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A phase IV study to evaluate the primary and booster immune responses of UK infants receiving a licensed 6-in-1 DTaP/IPV/Hib/HBV vaccine (Infanrix-Hexa) with a 13valent pneumococcal conjugate vaccine and incorporating a randomisation study of a single dose of 3 different meningococcal group C conjugate vaccines at 3 months of age

Submission date
25/04/2013

Recruitment status
No longer recruiting

Registration date
26/04/2013

Overall study status
Completed

Last Edited
21/06/2019

Condition category
Infections and Infestations

[X] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Infants in the UK are routinely immunised against diphtheria, tetanus, pertussis, polio and Haemophilus influenzae serotype b (Hib) using a 5in1 combination vaccine (Pediacel™) given at 2, 3 and 4 months of age. These infants also receive vaccines that protect against meningococcal group C (MenC) and pneumococcal disease as part of this schedule. Hepatitis B is an infection of the liver caused by the Hepatitis B virus (HBV). Chronic (long-term) infection with HBV increases the risk of liver failure, cirrhosis and cancer. The UK currently has a selective HBV immunisation strategy targeting only those considered at high risk of HBV infection. There is an opportunity to introduce a licensed 6in1 vaccine (InfanrixHexa™) to replace the current 5in1 vaccine (Pediacel™) in the infant schedule. This vaccine should protect infants against all the same infections but in addition will protect against hepatitis B. The development of combination vaccines is complex and there is the potential for interactions between the different components of a combination vaccine and also between different vaccines given at the same visit. The aim of this study is to ensure that giving InfanrixHexa™ with MenC and the pneumococcal vaccine as part of UK infant schedule will offer adequate protection against the infections it is designed to protect. In addition, although infants in the UK currently receive two doses of MenC vaccine at 3 and 4 months of age, recent studies have shown that a single MenC dose in infancy provides adequate protection and, therefore, the UK infant schedule will soon move to a single MenC vaccine dose given at 3 months of age. As a result, we aim to randomly allocate infants to receive one of three licensed MenC vaccines at 3 months of age.

Who can participate?
Infants born at term (at least 37 weeks gestation) and aged less than 10 weeks who have not yet received their primary immunisations.

What does the study involve?
Infants are randomly allocated to receive one of three MenC or MenC-containing vaccines at 3 months of age: NeisVacC™, Menjugate™ or Menitorix™. Hib and MenC antibody levels are measured one month later, before routine booster vaccination at 12 months of age.

What are the possible benefits and risks of participating?
Not provided at time of registration

Where is the study run from?
Health Protection Agency (UK)

When is the study starting and how long is it expected to run for?
June 2013 to December 2016

Who is funding the study?
Department of Health (UK)

Who is the main contact?
Dr Jo Southern
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Contact information

Type(s)
Scientific

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Additional identifiers

Clinical Trials Information System (CTIS)
2012-003026-25

ClinicalTrials.gov (NCT)
NCT01896596

Protocol serial number
13974

Study information

Scientific Title
A phase IV study to evaluate the primary and booster immune responses of UK infants receiving a licensed 6-in-1 DTaP/IPV/Hib/HBV vaccine (Infanrix-Hexa) with a 13valent pneumococcal conjugate vaccine and incorporating a randomisation study of a single dose of 3 different meningococcal group C conjugate vaccines at 3 months of age

Acronym
Infanrix-Hexa

Study objectives
Infants in the UK are routinely immunised against diphtheria, tetanus, pertussis, polio and Haemophilus influenzae serotype b (Hib) using a 5in1 combination vaccine (Pediacel™) given at 2, 3 and 4 months of age. These infants also receive vaccines that protect against meningococcal group C (MenC) and pneumococcal disease as part of this primary schedule.

Hepatitis B is an infection of the liver caused by the Hepatitis B virus (HBV). Chronic infection with HBV causes significant morbidity and mortality as there is an increased long term risk of liver failure, cirrhosis and cancer. The UK currently has a selective HBV immunisation strategy targeting only those considered at high risk of HBV infection.

There is an opportunity to introduce a licensed 6in1 vaccine (InfanrixHexa™) to replace the current 5in1 vaccine (Pediacel™) in the infant schedule. This vaccine should protect infants against all the same infections but in addition will protect against hepatitis B.

The development of combination vaccines is complex and there is the potential for interactions between the different components of a combination vaccine and also between different vaccines given at the same visit. The proposed study aims to ensure that giving InfanrixHexa™ with MenC and the pneumococcal vaccine as part of UK infant schedule will offer adequate protection against the infections it is designed to protect. In addition, although infants in the UK currently receive 2 doses of MenC vaccine at 3 and 4 months of age, recent studies have shown that a single MenC dose in infancy provides adequate protection and, therefore, the UK infant schedule will soon move to a single MenC vaccine dose given at 3 months of age. As a result, we aim to randomise infants to receive one of 3 licensed MenC vaccines at 3 months of age.

Ethics approval required
Old ethics approval format

Ethics approval(s)
First MREC approval date 28/09/2012, ref: 12/LO/1132

Study design
Randomised interventional study; Design type: Prevention

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Immune response to vaccines

Interventions
Babies taking part in this study will be randomly allocated to receive one of 3 MenC or MenC containing vaccines at 3 months of age: NeisVacC™, Menjugate™ or Menitorix™. Recent clinical trials have shown that one dose of NeisVac™ or Menjugate™ given to babies at 3 months of age provides similar protection against MenC disease as two doses.

Intervention Type
Biological/Vaccine

Phase
Phase IV

Primary outcome(s)
Hib antibody concentrations and MenC-specific antibody titres measured one month after primary immunisation, prior to routine booster vaccination at 12 months of age

Key secondary outcome(s))
Not provided at time of registration

Completion date
31/12/2016

Eligibility

Key inclusion criteria
1. Male or female infants born at term (at least 37 weeks gestation) who are aged <10 weeks and have not yet received their primary immunisations
2. With written informed consent obtained from the parent or legal guardian of the infant to participate in the study
3. Do not fulfil any of the exclusion criteria

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Neonate

Sex
All

Total final enrolment

Key exclusion criteria
1. History of infection with Haemophilus influenzae serotype b (Hib), pneumococcal or meningococcal disease, pertussis, polio, diphtheria, tetanus or hepatitis B
2. History of maternal acute or chronic hepatitis B infection
3. Confirmed or suspected immunosuppressive or immunodeficient condition (including HIV)
4. Bleeding disorders and/or prolonged bleeding time
5. Major congenital defects or chronic disease
6. Premature birth (<37 weeks gestation at birth).
7. Previously received any vaccine (particularly hepatitis B)
8. Unable to obtain sufficient blood sample during >2 of the 4 blood sampling visits

Temporary Exclusion Criterion - Vaccination will be postponed until resolution of fever if axillary /aural temperature is >= 38°C.

Date of first enrolment
01/06/2013

Date of final enrolment
31/12/2016

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
Health Protection Agency
London
United Kingdom
NW9 5EQ

Sponsor information

Organisation
Health Protection Agency (UK)

ROR
https://ror.org/03sbpja79

Funder(s)

Funder type
Government

Funder Name
Department of Health (UK) - Policy Research Programme

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Basic results				No	No
HRA research summary			28/06/2023	No	No