Clinical trial results:
One-, Three-, Five-, Eight- and Ten-Year Data on the Long- Term Immunogenicity of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) in Adults and Adolescents

Summary

EudraCT number	2015-005843-15
Trial protocol	Outside EU/EEA
Global end of trial date	19 February 2008

Results information

Result version number	v1 (current)
This version publication date	16 April 2016
First version publication date	16 April 2016

Trial information

Trial identification

Sponsor protocol code	TC9704-LT

Additional study identifiers

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

Notes:

Sponsors

Sponsor organisation name	Sanofi Pasteur Limited
Sponsor organisation address	1755 Steeles Ave. West, Toronto, Canada, M2R 3T4
Public contact	Clinical Team Leader, Sanofi Pasteur Limited, 416 667-2273, antigona.tomovici@sanofipasteur.com
Scientific contact	Clinical Team Leader, Sanofi Pasteur Limited, 416 667-2273, antigona.tomovici@sanofipasteur.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?	No

Notes:

Results analysis stage

Analysis stage	Final
Date of interim/final analysis	19 February 2008
Is this the analysis of the primary completion data?	No

Global end of trial reached?	Yes
Global end of trial date	19 February 2008
Was the trial ended prematurely?	No

Notes:

General information about the trial

Main objective of the trial:

To describe the antibody levels for tetanus, diphtheria and pertussis at 1 year, 3 years, 5 years, 8 years and 10 years after vaccination with Tdap Vaccine.

Protection of trial subjects:

Subjects were vaccinated in the main TC9704 study. No vaccination was administered as part of this long-term immunogenicity follow-up study.

Background therapy:

Subjects in the original TC9704 study were randomized to 1 of 5 groups: 2 groups received Tetanus and Diphtheria Toxoids Adsorbed Vaccine and Acellular Pertussis Vaccine Adsorbed administered separately and 3 groups received Tdap vaccine (ADACEL®; Lots 21-11, 22-11, 23-11). For the follow-up studies, only subjects from the 2 British Columbia sites, who received Tdap vaccine were invited to participate in the long-term immunogenicity follow-up visits to provide blood samples at 1, 3, 5, 8 and 10 years post-vaccination.

Evidence for comparator:

Not applicable

Actual start date of recruitment	07 October 1998
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	Canada: 449
Worldwide total number of subjects	449
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 months)	0
Children (2-11 years)	0
Adolescents (12-17 years)	0

Adults (18-64 years)	449
From 65 to 84 years	0
85 years and over	0

Subject disposition

Recruitment

Recruitment details:

The study subjects were enrolled from 07 October 1998 (1-year follow up) to 19 February 2008 (10-year follow up) at 2 clinic centers in Canada.

Pre-assignment

Screening details:

A total of 449 subjects who met all of the inclusion and none of the exclusion criteria were included in the long-term immunogenicity analysis.

Period 1

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

Blinding implementation details:

Not applicable

Arms

Are arms mutually exclusive?	Yes
Arm title	Tdap Vaccine (Lot 21-11)

Arm description:

Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 21-11 on Day 0.

Arm type	Experimental
Investigational medicinal product name	Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Adacel®)
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

0.5 mL, intramuscular into the deltoid muscle, 1 injection on Day 0.

Arm title	Tdap Vaccine (Lot 22-11)

Arm description:

Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 22-11 on Day 0.

Arm type	Experimental
Investigational medicinal product name	Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Adacel®)
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

0.5 mL, intramuscular into the deltoid muscle, 1 injection on Day 0.

Arm title	Tdap Vaccine (Lot 23-11)

Arm description:

Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 23-11 on Day 0.

Arm type	Experimental

Investigational medicinal product name	Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Adacel®)
Investigational medicinal product code	
Other name	
Pharmaceutical forms	Suspension for injection
Routes of administration	Intramuscular use

Dosage and administration details:

0.5 mL, intramuscular into the deltoid muscle, 1 injection on Day 0.

Number of subjects in period 1	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)
Started	151	149	149
Completed	51	43	50
Not completed	100	106	99
Lost to follow-up	100	106	99

Baseline characteristics

Reporting groups	
Reporting group title	Tdap Vaccine (Lot 21-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 21-11 on Day 0.	
Reporting group title	Tdap Vaccine (Lot 22-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 22-11 on Day 0.	
Reporting group title	Tdap Vaccine (Lot 23-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 23-11 on Day 0.	

Reporting group values	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)
Number of subjects	151	149	149
Age categorical 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)	0	0	0
Adults (18-64 years)	151	149	149
From 65-84 years	0	0	0
85 years and over	0	0	0
Age continuous Units: years			
arithmetic mean	34.1	33.7	33.6
standard deviation	± 10.4	± 10.6	± 10
Gender categorical Units: Subjects			
Female	108	104	92
Male	43	45	57

Reporting group values	Total		
Number of subjects	449		
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)	449		

From 65-84 years	0		
85 years and over	0		

Age continuous			
Units: years			
arithmetic mean			
standard deviation	-		
Gender categorical			
Units: Subjects			
Female	304		
Male	145		

Subject analysis sets

Subject analysis set title	Combined Tdap Vaccine
Subject analysis set type	Full analysis

Subject analysis set description:

Subjects who received 1 of 3 lots of Tdap Vaccine on Day 0 and returned for the long-term immunogenicity follow-up visits to provide blood samples at 1, 3, 5, 8, and 10 years post-vaccination.

Reporting group values	Combined Tdap Vaccine		
Number of subjects	449		
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)	449		
From 65-84 years	0		
85 years and over	0		
Age continuous			
Units: years			
arithmetic mean	33.8		
standard deviation	± 10.3		
Gender categorical			
Units: Subjects			
Female	304		
Male	145		

End points

End points reporting groups

Reporting group title	Tdap Vaccine (Lot 21-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 21-11 on Day 0.	
Reporting group title	Tdap Vaccine (Lot 22-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 22-11 on Day 0.	
Reporting group title	Tdap Vaccine (Lot 23-11)
Reporting group description:	
Subjects received 1 dose of Tdap vaccine (ADACEL®) Lot 23-11 on Day 0.	
Subject analysis set title	Combined Tdap Vaccine
Subject analysis set type	Full analysis
Subject analysis set description:	
Subjects who received 1 of 3 lots of Tdap Vaccine on Day 0 and returned for the long-term immunogenicity follow-up visits to provide blood samples at 1, 3, 5, 8, and 10 years post-vaccination.	

Primary: Percentage of Subjects with Seroprotection to Tetanus and Diphtheria Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point title	Percentage of Subjects with Seroprotection to Tetanus and Diphtheria Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®[1]
End point description:	
Anti-Diphtheria antibody responses were assessed using the micro metabolic inhibition test (MIT). Anti-Tetanus antibody responses were assessed using enzyme-linked immunosorbent assay (ELISA). Seroprotection for diphtheria was defined as titers ≥ 0.01 IU/mL and ≥ 0.1 IU/mL. Seroprotection for tetanus was defined as titers ≥ 0.01 EU/mL and ≥ 0.1 EU/mL.	
End point type	Primary
End point timeframe:	
Day 0 (pre-vaccination) and 1 month and 1, 3, 5, 8, and 10 years post-vaccination	

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: Descriptive analyses were performed, based on the vaccine groups from the primary series for the long term follow-up period.

End point values	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)	Combined Tdap Vaccine
Subject group type	Reporting group	Reporting group	Reporting group	Subject analysis set
Number of subjects analysed	151	149	149	449
Units: Percentage of subjects				
number (not applicable)				
Diphtheria; ≥ 0.01 IU/mL; Pre-injection	84.1	79.2	79.9	81.1
Diphtheria; ≥ 0.01 IU/mL; 1 month Post-injection	98.7	97.3	98	98
Diphtheria; ≥ 0.01 IU/mL; 1 year Post-injection	95.5	96.9	98.5	97
Diphtheria; ≥ 0.01 IU/mL; 3 year Post-injection	97	98.5	95.7	97
Diphtheria; ≥ 0.01 IU/mL; 5 year Post-injection	90	96.4	93.5	93.3

Diphtheria; ≥ 0.01 IU/mL; 8 year Post-injection	92	96	96.1	94.7
Diphtheria; ≥ 0.01 IU/mL; 10 year Post-injection	85.1	97.5	95.8	92.6
Tetanus; ≥ 0.01 EU/mL; Pre-injection	98.7	98.6	99.3	98.9
Tetanus; ≥ 0.01 EU/mL; 1 month Post-injection	100	100	100	100
Tetanus; ≥ 0.01 EU/mL; 1 year Post-injection	100	100	100	100
Tetanus; ≥ 0.01 EU/mL; 3 year Post-injection	100	100	100	100
Tetanus; ≥ 0.01 EU/mL; 5 year Post-injection	100	100	100	100
Tetanus; ≥ 0.01 EU/mL; 8 year Post-injection	100	100	98	99.3
Tetanus; ≥ 0.01 EU/mL; 10 year Post-injection	100	100	97.8	99.2
Diphtheria; ≥ 0.1 IU/mL; Pre-injection	31.8	26.8	26.2	28.3
Diphtheria; ≥ 0.1 IU/mL; 1 month Post-injection	84.8	85.7	84.5	85
Diphtheria; ≥ 0.1 IU/mL; 1 year Post-injection	63.6	71.9	67.6	67.7
Diphtheria; ≥ 0.1 IU/mL; 3 year Post-injection	59.7	59.1	61.4	60.1
Diphtheria; ≥ 0.1 IU/mL; 5 year Post-injection	61.7	44.6	50	52.2
Diphtheria; ≥ 0.1 IU/mL; 8 year Post-injection	56	48	54.9	53
Diphtheria; ≥ 0.1 IU/mL; 10 year Post-injection	51.1	40	54.2	48.9
Tetanus; ≥ 0.1 EU/mL; Pre-injection	97.4	95.9	97.3	96.9
Tetanus; ≥ 0.1 EU/mL; 1 month Post-injection	100	100	100	100
Tetanus; ≥ 0.1 EU/mL; 1 year Post-injection	100	100	100	100
Tetanus; ≥ 0.1 EU/mL; 3 year Post-injection	100	100	100	100
Tetanus; ≥ 0.1 EU/mL; 5 year Post-injection	100	100	98.4	99.4
Tetanus; ≥ 0.1 EU/mL; 8 year Post-injection	98	100	98	98.6
Tetanus; ≥ 0.1 EU/mL; 10 year Post-injection	100	100	97.8	99.2

Statistical analyses

No statistical analyses for this end point

Other pre-specified: Summary of Geometric Mean Titers of Anti-Tetanus and Anti-Diphtheria Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point title	Summary of Geometric Mean Titers of Anti-Tetanus and Anti-Diphtheria Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point description:

Anti-Diphtheria antibody responses were assessed using the micro metabolic inhibition test (MIT). Anti-

Tetanus antibody responses were assessed using enzyme-linked immunosorbent assay (ELISA).

End point type	Other pre-specified

End point timeframe:

Day 0 (pre-vaccination) and 1 month and 1, 3, 5, 8, and 10 years post-vaccination

End point values	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)	Combined Tdap Vaccine
Subject group type	Reporting group	Reporting group	Reporting group	Subject analysis set
Number of subjects analysed	151	149	149	449
Units: Titers (1/dil)				
geometric mean (confidence interval 95%)				
Diphtheria; Pre-injection	0.05 (0.04 to 0.07)	0.04 (0.03 to 0.05)	0.03 (0.02 to 0.04)	0.04 (0.03 to 0.05)
Diphtheria; 1 month Post-injection	0.93 (0.67 to 1.29)	0.84 (0.59 to 1.2)	0.83 (0.59 to 1.17)	0.86 (0.71 to 1.05)
Diphtheria; 1 year Post-injection	0.22 (0.14 to 0.33)	0.25 (0.17 to 0.36)	0.27 (0.18 to 0.4)	0.24 (0.19 to 0.31)
Diphtheria; 3 year Post-injection	0.15 (0.1 to 0.23)	0.15 (0.11 to 0.21)	0.16 (0.11 to 0.24)	0.16 (0.13 to 0.19)
Diphtheria; 5 year Post-injection	0.12 (0.07 to 0.19)	0.1 (0.07 to 0.15)	0.1 (0.07 to 0.16)	0.11 (0.08 to 0.14)
Diphtheria; 8 year Post-injection	0.13 (0.07 to 0.25)	0.12 (0.08 to 0.17)	0.13 (0.08 to 0.2)	0.13 (0.1 to 0.17)
Diphtheria; 10 year Post-injection	0.11 (0.06 to 0.2)	0.1 (0.06 to 0.16)	0.09 (0.06 to 0.14)	0.1 (0.07 to 0.13)
Tetanus; Pre-injection	1.11 (0.92 to 1.34)	1.1 (0.88 to 1.37)	1.08 (0.9 to 1.31)	1.1 (0.98 to 1.23)
Tetanus; 1 month Post-injection	16.78 (14.84 to 18.97)	16.67 (14.58 to 19.06)	14.82 (12.76 to 17.21)	16.07 (14.86 to 17.37)
Tetanus; 1 year Post-injection	4.61 (3.8 to 5.59)	4.26 (3.52 to 5.17)	3.83 (3.14 to 4.66)	4.22 (3.77 to 4.71)
Tetanus; 3 year Post-injection	2.38 (1.98 to 2.86)	2.48 (2.03 to 3.02)	2.3 (1.87 to 2.83)	2.38 (2.13 to 2.67)
Tetanus; 5 year Post-injection	2.56 (1.95 to 3.36)	2.95 (2.35 to 3.7)	2.5 (1.88 to 3.34)	2.65 (2.28 to 3.09)
Tetanus; 8 year Post-injection	2.73 (1.93 to 3.85)	3.54 (2.69 to 4.66)	2.46 (1.63 to 3.7)	2.86 (2.35 to 3.49)
Tetanus; 10 year Post-injection	1.93 (1.41 to 2.66)	3.06 (2.13 to 4.4)	1.47 (0.98 to 2.22)	2.01 (1.63 to 2.49)

Statistical analyses

No statistical analyses for this end point

Other pre-specified: Summary of Geometric Mean Titers of Anti-Pertussis Antibodies Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point title	Summary of Geometric Mean Titers of Anti-Pertussis Antibodies Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point description:

Anti-Pertussis (Pertussis toxoid, Filamentous Hemagglutinin, Pertactin, and Fimbriae types 2 and 3) antibody responses were assessed using enzyme-linked immunosorbent assay (ELISA).

End point type	Other pre-specified

End point timeframe:

Day 0 (pre-vaccination) and 1 month and 1, 3, 5, 8, and 10 years post-vaccination

End point values	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)	Combined Tdap Vaccine
Subject group type	Reporting group	Reporting group	Reporting group	Subject analysis set
Number of subjects analysed	151	149	149	449
Units: Titers (1/dil)				
geometric mean (confidence interval 95%)				
Pertussis toxoid; Pre-injection	8.82 (7.07 to 11)	7.66 (6.11 to 9.59)	10.5 (8.49 to 12.99)	8.92 (7.86 to 10.12)
Pertussis toxoid; 1 month Post-injection	147.08 (126.85 to 170.54)	168.29 (145.32 to 194.88)	120.63 (105.17 to 138.35)	144.02 (132.48 to 156.57)
Pertussis toxoid; 1 year Post-injection	51.52 (41.07 to 64.62)	63.41 (49.94 to 80.52)	51.58 (41.74 to 63.74)	55.14 (48.48 to 62.71)
Pertussis toxoid; 3 year Post-injection	49.11 (37.66 to 64.06)	57.92 (43.88 to 76.46)	41.65 (32.19 to 53.89)	49.12 (42.16 to 57.23)
Pertussis toxoid; 5 year Post-injection	39.84 (31.41 to 50.54)	56.72 (44.55 to 72.21)	37.8 (30.24 to 47.25)	43.85 (38.31 to 50.19)
Pertussis toxoid; 8 year Post-injection	25.15 (19.32 to 32.74)	21.66 (16.18 to 28.98)	23.82 (17.7 to 32.06)	23.47 (19.97 to 27.57)
Pertussis toxoid; 10 year Post-injection	25.91 (19.56 to 34.32)	18.56 (12.84 to 26.83)	18.07 (13.01 to 25.1)	20.6 (17.12 to 24.78)
Filamentous hemagglutinin; Pre-injection	22.64 (18.29 to 28.03)	23.59 (19.63 to 28.36)	24.87 (20.06 to 30.84)	23.68 (21.06 to 26.63)
Filamentous hemagglutinin; 1 month Post-injection	311.86 (271.8 to 357.82)	327.8 (286.94 to 374.48)	360.42 (311.29 to 417.3)	332.62 (307.07 to 360.3)
Filamentous hemagglutinin; 1 year Post-injection	105.55 (84.49 to 131.87)	101.41 (81.01 to 126.94)	132.09 (109.61 to 159.18)	112.44 (99.62 to 126.92)
Filamentous hemagglutinin; 3 year Post-injection	59.06 (47.57 to 73.32)	58.25 (47.58 to 71.32)	74.96 (59.46 to 94.51)	63.7 (56.25 to 72.13)
Filamentous hemagglutinin; 5 year Post-injection	40.5 (32.44 to 50.56)	50.75 (41.27 to 62.41)	51.96 (41.68 to 64.78)	47.46 (41.92 to 53.72)
Filamentous hemagglutinin; 8 year Post-injection	52.91 (41.2 to 67.95)	55.33 (45.25 to 67.65)	75.04 (58.92 to 95.58)	60.37 (52.83 to 68.99)
Filamentous hemagglutinin; 10 year Post-injection	38.35 (29.7 to 49.52)	37.31 (29.6 to 47.04)	43.07 (32.33 to 57.38)	39.63 (34.16 to 45.96)
Pertactin; Pre-injection	5.83 (4.38 to 7.76)	4.27 (3.26 to 5.59)	5.27 (3.92 to 7.1)	5.09 (4.32 to 5.99)
Pertactin; 1 month Post-injection	286.16 (225.87 to 362.54)	347.4 (273.86 to 440.7)	217.67 (165.67 to 285.99)	278.58 (241.19 to 321.76)
Pertactin; 1 year Post-injection	81.07 (54.69 to 120.17)	87.04 (60.08 to 126.08)	68.78 (48.5 to 97.56)	78.45 (63.52 to 96.91)
Pertactin; 3 year Post-injection	79.99 (57.27 to 111.74)	76.76 (55.72 to 105.76)	79.01 (55.21 to 113.08)	78.56 (64.85 to 95.18)
Pertactin; 5 year Post-injection	36.56 (24.54 to 54.47)	45.05 (30.44 to 66.67)	34.07 (22.44 to 51.73)	38.17 (30.35 to 48.01)

Pertactin; 8 year Post-injection	37.41 (25.94 to 53.94)	47.27 (32.63 to 68.46)	43.88 (28.51 to 67.52)	42.59 (34.15 to 53.12)
Pertactin; 10 year Post-injection	43.18 (29.25 to 63.74)	35.91 (23.55 to 54.75)	41.72 (26.88 to 64.75)	40.38 (31.9 to 51.11)
Fimbriae types 2 and 3; Pre-injection	22.31 (17.43 to 28.55)	18.76 (14.01 to 25.12)	19.35 (14.26 to 26.27)	20.09 (17.09 to 23.62)
Fimbriae types 2 and 3; 1 month Post-injection	1314.62 (1097.33 to 1574.94)	1048.31 (844.83 to 1300.81)	690.27 (557.86 to 854.1)	985.27 (874.58 to 1109.97)
Fimbriae types 2 and 3; 1 year Post-injection	319.3 (247.19 to 412.43)	338.34 (248.93 to 459.85)	251.7 (188.03 to 336.92)	300.08 (254.99 to 353.15)
Fimbriae types 2 and 3; 3 year Post-injection	249.23 (194.9 to 318.69)	249.68 (183.89 to 399.01)	194.11 (141.26 to 266.73)	229.44 (194.23 to 271.04)
Fimbriae types 2 and 3; 5 year Post-injection	205.51 (153.54 to 275.06)	226.5 (159.48 to 321.69)	160.79 (114.47 to 225.84)	194.9 (161.63 to 235.02)
Fimbriae types 2 and 3; 8 year Post-injection	147.85 (113.86 to 191.97)	180.23 (129.37 to 251.08)	133.39 (95.38 to 186.54)	152.45 (127.76 to 181.92)
Fimbriae types 2 and 3; 10 year Post-injection	130.67 (97.63 to 174.9)	145.36 (98.48 to 214.55)	113.72 (81.71 to 158.26)	128.43 (106.32 to 155.13)

Statistical analyses

No statistical analyses for this end point

Other pre-specified: Percentage of Subjects with Seropositivity to Pertussis antigens Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point title	Percentage of Subjects with Seropositivity to Pertussis antigens Following Vaccination with Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine Adsorbed (Tdap) - ADACEL®

End point description:

Anti-Pertussis (Pertussis toxoid, Filamentous Hemagglutinin, Pertactin, and Fimbriae types 2 and 3) antibody responses were assessed using enzyme-linked immunosorbent assay (ELISA). Seropositivity was defined as subjects with titers ≥ 5 EU/mL for Pertussis Toxoid, ≥ 3 EU/mL for Filamentous Hemagglutinin, ≥ 17 EU/mL for Fimbriae types 2 and 3, and ≥ 3 EU/mL for Pertactin at 1 month and 1, 3, 5 years post-vaccination; and with titers ≥ 4 EU/mL for Pertussis Toxoid, ≥ 3 EU/mL for Filamentous Hemagglutinin, ≥ 4 EU/mL for Fimbriae types 2 and 3 and Pertactin at 8 and 10 years post-vaccination.

End point type	Other pre-specified

End point timeframe:

Day 0 (pre-vaccination) and 1 month and 1, 3, 5, 8, and 10 years post-vaccination

End point values	Tdap Vaccine (Lot 21-11)	Tdap Vaccine (Lot 22-11)	Tdap Vaccine (Lot 23-11)	Combined Tdap Vaccine
Subject group type	Reporting group	Reporting group	Reporting group	Subject analysis set
Number of subjects analysed	151	149	149	449
Units: Percentage of subjects				
number (not applicable)				
Pertussis toxoid; Pre-injection	68.5	62.3	77.6	69.5

Pertussis toxoid; 1 month Post-injection	100	100	100	100
Pertussis toxoid; 1 year Post-injection	98.5	100	98.5	99
Pertussis toxoid; 3 year Post-injection	97.1	97.1	94.3	96.2
Pertussis toxoid; 5 year Post-injection	96.8	100	98.5	98.4
Pertussis toxoid; 8 year Post-injection	97.9	92.2	92.2	94
Pertussis toxoid; 10 year Post-injection	97.6	88.9	86.7	91.1
Filamentous hemagglutinin; Pre-injection	92.1	95.3	93.3	93.5
Filamentous hemagglutinin; 1 month Post-injection	100	100	100	100
Filamentous hemagglutinin; 1 year Post-injection	100	98.5	100	99.5
Filamentous hemagglutinin; 3 year Post-injection	100	100	100	100
Filamentous hemagglutinin; 5 year Post-injection	100	100	100	100
Filamentous hemagglutinin; 8 year Post-injection	100	100	100	100
Filamentous hemagglutinin; 10 year Post-injection	100	100	100	100
Pertactin; Pre-injection	63.6	57.7	64.4	61.9
Pertactin; 1 month Post-injection	99.3	100	98.6	99.3
Pertactin; 1 year Post-injection	95.5	100	98.5	98
Pertactin; 3 year Post-injection	100	100	98.6	99.5
Pertactin; 5 year Post-injection	95.2	98.4	90.8	94.7
Pertactin; 8 year Post-injection	92.6	100	90.6	94.3
Pertactin; 10 year Post-injection	94.1	100	90	94.4
Fimbriae types 2 and 3; Pre-injection	57.6	54.4	60.4	57.5
Fimbriae types 2 and 3; 1 month Post-injection	100	99.3	99.3	99.6
Fimbriae types 2 and 3; 1 year Post-injection	100	95.4	97.1	97.5
Fimbriae types 2 and 3; 3 year Post-injection	98.5	94.3	92.8	95.2
Fimbriae types 2 and 3; 5 year Post-injection	98.4	93.4	92.3	94.7
Fimbriae types 2 and 3; 8 year Post-injection	100	100	98.1	99.4
Fimbriae types 2 and 3; 10 year Post-injection	100	97.6	98	98.6

Statistical analyses

No statistical analyses for this end point

Adverse events

Adverse events information[1]	
Timeframe for reporting adverse events: Safety was not assessed in this 10-year immunogenicity follow-up study.	
Assessment type	Non-systematic

Dictionary used	
Dictionary name	MedDRA
Dictionary version	10

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

Notes:

[1] - There are no non-serious adverse events recorded for these results. It is expected that there will be at least one non-serious adverse event reported.
Justification: Safety end points were not assessed in the 10-year follow-up study.

More information

Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? Yes

Date	Amendment
23 May 2001	Allowed for the collection of additional blood samples for long-term follow-up serology studies.
23 June 2005	The major changes included adding the 8-year follow-up study, including details of collection, storage, and and shipment of long-term follow up blood samples and sera, providing details of the study population for the long-term follow-up studies (including inclusion/exclusion criteria), and clarified the statistical analysis for the long-term follow-up studies.

Notes:

Interruptions (globally)

Were there any global interruptions to the trial? No

Limitations and caveats

None reported