# Clinical trial results:
# Immunogenicity and Safety of the Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) Administered at 2, 3, and 4 Months of Age and Followed by a Booster Dose at 18 Months of age in Healthy Infants in China, versus Commercially Available Oral Poliomyelitis Vaccine

## Summary

| | |
|---|---|
| EudraCT number | 2015-005182-23 |
| Trial protocol | Outside EU/EEA |
| Global end of trial date | 03 March 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 | IPV13 |

### Additional study identifiers

| | |
|---|---|
| ISRCTN number | - |
| ClinicalTrials.gov id (NCT number) | NCT00348387 |
| WHO universal trial number (UTN) | - |

Notes:

### Sponsors

| | |
|---|---|
| Sponsor organisation name | Sanofi Pasteur China |
| Sponsor organisation address | 6th floor, No. 112 Jian Guo Lu, Chaoyang District, Beijing, China, 100022 |
| Public contact | Local Medical Director, Sanofi Pasteur China, 86 10 6568 5588, Reinel.Zhang@sanofipasteur.com |
| Scientific contact | Local Medical Director, Sanofi Pasteur China, 86 10 6568 5588, Reinel.Zhang@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? | Yes |
| 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 | 14 November 2008 |
| Is this the analysis of the primary completion data? | No |

| | |
|---|---|
| Global end of trial reached? | Yes |
| Global end of trial date | 03 March 2008 |
| Was the trial ended prematurely? | No |

Notes:

## General information about the trial

Main objective of the trial:

- To demonstrate the non-inferiority in terms of seroprotection rates (polio types 1, 2 and 3) of IMOVAX Polio™ versus commercially available OPV one month after the 3-dose primary vaccination.

Protection of trial subjects:

Only subjects that met all the study inclusion and none of the exclusion criteria were randomized and vaccinated in the study. Vaccinations were performed by qualified and trained study personnel. Subjects with allergy to any of the vaccine components were not vaccinated. After vaccination, subjects were also kept under clinical observation for 30 minutes to ensure their safety. Appropriate medical equipment was also available on site in case of any immediate allergic reactions.

Background therapy:

Not applicable

Evidence for comparator:

Not applicable

| | |
|---|---|
| Actual start date of recruitment | 21 June 2006 |
| 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 | China: 600 |
| Worldwide total number of subjects | 600 |
| 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) | 600 |
| Children (2-11 years) | 0 |
| Adolescents (12-17 years) | 0 |
| Adults (18-64 years) | 0 |

| | |
|---|---|
| From 65 to 84 years | 0 |
| 85 years and over | 0 |

## Subject disposition

### Recruitment

Recruitment details:

Study subjects were enrolled from 21 June 2006 to 27 September 2006 at 1 clinic center in China.

### Pre-assignment

Screening details:

A total of 600 infants met all of the inclusion and none of the exclusion criteria were enrolled and vaccinated in the primary vaccination phase of this study; 267 infants in the IPV group received the booster vaccination.

### Period 1

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

Blinding implementation details:

Not applicable

### Arms

| | |
|---|---|
| Are arms mutually exclusive? | Yes |
| **Arm title** | IMOVAX Polio™ Group |

Arm description:

Infants received the IMOVAX Polio™ (IPV) vaccine at 2, 3, and 4 months of age and a booster dose of IPV vaccine 14-16 months after the three-dose primary vaccination.

| | |
|---|---|
| Arm type | Experimental |
| Investigational medicinal product name | IPV vaccine (IMOVAX Polio™) |
| 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 anterolateral area of the right thigh, 1 injection each at 2, 3, and 4 months of age.

| | |
|---|---|
| **Arm title** | Oral Poliomyelitis Vaccine Group |

Arm description:

Infants received the commercially available Oral Poliomyelitis Vaccine (OPV) vaccine at 2, 3, and 4 months of age.

| | |
|---|---|
| Arm type | Active comparator |
| Investigational medicinal product name | Poliomyelitis Vaccine in Dragee Candy (Human Diploid Cell), Live OPV |
| Investigational medicinal product code | |
| Other name | |
| Pharmaceutical forms | Oral solution |
| Routes of administration | Oral use |

Dosage and administration details:

1 g dragee, oral, 1 administration each at 2, 3, and 4 months of age.

| **Number of subjects in period 1** | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group |
|---|---|---|
| Started | 300 | 300 |
| Completed | 264 | 282 |
| Not completed | 36 | 18 |
| Consent withdrawn by subject | 29 | 14 |
| Adverse event, non-fatal | 1 | 1 |
| Serious adverse event | 1 | - |
| Lost to follow-up | 4 | 3 |
| Protocol deviation | 1 | - |

## Baseline characteristics

| Reporting groups | |
|---|---|
| Reporting group title | IMOVAX Polio™ Group |
| Reporting group description: | |
| Infants received the IMOVAX Polio™ (IPV) vaccine at 2, 3, and 4 months of age and a booster dose of IPV vaccine 14-16 months after the three-dose primary vaccination. | |
| Reporting group title | Oral Poliomyelitis Vaccine Group |
| Reporting group description: | |
| Infants received the commercially available Oral Poliomyelitis Vaccine (OPV) vaccine at 2, 3, and 4 months of age. | |

| Reporting group values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | Total |
|---|---|---|---|
| Number of subjects | 300 | 300 | 600 |
| 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) | 300 | 300 | 600 |
| Children (2-11 years) | 0 | 0 | 0 |
| Adolescents (12-17 years) | 0 | 0 | 0 |
| Adults (18-64 years) | 0 | 0 | 0 |
| From 65-84 years | 0 | 0 | 0 |
| 85 years and over | 0 | 0 | 0 |
| Age continuous<br>Units: days | | | |
| arithmetic mean | 64.7 | 64.9 | |
| standard deviation | ± 3 | ± 2.9 | - |
| Gender categorical<br>Units: Subjects | | | |
| Female | 132 | 128 | 260 |
| Male | 168 | 172 | 340 |

## End points

### End points reporting groups

| | |
|---|---|
| Reporting group title | IMOVAX Polio™ Group |
| Reporting group description: | |
| Infants received the IMOVAX Polio™ (IPV) vaccine at 2, 3, and 4 months of age and a booster dose of IPV vaccine 14-16 months after the three-dose primary vaccination. | |
| Reporting group title | Oral Poliomyelitis Vaccine Group |
| Reporting group description: | |
| Infants received the commercially available Oral Poliomyelitis Vaccine (OPV) vaccine at 2, 3, and 4 months of age. | |

### Primary: Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |
| End point description: | |
| Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Seroprotection was defined as Anti-Poliovirus type 1, 2, and 3 antibody titers ≥ 8 (1/dil). | |
| End point type | Primary |
| End point timeframe: | |
| 1 month post-dose 3 primary vaccination | |

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 186 | 193 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1 | 100 | 97.41 | | |
| Anti-Poliovirus 2 | 97.31 | 100 | | |
| Anti-Poliovirus 3 | 98.92 | 95.34 | | |

### Statistical analyses

| | |
|---|---|
| **Statistical analysis title** | Non-inferiority; Anti-Poliovirus 1 |
| Statistical analysis description: | |
| This was a non-inferiority analysis of IMOVAX Polio™ compared to OPV for Anti-Poliovirus type 1. | |
| Comparison groups | IMOVAX Polio™ Group v Oral Poliomyelitis Vaccine Group |

| | |
|---|---|
| Number of subjects included in analysis | 379 |
| Analysis specification | Pre-specified |
| Analysis type | non-inferiority[1] |
| Parameter estimate | IPV-OPV |
| Point estimate | 2.59 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | 0.08 |
| upper limit | 5.92 |

Notes:

[1] - Non-inferiority was established if the lower limit of the two-sided 95% CI for seroprotection rate was greater than -10%. IMOVAX Polio™ was non-inferior to OPV for Anti-Poliovirus type 1.

| **Statistical analysis title** | Non-inferiority; Anti-Poliovirus 2 |
|---|---|

Statistical analysis description:

This was a non-inferiority analysis of IMOVAX Polio™ compared to OPV for Anti-Poliovirus type 2.

| | |
|---|---|
| Comparison groups | IMOVAX Polio™ Group v Oral Poliomyelitis Vaccine Group |
| Number of subjects included in analysis | 379 |
| Analysis specification | Pre-specified |
| Analysis type | non-inferiority[2] |
| Parameter estimate | IPV-OPV |
| Point estimate | -2.69 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | -6.14 |
| upper limit | -0.21 |

Notes:

[2] - Non-inferiority was established if the lower limit of the two-sided 95% CI for seroprotection rate was greater than -10%. IMOVAX Polio™ was non-inferior to OPV for Anti-Poliovirus type 2.

| **Statistical analysis title** | Non-inferiority; Anti-Poliovirus 3 |
|---|---|

Statistical analysis description:

This was a non-inferiority analysis of IMOVAX Polio™ compared to OPV for Anti-Poliovirus type 3.

| | |
|---|---|
| Comparison groups | IMOVAX Polio™ Group v Oral Poliomyelitis Vaccine Group |
| Number of subjects included in analysis | 379 |
| Analysis specification | Pre-specified |
| Analysis type | non-inferiority[3] |
| Parameter estimate | IPV-OPV |
| Point estimate | 3.58 |
| Confidence interval | |
| level | 95 % |
| sides | 2-sided |
| lower limit | 0.06 |
| upper limit | 7.62 |

Notes:

[3] - Non-inferiority was established if the lower limit of the two-sided 95% CI for seroprotection rate was greater than -10%. IMOVAX Polio™ was non-inferior to OPV for Anti-Poliovirus type 3.

## Secondary: Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Before and Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis

| Vaccine | |
|---|---|
| End point title | Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Before and Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Pre-Primary, Adjusted Pre-Primary, and Post-Primary Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 186 | 193 | | |
| Units: Titers (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; Pre-Primary | 8.8 (7.5 to 10.4) | 9.3 (8 to 10.9) | | |
| Anti-Poliovirus 1; Adjusted Pre-Primary | 0.8 (0.7 to 1) | 0.8 (0.7 to 1) | | |
| Anti-Poliovirus 1; Post-Primary | 151.2 (129.5 to 176.6) | 1089.5 (892.1 to 1330.5) | | |
| Anti-Poliovirus 2; Pre-Primary | 8.3 (7.1 to 9.7) | 7.6 (6.7 to 8.7) | | |
| Anti-Poliovirus 2; Adjusted Pre-Primary | 0.8 (0.6 to 0.9) | 0.7 (0.6 to 0.8) | | |
| Anti-Poliovirus 2; Post-Primary | 86.7 (74.3 to 101.1) | 538.2 (470 to 616.3) | | |
| Anti-Poliovirus 3; Pre-Primary | 5.2 (4.7 to 5.7) | 5.2 (4.8 to 5.7) | | |
| Anti-Poliovirus 3; Adjusted Pre-Primary | 0.5 (0.4 to 0.5) | 0.5 (0.4 to 0.5) | | |
| Anti-Poliovirus 3; Post-Primary | 211.3 (179.6 to 248.6) | 203.7 (167.9 to 247.1) | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titer Ratios of Anti-polio 1, 2, and 3 Antibodies Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| End point title | Geometric Mean Titer Ratios of Anti-polio 1, 2, and 3 Antibodies Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Geometric mean titer ratios (GMTR) and adjusted GMTR are reported. Adjusted was defined as a 4-fold increase calculated with individual titers adjusted on the level of maternal anti-Polio antibodies in subjects' serum at V01 and their estimated levels that would have been observed at V04 if vaccination had not been performed.

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

End point timeframe:

Day 0 (pre-vaccination) and Day 30 post-primary vaccinations

| **End point values** | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 186 | 193 | | |
| Units: Titer ratios (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; Individual Ratio | 17.1 (13.5 to 21.7) | 119.4 (92.4 to 154.4) | | |
| Anti-Poliovirus 1; Individual Adjusted Ratio | 187.1 (147.8 to 236.9) | 1309 (1012.6 to 1692.2) | | |
| Anti-Poliovirus 2; Individual Ratio | 10.4 (8.2 to 13.2) | 70.8 (58.9 to 85) | | |
| Anti-Poliovirus 2; Individual Adjusted Ratio | 113.4 (89.4 to 143.9) | 774.8 (643.3 to 933.1) | | |
| Anti-Poliovirus 3; Individual Ratio | 40.9 (33.6 to 49.8) | 38.6 (31.2 to 47.9) | | |
| Anti-Poliovirus 3; Individual Adjusted Ratio | 446.9 (367.1 to 544) | 422.9 (341.2 to 524.1) | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Seroprotection Against poliovirus 1, 2 and 3 Before and Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| End point title | Percentage of Infant Subjects with Seroprotection Against poliovirus 1, 2 and 3 Before and Following A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Seroprotection was defined as Anti-Poliovirus type 1, 2, and 3 antibody titers ≥ 8 (1/dil).

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

End point timeframe:

Pre-Primary, Adjusted Pre-Primary, Post-Primary Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 186 | 193 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; Pre-Primary | 44.8 | 47.6 | | |
| Anti-Poliovirus 1; Adjusted Pre-Primary | 5.5 | 5.2 | | |
| Anti-Poliovirus 1; Post-Primary | 100 | 97.4 | | |
| Anti-Poliovirus 2; Pre-Primary | 39.2 | 40.3 | | |
| Anti-Poliovirus 2; Adjusted Pre-Primary | 4.4 | 1.6 | | |
| Anti-Poliovirus 2; Post-Primary | 97.3 | 100 | | |
| Anti-Poliovirus 3; Pre-Primary | 18.2 | 17.3 | | |
| Anti-Poliovirus 3; Adjusted Pre-Primary | 0 | 0.5 | | |
| Anti-Poliovirus 3; Post-Primary | 98.9 | 95.3 | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with ≥4-fold increase in Antibodies Against Poliovirus 1, 2 and 3 After A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio) or Commercially Available Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Percentage of Infant Subjects with ≥4-fold increase in Antibodies Against Poliovirus 1, 2 and 3 After A Three-Dose Primary Vaccination series with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio) or Commercially Available Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. A 4-fold increase was calculated with individual titers adjusted on the level of maternal anti-Polio antibodies in subjects' serum at V01 and their estimated levels that would have been observed at V04 if vaccination had not been performed.

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

End point timeframe:

Post-Primary/Pre-Primary Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 186 | 193 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; Individual Ratio | 85.1 | 93.2 | | |
| Anti-Poliovirus 1; Individual Adjusted Ratio | 98.3 | 98.4 | | |
| Anti-Poliovirus 2; Individual Ratio | 75.7 | 97.9 | | |

| | | | | |
|---|---|---|---|---|
| Anti-Poliovirus 2; Individual Adjusted Ratio | 93.9 | 100 | | |
| Anti-Poliovirus 3; Individual Ratio | 95.6 | 92.1 | | |
| Anti-Poliovirus 3; Individual Adjusted Ratio | 99.4 | 97.9 | | |

### Statistical analyses

No statistical analyses for this end point

### Secondary: Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies in Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) Before and After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies in Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) Before and After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Pre-Primary and Post-Primary Vaccination

| **End point values** | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 300 | 300 | | |
| Units: Titers (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; All Subjects; Pre-Primary | 8.8 (7.5 to 10.4) | 9.3 (8 to 10.9) | | |
| Anti-Poliovirus 1; All Subjects; Post-Primary | 151.2 (129.5 to 176.6) | 1089.5 (892.1 to 1330.5) | | |
| Anti-Poliovirus 1; < 8 (1/dil); Pre-Primary | 4 (4 to 4) | 4 (4 to 4) | | |
| Anti-Poliovirus 1; < 8 (1/dil); Post-Primary | 176.1 (144.3 to 214.9) | 1116.7 (825.1 to 1511.3) | | |
| Anti-Poliovirus 1; ≥ 8 (1/dil); Pre-Primary | 23.6 (18.9 to 29.4) | 23.5 (19.3 to 28.6) | | |
| Anti-Poliovirus 1; ≥ 8 (1/dil); Post-Primary | 125.9 (97.6 to 162.5) | 1068.9 (816.4 to 1399.5) | | |
| Anti-Poliovirus 2; All Subjects; Pre-Primary | 8.3 (7.1 to 9.7) | 7.6 (6.7 to 8.7) | | |
| Anti-Poliovirus 2; All Subjects; Post-Primary | 86.7 (74.3 to 101.1) | 538.2 (470 to 616.3) | | |
| Anti-Poliovirus 2; < 8 (1/dil); Pre-Primary | 4 (4 to 4) | 4 (4 to 4) | | |
| Anti-Poliovirus 2; < 8 (1/dil); Post-Primary | 100.3 (83.3 to 120.8) | 497.9 (418.5 to 592.4) | | |

| | | | | |
|---|---|---|---|---|
| Anti-Poliovirus 2; ≥ 8 (1/dil); Pre-Primary | 25.8 (20.6 to 32.3) | 19.6 (16.5 to 23.4) | | |
| Anti-Poliovirus 2; ≥ 8 (1/dil); Post-Primary | 68.3 (52.6 to 88.7) | 601.5 (480.9 to 752.3) | | |
| Anti-Poliovirus 3; All Subjects; Pre-Primary | 5.2 (4.7 to 5.7) | 5.2 (4.8 to 5.7) | | |
| Anti-Poliovirus 3; All Subjects; Post-Primary | 211.3 (179.6 to 248.6) | 203.7 (167.9 to 247.1) | | |
| Anti-Poliovirus 3; < 8 (1/dil); Pre-Primary | 4 (4 to 4) | 4 (4 to 4) | | |
| Anti-Poliovirus 3; < 8 (1/dil); Post-Primary | 218.2 (180.7 to 263.4) | 202.5 (163.2 to 251.4) | | |
| Anti-Poliovirus 3; ≥ 8 (1/dil); Pre-Primary | 17.2 (13.2 to 22.3) | 18.8 (14.6 to 24.3) | | |
| Anti-Poliovirus 3; ≥ 8 (1/dil); Post-Primary | 194.3 (135.5 to 278.6) | 197.5 (122.7 to 317.8) | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies in Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies in Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Geometric mean titer ratios (GMTR) and adjusted GMTR are reported. Adjusted was defined as a 4-fold increase calculated with individual titers adjusted on the level of maternal anti-Polio antibodies in subjects' serum at V01 and their estimated levels that would have been observed at V04 if vaccination had not been performed.

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

End point timeframe:

Day 0 (pre-vaccination) and Day 30 post-primary vaccinations

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 300 | 300 | | |
| Units: Titer ratios (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; GMTR; All Subjects | 17.1 (13.5 to 21.7) | 119.4 (92.4 to 154.4) | | |
| Anti-Poliovirus 1; GMTR; < 8 (1/dil) | 44 (36.1 to 53.7) | 279.2 (206.3 to 377.8) | | |
| Anti-Poliovirus 1; GMTR; ≥ 8 (1/dil) | 5.3 (3.9 to 7.4) | 47.4 (33.9 to 66.2) | | |

| | | | | |
|---|---|---|---|---|
| Anti-Poliovirus 1; Adjusted GMTR; All Subjects | 187.1 (147.8 to 236.9) | 1309 (1012.6 to 1692.2) | | |
| Anti-Poliovirus 1; Adjusted GMTR; < 8 (1/dil) | 477.7 (390.6 to 584.1) | 3081.2 (2282.4 to 4159.6) | | |
| Anti-Poliovirus 1; Adjusted GMTR; ≥ 8 (1/dil) | 58.8 (42.7 to 81.1) | 515.4 (368.6 to 720.6) | | |
| Anti-Poliovirus 2; GMTR; All Subjects | 10.4 (8.2 to 13.2) | 70.8 (58.9 to 85) | | |
| Anti-Poliovirus 2; GMTR; < 8 (1/dil) | 25.1 (20.8 to 30.2) | 124.5 (104.6 to 148.1) | | |
| Anti-Poliovirus 2; GMTR; ≥ 8 (1/dil) | 2.6 (1.8 to 3.7) | 30.7 (22.9 to 41.1) | | |
| Anti-Poliovirus 2; Adjusted GMTR; All Subjects | 113.4 (89.4 to 143.9) | 774.8 (643.3 to 933.1) | | |
| Anti-Poliovirus 2; Adjusted GMTR; <8 (1/dil) | 271.7 (226.3 to 326.2) | 1365.6 (1145.3 to 1628.2) | | |
| Anti-Poliovirus 2; Adjusted GMTR; ≥ 8 (1/dil) | 28.9 (20.4 to 40.9) | 334.8 (248.7 to 450.5) | | |
| Anti-Poliovirus 3; GMTR; All Subjects | 40.9 (33.6 to 49.8) | 38.6 (31.2 to 47.9) | | |
| Anti-Poliovirus 3; GMTR; < 8 (1/dil) | 54.5 (45.2 to 65.9) | 50.6 (40.8 to 62.8) | | |
| Anti-Poliovirus 3; GMTR; ≥ 8 (1/dil) | 11.3 (6.9 to 18.4) | 10.3 (6.2 to 17.3) | | |
| Anti-Poliovirus 3; Adjusted GMTR; All Subjects | 446.9 (367.1 to 544) | 422.9 (341.2 to 524.1) | | |
| Anti-Poliovirus 3; Adjusted GMTR; < 8 (1/dil) | 593.6 (491.5 to 717) | 553.7 (446.9 to 685.9) | | |
| Anti-Poliovirus 3; Adjusted GMTR; ≥ 8 (1/dil) | 126.1 (77.8 to 204.3) | 113.7 (67.5 to 191.7) | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) with Seroprotection Against Poliovirus 1, 2 and 3 Before and After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Percentage of Infant Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) with Seroprotection Against Poliovirus 1, 2 and 3 Before and After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Pre-Primary and Post-Primary Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 300 | 300 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; All Subjects; Pre-Primary | 44.8 | 47.6 | | |
| Anti-Poliovirus 1; All Subjects; Post-Primary | 100 | 97.4 | | |
| Anti-Poliovirus 1; < 8 (1/dil); Pre-Primary | 0 | 0 | | |
| Anti-Poliovirus 1; < 8 (1/dil); Post-Primary | 100 | 96 | | |
| Anti-Poliovirus 1; ≥ 8 (1/dil); Pre-Primary | 100 | 100 | | |
| Anti-Poliovirus 1; ≥ 8 (1/dil); Post-Primary | 100 | 98.9 | | |
| Anti-Poliovirus 2; All Subjects; Pre-Primary | 39.2 | 40.3 | | |
| Anti-Poliovirus 2; All Subjects; Post-Primary | 97.3 | 100 | | |
| Anti-Poliovirus 2; < 8 (1/dil); Pre-Primary | 0 | 0 | | |
| Anti-Poliovirus 2; < 8 (1/dil); Post-Primary | 98.2 | 100 | | |
| Anti-Poliovirus 2; ≥ 8 (1/dil); Pre-Primary | 100 | 100 | | |
| Anti-Poliovirus 2; ≥ 8 (1/dil); Post-Primary | 95.8 | 100 | | |
| Anti-Poliovirus 3; All Subjects; Pre-Primary | 18.2 | 17.3 | | |
| Anti-Poliovirus 3; All Subjects; Post-Primary | 98.9 | 95.3 | | |
| Anti-Poliovirus 3; < 8 (1/dil); Pre-Primary | 0 | 0 | | |
| Anti-Poliovirus 3; < 8 (1/dil); Post-Primary | 98.6 | 95.6 | | |
| Anti-Poliovirus 3; ≥ 8 (1/dil); Pre-Primary | 100 | 100 | | |
| Anti-Poliovirus 3; ≥ 8 (1/dil); Post-Primary | 100 | 93.9 | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) with ≥4-Fold Increase in Antibodies Against Poliovirus 1, 2 and 3 After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Percentage of Infant Subjects with Pre-Primary Anti-Polio Titers of < 8 (1/dil) and ≥8 (1/dil) with ≥4-Fold Increase in Antibodies Against Poliovirus 1, 2 and 3 After Primary Vaccination with Inactivated Poliomyelitis Vaccine or Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Adjusted was defined as a 4-fold increase calculated with individual titers adjusted on the level of maternal anti-Polio antibodies in subjects' serum at V01 and their estimated levels that would have been observed at V04 if vaccination had not been performed.

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

End point timeframe:

Post-Primary Vaccination

| **End point values** | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 300 | 300 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; ≥ 4-fold increase; All Subjects | 85.1 | 93.2 | | |
| Anti-Poliovirus 1; ≥ 4-fold increase; < 8 (1/dil) | 100 | 96 | | |
| Anti-Poliovirus 1; ≥ 4-fold increase; ≥ 8 (1/dil) | 66.7 | 90.1 | | |
| Anti-Polio 1; Adj. ≥ 4-fold increase; All Subjects | 98.3 | 98.4 | | |
| Anti-Polio 1; Adj. ≥ 4-fold increase; < 8 (1/dil) | 100 | 98 | | |
| Anti-Polio 1; Adj. ≥ 4-fold increase; ≥ 8 (1/dil) | 96.3 | 98.9 | | |
| Anti-Poliovirus 2; ≥ 4-fold increase; All Subjects | 75.7 | 97.9 | | |
| Anti-Poliovirus 2; ≥ 4-fold increase; < 8 (1/dil) | 96.4 | 100 | | |
| Anti-Poliovirus 2; ≥ 4-fold increase; ≥ 8 (1/dil) | 43.7 | 94.8 | | |
| Anti-Polio 2; Adj. ≥ 4-fold increase; All Subjects | 93.9 | 100 | | |
| Anti-Polio 2; Adj. ≥ 4-fold increase; < 8 (1/dil) | 98.2 | 100 | | |
| Anti-Polio 2; Adj. ≥ 4-fold increase; ≥ 8 (1/dil) | 87.3 | 100 | | |
| Anti-Poliovirus 3; ≥ 4-fold increase; All Subjects | 95.6 | 92.1 | | |
| Anti-Poliovirus 3; ≥ 4-fold increase; < 8 (1/dil) | 98 | 95.6 | | |
| Anti-Poliovirus 3; ≥ 4-fold increase; ≥ 8 (1/dil) | 84.8 | 75.8 | | |
| Anti-Polio 3; Adj. ≥ 4-fold increase; All Subjects | 99.4 | 97.9 | | |
| Anti-Polio 3; Adj. ≥ 4-fold increase; < 8 (1/dil) | 99.3 | 98.7 | | |
| Anti-Polio 3; Adj. ≥ 4-fold increase; ≥ 8 (1/dil) | 100 | 93.9 | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Seroprotection was defined as Anti-Poliovirus type 1, 2, and 3 antibody titers ≥ 8 (1/dil).

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

End point timeframe:

Post-Primary and Pre-Booster Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 179 | 192 | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; Post-Primary | 100 | 97.4 | | |
| Anti-Poliovirus 1; Pre-Booster | 88.3 | 96.9 | | |
| Anti-Poliovirus 2; Post-Primary | 97.2 | 100 | | |
| Anti-Poliovirus 2; Pre-Booster | 83.2 | 99.5 | | |
| Anti-Poliovirus 3; Post-Primary | 98.9 | 94.8 | | |
| Anti-Poliovirus 3; Pre-Booster | 82.7 | 91.1 | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Post-Primary and Pre-Booster Vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 179 | 192 | | |
| Units: Titers (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; Post-Primary | 152.9 (130.2 to 179.5) | 1096.2 (896.2 to 1340.8) | | |
| Anti-Poliovirus 1; Pre-Booster | 44.3 (35.2 to 55.7) | 215.1 (177.1 to 261.2) | | |
| Anti-Poliovirus 2; Post-Primary | 86.7 (74.1 to 101.5) | 538.7 (470 to 617.4) | | |
| Anti-Poliovirus 2; Pre-Booster | 47.3 (34.3 to 65) | 175.5 (145 to 212.2) | | |
| Anti-Poliovirus 3; Post-Primary | 207.3 (175.8 to 244.4) | 196.4 (161 to 239.5) | | |
| Anti-Poliovirus 3; Pre-Booster | 45.6 (34.1 to 60.9) | 63.3 (51.6 to 77.8) | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| | |
|---|---|
| End point title | Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Pre-Booster Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Day 0 (pre-vaccination) and Day 30 post-primary vaccinations

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 179 | 192 | | |
| Units: Titer ratio (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1 | 0.3 (0.2 to 0.4) | 0.2 (0.2 to 0.2) | | |

| | | | | |
|---|---|---|---|---|
| Anti-Poliovirus 2 | 0.6 (0.4 to 0.8) | 0.3 (0.3 to 0.4) | | |
| Anti-Poliovirus 3 | 0.2 (0.2 to 0.3) | 0.3 (0.3 to 0.4) | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Post-Primary, Pre- and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)

| End point title | Percentage of Infant Subjects with Seroprotection Against Poliovirus 1, 2 and 3 Post-Primary, Pre- and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)[4] |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure. Seroprotection was defined as Anti-Poliovirus type 1, 2, and 3 antibody titers ≥ 8 (1/dil).

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

End point timeframe:

Post-Primary, Pre-Booster, and Post-Booster Vaccination

Notes:

[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: A booster vaccination was not administered in the OPV group; therefore, seroprotection data are not available for this group.

| End point values | IMOVAX Polio™ Group | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 176 | | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; Post-Primary | 100 | | | |
| Anti-Poliovirus 1; Pre-Booster | 88.1 | | | |
| Anti-Poliovirus 1; Post-Booster | 100 | | | |
| Anti-Poliovirus 2; Post-Primary | 97.2 | | | |
| Anti-Poliovirus 2; Pre-Booster | 83 | | | |
| Anti-Poliovirus 2; Post-Booster | 100 | | | |
| Anti-Poliovirus 3; Post-Primary | 98.9 | | | |
| Anti-Poliovirus 3; Pre-Booster | 82.4 | | | |
| Anti-Poliovirus 3; Post-Booster | 100 | | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Post-Primary, Pre- and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX

**Polio™)**

| End point title | Geometric Mean Titers of Anti-Polio 1, 2, and 3 Antibodies Post-Primary, Pre- and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)[5] |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Post-Primary, Pre-Booster, Post-Booster Vaccination

Notes:

[5] - 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: A booster vaccination was not administered in the OPV group; therefore, geometric mean titer data are not available for this group.

| **End point values** | IMOVAX Polio™ Group | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 176 | | | |
| Units: Titers (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; Post-Primary | 150.3 (128.5 to 175.7) | | | |
| Anti-Poliovirus 1; Pre-Booster | 44.5 (35.2 to 56.1) | | | |
| Anti-Poliovirus 1; Post-Booster | 2011.8 (1762.4 to 2296.6) | | | |
| Anti-Poliovirus 2; Post-Primary | 85.2 (72.8 to 99.8) | | | |
| Anti-Poliovirus 2; Pre-Booster | 47.8 (34.6 to 66.2) | | | |
| Anti-Poliovirus 2; Post-Booster | 1480.6 (1305.6 to 1679.1) | | | |
| Anti-Poliovirus 3; Post-Primary | 208.9 (176.9 to 246.7) | | | |
| Anti-Poliovirus 3; Pre-Booster | 45.7 (34 to 61.3) | | | |
| Anti-Poliovirus 3; Post-Booster | 4393.4 (3849.8 to 5013.7) | | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)

| End point title | Geometric Mean Titer Ratios of Anti-Polio 1, 2, and 3 Antibodies Post-Primary and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)[6] |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Day 0 (pre-vaccination) and Day 30 post-primary vaccinations and Day 0 (pre-vaccination) and Day 30 post-booster vaccination

Notes:

[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: A booster vaccination was not administered in the OPV group; therefore, geometric mean titer ratios data are not available for this group.

| **End point values** | IMOVAX Polio™ Group | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 176 | | | |
| Units: Titer ratio (1/dil) | | | | |
| geometric mean (confidence interval 95%) | | | | |
| Anti-Poliovirus 1; Post/Pre-Primary | 16.6 (13.1 to 21.2) | | | |
| Anti-Poliovirus 1; Post/Pre-Booster | 45.2 (34.9 to 58.7) | | | |
| Anti-Poliovirus 2; Post/Pre-Primary | 10.3 (8 to 13.1) | | | |
| Anti-Poliovirus 2; Post/Pre-Booster | 30.9 (22.5 to 42.6) | | | |
| Anti-Poliovirus 3; Post/Pre-Primary | 40.7 (33.2 to 49.8) | | | |
| Anti-Poliovirus 3; Post/Pre-Booster | 96.2 (69.1 to 133.9) | | | |

## Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with ≥4-Fold Increase in Antibodies Against Poliovirus 1, 2 and 3 Post-Primary and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)

| End point title | Percentage of Infant Subjects with ≥4-Fold Increase in Antibodies Against Poliovirus 1, 2 and 3 Post-Primary and Post-Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)[7] |
|---|---|

End point description:

Anti-Poliovirus types 1, 2, and 3 antibody titers were assayed by microneutralization on cell culture based on World Health Organization standardized procedure.

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

End point timeframe:

Post-Primary and Post-Booster Vaccination

Notes:

[7] - 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: A booster vaccination was not administered in the OPV group; therefore, data for subjects with ≥ 4-fold increase in antibodies are not available for this group.

| End point values | IMOVAX Polio™ Group | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 176 | | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Anti-Poliovirus 1; Post-Primary | 84.2 | | | |
| Anti-Poliovirus 1; Post-Booster | 92 | | | |
| Anti-Poliovirus 2; Post-Primary | 76 | | | |
| Anti-Poliovirus 2; Post-Booster | 83 | | | |
| Anti-Poliovirus 3; Post-Primary | 95.3 | | | |
| Anti-Poliovirus 3; Post-Booster | 89.2 | | | |

### Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Solicited Injection-site and Systemic Reactions Following Any and Each Primary Series Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine

| End point title | Percentage of Infant Subjects with Solicited Injection-site and Systemic Reactions Following Any and Each Primary Series Vaccination with Either Inactivated Poliomyelitis Vaccine (IMOVAX Polio™) or Commercially Available Oral Poliomyelitis Vaccine |
|---|---|

End point description:

Solicited injection site reactions: Tenderness, Erythema, Swelling. Solicited systemic reaction: Fever (as per China State Food and Drug Administration), Vomiting, Crying abnormal, Drowsiness, Appetite lost, Irritability. OPV is an oral vaccine and does not have solicited injection site data.

Grade 3 Solicited injection site reactions: Tenderness, Cries when injected limb is moved or the movement of the injected limb is reduced; Erythema and Swelling, ≥5 cm. Grade 3 Solicited systemic reactions: Fever, >39°C (Axillary); Vomiting, ≥6 episodes per 24 hours or requiring parenteral hydration; Crying abnormal, > 3 hours; Drowsiness, Sleeping most of the time or difficulty in waking up; Appetite lost, Refuses ≥ 3 feeds or refuses most feeds; Irritability; Inconsolable.

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

End point timeframe:

Day 0 up to Day 8 post-any and each primary vaccination

| End point values | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | | |
|---|---|---|---|---|
| Subject group type | Reporting group | Reporting group | | |
| Number of subjects analysed | 300 | 297[8] | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Any Injection site Tenderness | 36.7 | 0 | | |
| Injection site Tenderness; Post-dose 1 | 27.4 | 0 | | |
| Grade 3 Injection site Tenderness; Post-dose 1 | 0.3 | 0 | | |

| | | | | |
|---|---|---|---|---|
| Injection site Tenderness; Post-dose 2 | 20.1 | 0 | | |
| Grade 3 Injection site Tenderness; Post-dose 2 | 0 | 0 | | |
| Injection site Tenderness; Post-dose 3 | 14.4 | 0 | | |
| Grade 3 Injection site Tenderness; Post-dose 3 | 0 | 0 | | |
| Any Injection site Erythema | 14.8 | 0 | | |
| Injection site Erythema; Post-dose 1 | 8.4 | 0 | | |
| Grade 3 Injection site Erythema; Post-dose 1 | 0 | 0 | | |
| Injection site Erythema; Post-dose 2 | 7.6 | 0 | | |
| Grade 3 Injection site Erythema; Post-dose 2 | 0 | 0 | | |
| Injection site Erythema; Post-dose 3 | 6.8 | 0 | | |
| Grade 3 Injection site Erythema; Post-dose 3 | 0.4 | 0 | | |
| Any Injection site Swelling | 4.7 | 0 | | |
| Injection site Swelling; Post-dose 1 | 4.1 | 0 | | |
| Grade 3 Injection site Swelling; Post-dose 1 | 0 | 0 | | |
| Injection site Swelling; Post-dose 2 | 1.1 | 0 | | |
| Grade 3 Injection site Swelling; Post-dose 2 | 0 | 0 | | |
| Injection site Swelling; Post-dose 3 | 0.7 | 0 | | |
| Grade 3 Injection site Swelling; Post-dose 3 | 0 | 0 | | |
| Any Fever | 25.9 | 25 | | |
| Fever; Post-dose 1 | 15.2 | 10.3 | | |
| Grade 3 Fever; Post-dose 1 | 0 | 0.3 | | |
| Fever; Post-dose 2 | 10 | 8.5 | | |
| Grade 3 Fever; Post-dose 2 | 0 | 0.4 | | |
| Fever; Post-dose 3 | 6.5 | 12.1 | | |
| Grade 3 Fever; Post-dose 3 | 0.4 | 0 | | |
| Any Vomiting | 43.7 | 39.7 | | |
| Vomiting; Post-dose 1 | 36.1 | 30.1 | | |
| Grade 3 Vomiting; Post-dose 1 | 0.3 | 0.7 | | |
| Vomiting; Post-dose 2 | 22.5 | 17.6 | | |
| Grade 3 Vomiting; Post-dose 2 | 0 | 0 | | |
| Vomiting; Post-dose 3 | 12.2 | 11.3 | | |
| Grade 3 Vomiting; Post-dose 3 | 0.4 | 0 | | |
| Any Crying abnormal | 46.1 | 29.1 | | |
| Crying abnormal; Post-dose 1 | 35.7 | 22.9 | | |
| Grade 3 Crying abnormal; Post-dose 1 | 2 | 1.4 | | |
| Crying abnormal; Post-dose 2 | 24.3 | 10.6 | | |
| Grade 3 Crying abnormal; Post-dose 2 | 0.7 | 1.1 | | |
| Crying abnormal; Post-dose 3 | 12.2 | 8.9 | | |
| Grade 3 Crying abnormal; Post-dose 3 | 0 | 0 | | |
| Any Drowsiness | 31.9 | 19.5 | | |
| Drowsiness; Post-dose 1 | 25.9 | 17.5 | | |
| Grade 3 Drowsiness; Post-dose 1 | 1.7 | 1 | | |
| Drowsiness; Post-dose 2 | 11.1 | 4.6 | | |
| Grade 3 Drowsiness; Post-dose 2 | 0 | 0.4 | | |
| Drowsiness; Post-dose 3 | 6.1 | 3.2 | | |
| Grade 3 Drowsiness; Post-dose 3 | 0 | 0 | | |

| | | | | |
|---|---|---|---|---|
| Any Appetite lost | 30.2 | 21.9 | | |
| Appetite lost; Post-dose 1 | 24.1 | 15.4 | | |
| Grade 3 Appetite lost; Post-dose 1 | 1 | 1 | | |
| Appetite lost; Post-dose 2 | 14.3 | 8.1 | | |
| Grade 3 Appetite lost; Post-dose 2 | 0 | 0.4 | | |
| Appetite lost; Post-dose 3 | 8.3 | 9.2 | | |
| Grade 3 Appetite lost; Post-dose 3 | 0 | 0.4 | | |
| Any Irritability | 32.2 | 18.8 | | |
| Irritability; Post-dose 1 | 24.1 | 16.8 | | |
| Grade 3 Irritability; Post-dose 1 | 0.7 | 2.4 | | |
| Irritability; Post-dose 2 | 16.1 | 6.3 | | |
| Grade 3 Irritability; Post-dose 2 | 0.7 | 1.1 | | |
| Irritability; Post-dose 3 | 9.4 | 3.9 | | |
| Grade 3 Irritability; Post-dose 3 | 0.4 | 0 | | |

Notes:

[8] - N=0 for solicited injection site reactions because Oral Polio Vaccine (OPV) was administered.

## Statistical analyses

No statistical analyses for this end point

## Secondary: Percentage of Infant Subjects with Solicited Injection-site and Systemic Reactions Following Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)

| | |
|---|---|
| End point title | Percentage of Infant Subjects with Solicited Injection-site and Systemic Reactions Following Booster Vaccination with Inactivated Poliomyelitis Vaccine (IMOVAX Polio™)[9] |

End point description:

Solicited injection site reactions: Tenderness, Erythema, Swelling. Solicited systemic reaction: Fever (as per China State Food and Drug Administration), Vomiting, Crying abnormal, Drowsiness, Appetite lost, Irritability. OPV was not administered as a booster vaccination and data is not available for this group.

Grade 3 Solicited injection site reactions: Tenderness, Cries when injected limb is moved or the movement of the injected limb is reduced; Erythema and Swelling, ≥5 cm. Grade 3 Solicited systemic reactions: Fever, >39°C (Axillary); Vomiting, ≥6 episodes per 24 hours or requiring parenteral hydration; Crying abnormal, > 3 hours; Drowsiness, Sleeping most of the time or difficulty in waking up; Appetite lost, Refuses ≥ 3 feeds or refuses most feeds; Irritability; Inconsolable.

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

End point timeframe:

Day 0 up to Day 8 post-booster vaccination

Notes:

[9] - 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: A booster vaccination was not administered in the OPV group; therefore, solicited injection site and systemic reaction data are not available for this group.

| End point values | IMOVAX Polio™ Group | | | |
|---|---|---|---|---|
| Subject group type | Reporting group | | | |
| Number of subjects analysed | 300 | | | |
| Units: Percentage of subjects | | | | |
| number (not applicable) | | | | |
| Any Injection site Tenderness | 20 | | | |
| Grade 3 Injection site Tenderness | 0 | | | |
| Any Injection site Erythema | 7.9 | | | |

| | | | | |
|---|---|---|---|---|
| Grade 3 Injection site Erythema | 0 | | | |
| Any Injection site Swelling | 2.3 | | | |
| Grade 3 Injection site Swelling | 0 | | | |
| Any Fever | 14.7 | | | |
| Grade 3 Fever | 1.5 | | | |
| Any Vomiting | 3.4 | | | |
| Grade 3 Vomiting | 0 | | | |
| Any Crying abnormal | 10.2 | | | |
| Grade 3 Crying abnormal | 0 | | | |
| Any Drowsiness | 6.4 | | | |
| Grade 3 Drowsiness | 0 | | | |
| Any Appetite lost | 8.6 | | | |
| Grade 3 Appetite lost | 0 | | | |
| Any Irritability | 9.8 | | | |
| Grade 3 Irritability | 0 | | | |

## Statistical analyses

No statistical analyses for this end point

## Adverse events

### Adverse events information

Timeframe for reporting adverse events:

Adverse event data were collected from Day 0 of primary series vaccination up to Day 8 post-booster vaccination.

| | |
|---|---|
| Assessment type | Non-systematic |

### Dictionary used

| | |
|---|---|
| Dictionary name | MedDRA |
| Dictionary version | 7.1 |

### Reporting groups

| | |
|---|---|
| Reporting group title | IMOVAX Polio™ Group |

Reporting group description:

Infants received the IMOVAX Polio™ (IPV) vaccine at 2, 3, and 4 months of age and a booster dose of IPV vaccine 14-16 months after the three-dose primary vaccination.

| | |
|---|---|
| Reporting group title | Oral Poliomyelitis Vaccine Group |

Reporting group description:

Infants received the commercially available Oral Poliomyelitis Vaccine (OPV) vaccine at 2, 3, and 4 months of age.

| Serious adverse events | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | |
|---|---|---|---|
| Total subjects affected by serious adverse events | | | |
| subjects affected / exposed | 9 / 300 (3.00%) | 7 / 297 (2.36%) | |
| number of deaths (all causes) | 0 | 0 | |
| number of deaths resulting from adverse events | 0 | 0 | |
| Injury, poisoning and procedural complications | | | |
| Animal bite | | | |
| subjects affected / exposed | 3 / 300 (1.00%) | 1 / 297 (0.34%) | |
| occurrences causally related to treatment / all | 0 / 3 | 0 / 1 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |
| Animal scratch | | | |
| subjects affected / exposed | 3 / 300 (1.00%) | 0 / 297 (0.00%) | |
| occurrences causally related to treatment / all | 0 / 3 | 0 / 0 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |
| Gastrointestinal disorders | | | |
| Dysentery | | | |
| subjects affected / exposed | 0 / 300 (0.00%) | 1 / 297 (0.34%) | |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 1 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |

| | | | |
|---|---|---|---|
| Infections and infestations | | | |
| Pneumonia | | | |
| subjects affected / exposed | 2 / 300 (0.67%) | 2 / 297 (0.67%) | |
| occurrences causally related to treatment / all | 0 / 2 | 0 / 2 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |
| Enteritis and cellulitis | | | |
| subjects affected / exposed | 1 / 300 (0.33%) | 0 / 297 (0.00%) | |
| occurrences causally related to treatment / all | 0 / 1 | 0 / 0 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |
| Bronchitis | | | |
| subjects affected / exposed | 0 / 300 (0.00%) | 2 / 297 (0.67%) | |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 2 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |
| Encephalitis (viral) | | | |
| subjects affected / exposed | 0 / 300 (0.00%) | 1 / 297 (0.34%) | |
| occurrences causally related to treatment / all | 0 / 0 | 0 / 1 | |
| deaths causally related to treatment / all | 0 / 0 | 0 / 0 | |

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

| **Non-serious adverse events** | IMOVAX Polio™ Group | Oral Poliomyelitis Vaccine Group | |
|---|---|---|---|
| Total subjects affected by non-serious adverse events | | | |
| subjects affected / exposed | 136 / 300 (45.33%) | 116 / 297 (39.06%) | |
| Nervous system disorders | | | |
| Drowsiness | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[1] | 94 / 295 (31.86%) | 57 / 292 (19.52%) | |
| occurrences (all) | 94 | 57 | |
| General disorders and administration site conditions | | | |
| Injection site Tenderness | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[2] | 109 / 297 (36.70%) | 0 / 292 (0.00%) | |
| occurrences (all) | 109 | 0 | |
| Injection site Erythema | | | |
| alternative assessment type: Systematic | | | |

| | | | |
|---|---|---|---|
| subjects affected / exposed[3] | 44 / 297 (14.81%) | 0 / 292 (0.00%) | |
| occurrences (all) | 44 | 0 | |
| Injection site Swelling | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[4] | 14 / 297 (4.71%) | 0 / 292 (0.00%) | |
| occurrences (all) | 14 | 0 | |
| Fever | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[5] | 77 / 297 (25.93%) | 73 / 292 (25.00%) | |
| occurrences (all) | 77 | 73 | |
| Gastrointestinal disorders | | | |
| Vomiting | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[6] | 129 / 295 (43.73%) | 116 / 292 (39.73%) | |
| occurrences (all) | 129 | 116 | |
| Respiratory, thoracic and mediastinal disorders | | | |
| Cough | | | |
| subjects affected / exposed[7] | 25 / 297 (8.42%) | 17 / 292 (5.82%) | |
| occurrences (all) | 25 | 17 | |
| Psychiatric disorders | | | |
| Crying abnormal | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[8] | 136 / 295 (46.10%) | 85 / 292 (29.11%) | |
| occurrences (all) | 136 | 85 | |
| Irritability | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[9] | 95 / 295 (32.20%) | 55 / 292 (18.84%) | |
| occurrences (all) | 95 | 55 | |
| Metabolism and nutrition disorders | | | |
| Appetite lost | | | |
| alternative assessment type: Systematic | | | |
| subjects affected / exposed[10] | 89 / 295 (30.17%) | 64 / 292 (21.92%) | |
| occurrences (all) | 89 | 64 | |

Notes:

[1] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[2] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[3] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[4] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[5] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[6] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[7] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was an unsolicited adverse event that occurred within 8 days post-any primary series injection; the total number (N) reflects those subjects for which data were available for the event during the period.

[8] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[9] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

[10] - The number of subjects exposed to this adverse event is less than the total number of subjects exposed for the reporting group. These numbers are expected to be equal.

Justification: This was a solicited adverse event recorded in a diary card within 8 days post-any primary series injection; the total number (N) reflects those subjects for which the diary cards were returned and for which data were available for the event during the period.

## More information

### Substantial protocol amendments (globally)

Were there any global substantial amendments to the protocol? No

### Interruptions (globally)

Were there any global interruptions to the trial? No

### Limitations and caveats

None reported