Un-2-4Y Group	AR-Un-2-4Y Group		
Subject group type	Reporting group	Subject analysis set		
Number of subjects analysed	6	2		
Units: Subjects				
Any drowsiness Dose 2	1	1		
Grade 3 drowsiness Dose 2	0	0		
Related drowsiness Dose 2	1	1		
Any irritability Dose 2	1	1		
Grade 3 irritability Dose 2	0	0		
Related irritability Dose 2	1	1		
Any loss of appet Dose 2	2	1		
Grade 3 loss of appet. Dose 2	0	0		
Related loss of appet. Dose 2	2	1		
Any Fever Dose 2	0	1		
Grade 3 Fever Dose 2	0	0		
Related fever Dose 2	0	1		

Statistical analyses

Secondary: Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 1 for subjects aged between 5 to 17 years.

End point title	Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 1 for subjects aged between 5 to 17 years.
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End point description:

General AEs = headache, fatigue, gastrointestinal symptoms (gastro symp) (nausea, vomiting, diarrhoea and/or abdominal pain) and fever (axillary ≥ 37.5 degrees Celsius). Any= Incidence of any solicited general symptom regardless of intensity grade or relationship to vaccination. Grade 3: headache, fatigue and gastrointestinal symptoms = symptoms that prevented normal activity; Fever > 39.5°C. Related = symptom assessed by the investigator as related to the vaccination. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 1

End point values	AR-PR-5-17Y Group	AR- UN-5-17Y Group		
Subject group type	Subject analysis set	Subject analysis set		
Number of subjects analysed	17	23		
Units: Subjects				
Any fatigue Dose 1	5	5		
Grade 3 fatigue Dose 1	0	0		
Related fatigue Dose 1	4	4		
Any gastro symp Dose 1	3	4		
Grade 3 gastro symp. Dose 1	0	0		
Related gastro symp. Dose 1	2	0		
Any headache Dose 1	5	6		
Grade 3 headache Dose 1	0	0		
Related headache Dose 1	5	6		
Any Fever Dose 1	0	2		
Grade 3 Fever Dose 1	0	0		
Related fever Dose 1	0	2		

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 2 for subjects aged between 5 to 17 years.

End point title	Number of subjects with any, severe (grade 3) and related solicited general Adverse Events (AEs) after dose 2 for subjects aged between 5 to 17 years.
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End point description:

General AEs = headache, fatigue, gastrointestinal symptoms (gastro symp) (nausea, vomiting, diarrhoea and/or abdominal pain) and fever (axillary ≥ 37.5 degrees Celsius). Any= Incidence of any solicited general symptom regardless of intensity grade or relationship to vaccination. Grade 3: headache, fatigue and gastrointestinal symptoms = symptoms that prevented normal activity; Fever >

39.5°C. Related = symptom assessed by the investigator as related to the vaccination. Primed subjects received one dose and Unprimed subjects received two doses.

End point type	Secondary
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End point timeframe:

During the 4-day (Days 0-3) after dose 2

End point values	AR- UN-5-17Y Group			
Subject group type	Subject analysis set			
Number of subjects analysed	23			
Units: Subjects				
Any fatigue Dose 2	7			
Grade 3 fatigue Dose 2	0			
Related fatigue Dose 2	6			
Any gastro symp Dose 2	2			
Grade 3 gastro symp. Dose 2	0			
Related gastro symp. Dose 2	0			
Any headache Dose 2	5			
Grade 3 headache Dose 2	0			
Related headache Dose 2	5			
Any Fever Dose 2	1			
Grade 3 Fever Dose 2	0			
Related fever Dose 2	1			

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.
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End point description:

An unsolicited adverse event is any adverse event (i.e. any untoward medical occurrence in a patient or clinical investigation subject, temporally associated with use of a medicinal product, whether or not considered related to the medicinal product) 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.

End point type	Secondary
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End point timeframe:

Within the 31-day (Days 0-30) post- vaccination period

End point values	AR-Pr-2-17Y Group	AR-Un-2-17Y Group	HE-Un-2-4Y Group	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	28	6	
Units: Subjects				
Any AE	2	14	4	

Statistical analyses

No statistical analyses for this end point

Secondary: Number of subjects with Serious Adverse Events (SAEs).

End point title	Number of subjects with Serious Adverse Events (SAEs).
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End point description:

SAEs assessed include medical occurrences that results in death, are life threatening, require hospitalization or prolongation of hospitalization, results in disability/incapacity or are a congenital anomaly/birth defect in the offspring of study subjects.

End point type	Secondary
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End point timeframe:

From Dose 1 at Month 0 up to study end at Month 1 for primed subjects and at Month 3 for unprimed subjects.

End point values	AR-Pr-2-17Y Group	AR-Un-2-17Y Group	HE-Un-2-4Y Group	
Subject group type	Reporting group	Reporting group	Reporting group	
Number of subjects analysed	18	28	6	
Units: Subjects				
Any SAE	0	1	0	

Statistical analyses

No statistical analyses for this end point

Secondary: Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the Healthy Un-primed Group.

End point title	Concentrations of antibodies against Vaccine Pneumococcal Serotypes in the Healthy Un-primed Group. ^[17]
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End point description:

Antibodies assessed for this outcome measure were those against the vaccine pneumococcal serotypes 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F (ANTI-1, -4, -5, -6A, -6B, -7F, -9V, -14, -18C, -19A, -19F and -23F). Antibody concentrations were measured by 22F-inhibition enzyme-linked immunosorbent assay (ELISA), expressed as geometric mean concentrations (GMCs), in micrograms per millilitre (µg/mL). The seropositivity cut-off of the assay was an antibody concentration ≥ 0.05 µg/mL. Antibody concentrations < 0.05 µg/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.

End point type	Secondary
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End point timeframe:

One month after Dose 1 (At Month 1) and one month after Dose 2 (At Month 3)

Notes:

[17] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	HE-Un-2-4Y Group			
Subject group type	Reporting group			
Number of subjects analysed	4			
Units: µg/mL				
geometric mean (confidence interval 95%)				
Anti-1 Month 1 (N=2)	6.09 (0 to 90592008)			
Anti-1 Month 3 (N=4)	2.41 (0.23 to 25.58)			
Anti-4 Month 1 (N=2)	10.68 (0.03 to 4390.15)			
Anti-4 Month 3 (N=4)	10.89 (6.53 to 18.18)			
Anti-5 Month 1 (N=2)	2.29 (0.62 to 8.41)			
Anti-5 Month 3 (N=4)	3 (1.2 to 7.53)			
Anti-6B Month 1 (N=3)	0.52 (0.02 to 16.94)			
Anti-6B Month 3 (N=4)	0.95 (0.29 to 3.14)			
Anti-7F Month 1 (N=3)	7.62 (3.05 to 19.01)			
Anti-7F Month 3 (N=4)	8.4 (2.98 to 23.71)			
Anti-9V Month 1 (N=3)	2.51 (0.32 to 19.96)			
Anti-9V Month 3 (N=4)	2.78 (0.77 to 10.01)			
Anti-14 Month 1 (N=2)	1.44 (0.24 to 8.73)			
Anti-14 Month 3 (N=4)	7.44 (5.12 to 10.81)			
Anti-18C Month 1 (N=3)	7.36 (1.99 to 27.26)			
Anti-18C Month 3 (N=4)	13.72 (2.57 to 73.26)			
Anti-19F Month 1 (N=2)	20.23 (0.28 to 1466.83)			
Anti-19F Month 3 (N=4)	12.87 (2.69 to 61.53)			
Anti-23F Month 1 (N=2)	1.13 (0 to 1209.69)			
Anti-23F Month 3 (N=4)	1.99 (0.37 to 10.63)			
Anti-6A Month 1 (N=2)	0.89 (0 to 25368671)			
Anti-6A Month 3 (N=4)	0.78 (0.26 to 2.29)			
Anti-19A Month 1 (N=2)	0.1 (0 to 8.09)			

Anti-19A Month 3 (N=4)	0.53 (0.16 to 1.74)			
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Statistical analyses

No statistical analyses for this end point

Secondary: Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the Healthy Un-primed Group.

End point title	Opsonophagocytic Titers against Vaccine Pneumococcal Serotypes in the Healthy Un-primed Group. ^[18]
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End point description:

Pneumococcal vaccine serotypes assessed were 1, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F and were calculated, expressed as geometric mean titers (GMTs). The seropositivity cut-off for the assay was ≥ 8 . Antibody titers < 8 were given an arbitrary value of half the cut-off for the purpose of GMT calculation. When number of subjects analysed = 1, Lower limit and Upper Limit values were entered as equal to the Geometric mean value. "999999.9" was used as placeholder when Upper Limit value was greater than "1.0E8".

End point type	Secondary
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End point timeframe:

One month after Dose 1 (At Month 1) and/or one month after Dose 2 (At Month 3)

Notes:

[18] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	HE-Un-2-4Y Group			
Subject group type	Reporting group			
Number of subjects analysed	2			
Units: Titers				
geometric mean (confidence interval 95%)				
Opsono-1 Month 1 (N=2)	35.2 (0 to 999999.9)			
Opsono-1 Month 3 (N=2)	31.5 (0 to 999999.9)			
Opsono-4 Month 1 (N=2)	1716.7 (556.1 to 5299.7)			
Opsono-4 Month 3 (N=2)	3780.1 (0.2 to 62503343)			
Opsono-5 Month 3 (N=2)	113.3 (0.2 to 61692.5)			
Opsono-6B Month 1 (N=2)	891.3 (22.4 to 35452)			
Opsono-6B Month 3 (N=2)	1118.1 (2.3 to 534561.1)			
Opsono-7F Month 1 (N=2)	4789.2 (28.3 to 810373.3)			
Opsono-7F Month 3 (N=2)	5269.9 (401.1 to 69232.8)			
Opsono-9V Month 1 (N=2)	1121 (93.6 to 13432.2)			

Opsono-9V Month 3 (N=2)	2999.8 (82.6 to 108968.9)			
Opsono-14 Month 1 (N=2)	1344.9 (0.3 to 5396843)			
Opsono-14 Month 3 (N=2)	7678.4 (3059.7 to 19269.1)			
Opsono-18C Month 1 (N=2)	4462 (0.2 to 999999.9)			
Opsono-18C Month 3 (N=2)	6269.6 (1176.4 to 33412.6)			
Opsono-19F Month 1 (N=2)	1934.7 (506.3 to 7392.9)			
Opsono-19F Month 3 (N=2)	1970.4 (250.1 to 15523.1)			
Opsono-23F Month 1 (N=2)	420.6 (2 to 88878.1)			
Opsono-23F Month 3 (N=2)	1324.5 (131 to 13391.2)			
Opsono-6A Month 1 (N=2)	188.8 (0 to 999999.9)			
Opsono-6A Month 3 (N=2)	2182.1 (1713.7 to 2778.5)			
Opsono-19A Month 1 (N=1)	4 (4 to 4)			
Opsono-19A Month 3 (N=2)	637.1 (35.9 to 11317.6)			

Statistical analyses

No statistical analyses for this end point

Secondary: Concentrations of Antibodies against Protein D (PD) in the Healthy Un-primed Group.

End point title	Concentrations of Antibodies against Protein D (PD) in the Healthy Un-primed Group. ^[19]
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End point description:

Anti-protein D (Anti-PD) antibody concentrations by Enzyme-Linked Immunosorbent Assay (ELISA) were calculated, expressed as geometric mean concentrations (GMCs) in ELISA unit per millilitre (EL.U/mL) and tabulated. The seropositivity cut-off for the assay was ≥ 153 EL.U/mL. Antibody concentrations < 153 EL.U/mL were given an arbitrary value of half the cut-off for the purpose of GMC calculation.

End point type	Secondary
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End point timeframe:

One month after Dose 1 (At Month 1) and one month after Dose 2 (At Month 3)

Notes:

[19] - 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: The endpoint concerns only subjects from the Group specified in the Endpoint title

End point values	HE-Un-2-4Y Group			
Subject group type	Reporting group			
Number of subjects analysed	4			
Units: EL.U/mL				
geometric mean (confidence interval 95%)				
Anti-PD Month 1 (N=2)	217.8 (35.9 to 1320.8)			
Anti-PD Month 3 (N=4)	373.9 (140.1 to 998.3)			

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information

Timeframe for reporting adverse events:

SAEs: from Month 0 up to Study end, Solicited and Unsolicited AEs: within the 31-day post- vaccination period.

Assessment type	Non-systematic
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Dictionary used

Dictionary name	MedDRA
Dictionary version	18.1

Reporting groups

Reporting group title	AR-Pr-2-17Y
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Reporting group description:

Primed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 1 dose of 10Pn-PD-DiT vaccine: Primed groups included subjects who have been previously vaccinated with at least one dose of a pneumococcal conjugate vaccine, i.e. either Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13 or with plain polysaccharide pneumococcal vaccine more than 2 years (24 months) and less than 5 years (60 months) before enrolment.

*An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Reporting group title	HE-Un-2-4Y
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Reporting group description:

Healthy (HE) unprimed subjects, aged between 24 and 59 months of age (age-matched to the subjects aged 24-59 months in the At risk groups), receiving 2 doses of 10Pn-PD-DiT vaccine. Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13. For each enrolled at-risk subject aged between 24-59 months, a healthy subject of the same age expressed in years from the same country should be enrolled regardless of the priming status. In other words, a healthy subject could be enrolled only once if he/she could be matched with an unmatched at-risk subject of the same age and country.

Reporting group title	AR-Un-2-17Y
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Reporting group description:

Unprimed subjects aged between 24 months and 17 years, who were at an increased risk of pneumococcal infection*, receiving 2 doses of 10Pn-PD-DiT vaccine: Unprimed groups included subjects who have not been previously vaccinated with any pneumococcal vaccine, i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13.

* An at-risk subject was a subject with Congenital or acquired asplenia such as anatomic, surgical or functional asplenia, or Splenic dysfunction [some degree of functional asplenia, such as sickle-cell disease and other hemoglobinopathies, Hodgkin disease, rheumatologic diseases, systemic lupus erythematosus (SLE), chronic gastrointestinal disorders, liver disease, infiltrative disorders, vascular disorder etc.] or Complement deficiencies, e.g.C1-C4, C5-C9, properdin factor H or factor D.

Serious adverse events	AR-Pr-2-17Y	HE-Un-2-4Y	AR-Un-2-17Y
Total subjects affected by serious adverse events			
subjects affected / exposed	0 / 18 (0.00%)	0 / 6 (0.00%)	1 / 28 (3.57%)
number of deaths (all causes)	0	0	0
number of deaths resulting from adverse events			
Infections and infestations			
Respiratory tract infection			

subjects affected / exposed	0 / 18 (0.00%)	0 / 6 (0.00%)	1 / 28 (3.57%)
occurrences causally related to treatment / all	0 / 0	0 / 0	0 / 1
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	AR-Pr-2-17Y	HE-Un-2-4Y	AR-Un-2-17Y
Total subjects affected by non-serious adverse events			
subjects affected / exposed	17 / 18 (94.44%)	6 / 6 (100.00%)	27 / 28 (96.43%)
Nervous system disorders			
Headache			
subjects affected / exposed	5 / 18 (27.78%)	0 / 6 (0.00%)	7 / 28 (25.00%)
occurrences (all)	5	0	11
Somnolence			
subjects affected / exposed	1 / 18 (5.56%)	1 / 6 (16.67%)	3 / 28 (10.71%)
occurrences (all)	1	2	3
General disorders and administration site conditions			
Fatigue			
alternative assessment type: Systematic			
subjects affected / exposed	5 / 18 (27.78%)	0 / 6 (0.00%)	10 / 28 (35.71%)
occurrences (all)	5	0	12
Injection site pruritus			
subjects affected / exposed	0 / 18 (0.00%)	1 / 6 (16.67%)	0 / 28 (0.00%)
occurrences (all)	0	1	0
Pain			
alternative assessment type: Systematic			
subjects affected / exposed	15 / 18 (83.33%)	5 / 6 (83.33%)	24 / 28 (85.71%)
occurrences (all)	15	8	41
Pyrexia			
subjects affected / exposed	0 / 18 (0.00%)	1 / 6 (16.67%)	4 / 28 (14.29%)
occurrences (all)	0	1	5
Swelling			
alternative assessment type: Systematic			
subjects affected / exposed	5 / 18 (27.78%)	3 / 6 (50.00%)	10 / 28 (35.71%)
occurrences (all)	5	4	13

Gastrointestinal disorders Gastrointestinal disorder subjects affected / exposed occurrences (all)	3 / 18 (16.67%) 3	0 / 6 (0.00%) 0	5 / 28 (17.86%) 6
Respiratory, thoracic and mediastinal disorders Respiratory disorder subjects affected / exposed occurrences (all)	0 / 18 (0.00%) 0	0 / 6 (0.00%) 0	2 / 28 (7.14%) 2
Skin and subcutaneous tissue disorders Erythema subjects affected / exposed occurrences (all)	7 / 18 (38.89%) 7	6 / 6 (100.00%) 10	12 / 28 (42.86%) 19
Psychiatric disorders Irritability subjects affected / exposed occurrences (all)	1 / 18 (5.56%) 1	4 / 6 (66.67%) 4	1 / 28 (3.57%) 2
Infections and infestations Nasopharyngitis subjects affected / exposed occurrences (all) Respiratory tract infection subjects affected / exposed occurrences (all) Rhinitis subjects affected / exposed occurrences (all) Upper respiratory tract infection subjects affected / exposed occurrences (all)	0 / 18 (0.00%) 0 0 / 18 (0.00%) 0 0 / 18 (0.00%) 0 1 / 18 (5.56%) 1	1 / 6 (16.67%) 1 1 / 6 (16.67%) 1 1 / 6 (16.67%) 1 1 / 6 (16.67%) 1	1 / 28 (3.57%) 1 1 / 28 (3.57%) 1 4 / 28 (14.29%) 4 0 / 28 (0.00%) 0
Metabolism and nutrition disorders Decreased appetite subjects affected / exposed occurrences (all) Vitamin D deficiency subjects affected / exposed occurrences (all)	1 / 18 (5.56%) 1 1 / 18 (5.56%) 1	4 / 6 (66.67%) 6 0 / 6 (0.00%) 0	2 / 28 (7.14%) 3 0 / 28 (0.00%) 0

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
22 November 2012	As requested by the Committee for Medicinal Products for Human Use (CHMP), the definition of priming status has been further clarified to consider for inclusion in the primed groups children who have been previously vaccinated with at least one dose of a pneumococcal conjugate vaccine (i.e. either Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13) and/or with plain polysaccharide pneumococcal vaccine more than 2 years (24 months) and less than 5 years (60 months) before enrolment. Children who have not been previously vaccinated with any pneumococcal vaccine (i.e. either plain polysaccharide pneumococcal vaccine, Synflorix (10Pn-PD-DiT), Prevenar or Prevenar13) will be considered for inclusion in the unprimed groups. In addition clarifications have been made to the definition of at-risk subjects and recording of pneumococcal vaccination history of primed subjects.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported