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Effectiveness of an eleven-valent pneumococcal (type 1, 3, 4, 5, 6B, 7F, 9V, 14, 18C, 19F and 23F) conjugate vaccine against pneumonia in Philippine children: A double-blind, placebo-controlled, randomised, multicentre, effectiveness study

Submission date 13/09/2005	**Recruitment status** No longer recruiting	[_] Prospectively registered [_] Protocol [_] Statistical analysis plan [X] Results [_] Individual participant data
Registration date 25/01/2006	**Overall study status** Completed	
Last Edited 05/11/2012	**Condition category** Respiratory	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

Contact name
Dr Marilla Lucero

Contact details
Research Institute for Tropical Medicine (RITM)
Research Drive
Filinvest Corporate City
Alabang
Muntinlupa City
Philippines
1781
+63 (0)2 807 2634
mglucero@pldtdsl.net

Additional identifiers

Protocol serial number
PNF13399

Study information

Scientific Title

Acronym
ARIVAC

Study objectives
Primary objective: The vaccine is efficacious in preventing community-acquired X-ray positive pneumonia. The minimum efficacy, estimated by the lower limit of the 95% confidence interval, is 15%. The relative risk of the X-ray positive pneumonia in the vaccine group is less than 0.85 when compared to the placebo group.

Objective 2a: Hypothesis: The vaccine is efficacious in preventing community-acquired pneumonia requiring hospitalization. The relative risk of pneumonia is lower than one when compared to the placebo group; in other words, the vaccine efficacy is higher than 0%.

Objective 2b: Hypothesis: The vaccine is efficacious in preventing community-acquired pneumonia not requiring hospitalization. The relative risk of pneumonia is lower than one when compared to the placebo group; in other words, the vaccine efficacy is higher than 0%.

Objective 2c: Hypothesis: The vaccine is efficacious in preventing culture proven vaccine type-specific invasive pneumococcal disease. The relative risk of culture proven vaccine type-specific invasive pneumococcal disease is lower than one when compared to the placebo group; in other words, the vaccine efficacy is higher than 0%.

Objective 2d: Hypothesis: The eleven-valent pneumococcal conjugate vaccine is safe when administered concomitantly with the vaccines of Expanded Programmes on Immunization (EPI) and Hib vaccine.

For the nested carriage and immunogenicity study:
Objective 2e: Hypothesis: Children immunized with the eleven-valent pneumococcal vaccine have higher concentrations of antipneumococcal polysaccharide antibodies and higher opsonophagocytic activity in comparison to the placebo recipients.

Objective 2f: Hypothesis: Significantly fewer children immunized with the eleven-valent pneumococcal conjugate vaccine will carry vaccine serotypes of Streptococcus pneumoniae than the placebo recipients.

Ethics approval required
Old ethics approval format

Ethics approval(s)
The Technical Review Board and Ethical Review Board (Institutional Review Board [IRB]) of the Research Institute for Tropical Medicine (RITM), Philippines, reviewed and approved the original study protocol in 1999. A counterpart ethical review committee at the National Public Health Institute in Finland likewise reviewed the study protocol, and approved it in the same year. The

RITM IRB evaluated yearly the progress of the study and gave its corresponding approval to proceed with the conduct of the trial. The latest approval was awarded on August 8, 2005.

Primary study design
Interventional

Study design
Randomised controlled trial

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Pediatric pneumococcal pneumonia, sepsis, meningitis.

Interventions
Study Vaccine Group: An eleven-valent pneumococcal tetanus-diphtheria toxoid conjugated vaccine, diphtheria-tetanus-pertussis whole cell vaccine, Haemophilus influenzae type b vaccine, hepatitis B vaccine, oral polio vaccine, measles vaccine according to national immunization program schedule.

Control (Placebo) Vaccine Group: Saline (NaCl), diphtheria-tetanus-pertussis whole cell vaccine, Haemophilus influenzae type b vaccine, hepatitis B vaccine, oral polio vaccine, measles vaccine according to national immunization program.

Intervention Type
Biological/Vaccine

Phase
Phase III

Primary outcome(s)
Radiologically confirmed, community-acquired pneumonia at least 14 days after the third dose of the study vaccine in first 2 years of life.

Key secondary outcome(s)
Secondary outcomes: World Health Organisation (WHO) Pneumonia
1.1. Any episode of community-acquired pneumonia requiring or not requiring hospitalization
1.2. Any episode of community-acquired pneumonia requiring hospitalization
2. Any episode of community-acquired pneumonia not requiring hospitalization
3. Any episode of culture proven invasive pneumococcal disease, determined as vaccine-specific serotype, vaccine-related serotype, vaccine serogroup, or non-vaccine serotype or group of Streptococcus pneumoniae
4. Safety of the 11PCV when administered concomitantly with the EPI and Hib vaccines
5. Reactogenicity of the 11PCV after each injection
6. Immunogenicity and the opsonophagocytic activity (OPA) of the 11PCV in 11PCV and placebo recipients
7. Nasopharyngeal carriage of vaccine and non-vaccine specific serotypes of Streptococcus pneumoniae in 11PCV and placebo recipients

Completion date

18/12/2004

Eligibility

Key inclusion criteria
For the effectiveness study and the nested immunogenicity study:
1. Any child who comes for routine vaccination to a barangay health station in the 48 barangays in the six municipalities of Bohol, the Philippines (i.e. Baclayon, Balilihan, Cortes, Dauis, Panglao and Tagbilaran)
2. Considered to be in good health on the basis of medical history and observation taken at the barangay health station
3. At least 6 weeks of age and not older than 6 months of age
4. Having at least one parent or other legal representative giving their informed consent attested by signature

For the effectiveness study:
Is a resident of any of the barangays within the catchment of the 45 barangay health stations of the six municipalities for at least the past 3 months with his/her family, or intends to stay permanently

For the nested immunogenicity, safety and carriage study:
Is a resident of any of the barangays within the catchment of the three chosen barangay health stations (i.e. Dampas-Tagbilaran, Danao and Main Health Center-Panglao) for at least the past 3 months with his/her family, or intends to stay permanently

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Child

Lower age limit
6 Weeks

Upper age limit
6 Months

Sex
All

Key exclusion criteria
For the effectiveness study and the nested immunogenicity study:
Any child who:
1. Has received the first dose of diphtheria, tetanus, pertussis (DTP) vaccine
2. Has acute febrile illness (rectal temperature >/= 38.5°C) at the time of inclusion

3. Is suspected to have a neurological disease (a contraindication to the DTP vaccine)
4. Has history of hospitalization for and/or treatment for immune suppression
5. Is enrolled or scheduled to be enrolled in another clinical trial

Date of first enrolment
05/07/2000

Date of final enrolment
18/12/2004

Locations

Countries of recruitment
Philippines

Study participating centre
Research Institute for Tropical Medicine (RITM)
Muntinlupa City
Philippines
1781

Sponsor information

Organisation
ARIVAC Consortium (Finland)

Funder(s)

Funder type
Other

Funder Name
National Health and Medical Research Council (NHMRC) (Australia)

Alternative Name(s)
National Health and Medical Research Council, Australian Government, NHMRC National Health and Medical Research Council, NHMRC

Funding Body Type
Government organisation

Funding Body Subtype

National government

Location
Australia

Funder Name
European Commission (Belgium) - DG Research, INCO Programme

Funder Name
Finnish Academy (Finland)

Funder Name
Finnish Ministry of Foreign Affairs (Finland)

Funder Name
Physicians for Social Responsibility (PSR) (Finland)

Funder Name
Program for Appropriate Technology and Health (PATH) (USA)

Funder Name
Global Alliance for Vaccines, Accelerated Development and Implementation Plan (GAVI ADIP Pnc) (Switzerland)

Funder Name
Provincial Government of Bohol (Philippines)

Funder Name
Local government units of Tagbilaran City, Dauis, Panglao, Balilihan, Cortez and Baclayon (Philippines)

Funder Name

Research Institute for Tropical Medicine (RITM) (Philippines)

Funder Name
National Public Health Institute (KTL) (Finland)

Funder Name
University of Colorado (USA)

Funder Name
University of Queensland (Australia)

Alternative Name(s)
The University of Queensland, UQ Australia, University of Queensland in Australia, University of Queensland - Australia, The University of Queensland | Brisbane QLD, uniofqld, UQ

Funding Body Type
Government organisation

Funding Body Subtype
Universities (academic only)

Location
Australia

Funder Name
Sanofi Pasteur (France)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	21/07/2008		Yes	No
Other publications	evaluation	07/06/2012		Yes	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes