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Meningococcal B Booster Vaccine in Young People

Submission date
23/04/2018

Recruitment status
No longer recruiting

Registration date
10/05/2018

Overall study status
Completed

Last Edited
18/08/2022

Condition category
Infections and Infestations

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

Plain English summary of protocol

Background and study aims
In 2015 4CMenB Vaccine (Bexsero®) (a vaccine against the bacteria meningococcus B) was added to the UK routine immunisation schedule for infants. The aim of this study is to determine if it is sufficient to give a single booster dose of 4CMenB to 11 year olds who have received a full course of the vaccine in their infancy, in order to ensure that they are protected from meningococcal B disease in adolescence. The reason to consider this is because meningococcus B causes disease in two main waves, the first in infancy and the second in adolescence.

Who can participate?
Children aged about 11 who received 4CMenB as part of studies done at the Oxford Vaccine Group around 11 years ago, and children of the same age who have not previously received 4CMenB

What does the study involve?
Children who received 4CMenB are assessed to determine if they still have immunity against meningococcus B so many years after receiving the vaccine, and are given a booster dose of 4CMenB to see whether their immunity can be sufficiently topped up with just a single dose of the vaccine. Children who have never received a meningococcal B vaccine before usually require two doses to become immune to the disease. These children are randomly allocated to one of two groups. One group receives one dose of 4CMenB at visit 1 (day 0) and a second dose at visit 4 (day 365). The other group receives one dose of 4CMenB at visit 1 (day 0) and a second dose at visit 2 (day 28). All participants are followed up at the same timepoints (Day 0, Day 28, Day 180 and Day 365) with blood samples collected at each visit to compare the immune responses of the different groups of children with different schedules of 4CMenB.

What are the possible benefits and risks of participating?
The study will ultimately inform decisions about whether or not to include an adolescent booster meningococcal B vaccine into the UK routine immunisation schedule. Benefits include receiving a booster dose or a full course of 4CMenB. These children are about to enter into their adolescent years in which the risk of meningococcal disease rises, and they will benefit from the protection provided by this vaccine. As the vaccine used in this study is a licensed product, the risks to participants are the same as if they received any licensed vaccine. There is a very small

risk of allergy or anaphylaxis to the vaccine, but the vaccine has undergone stringent safety testing. There is a risk of bruises from the blood tests in this study.

Where is the study run from?
University of Oxford (UK)

When is the study starting and how long is it expected to run for?
January 2018 to July 2019

Who is funding the study?
Meningitis Research Foundation (UK)

Who is the main contact?
Rachel Craik
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Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Clinical Trials Information System (CTIS)
2017-004732-11

Protocol serial number
37797

Study information

Scientific Title
Preventing meningitis in young people after infant immunisation: effect of a single meningococcal 4CMenB vaccine booster over 10 years of age

Study objectives
In 2015 4CMenB Vaccine (Bexsero®) (a vaccine against the bacteria meningococcus B) was added to the UK routine immunisation schedule for infants. The aim of this study is to determine if it is sufficient to give a single booster dose of 4CMenB to 11 year olds that have received a full course of the vaccine in their infancy, in order to ensure that they are protected from meningococcal B disease in adolescence. The reason to consider this is because meningococcus B causes disease in two main waves, the first in infancy and the second in adolescence. The first children to receive 4CMenB in the UK were a group recruited to studies done at the Oxford Vaccine Group around 11 years ago. The trialists are planning to approach these children to determine if they still have immunity against meningococcus B so many years after receiving the vaccine, and whether their immunity can be sufficiently topped up with just a single dose of the vaccine as a booster, as opposed to the two doses required to protect naïve children.

Ethics approval required
Old ethics approval format

Ethics approval(s)
South Central - Berkshire, 19/01/2018, ref: 17/EM/0466

Primary study design
Interventional

Study design
Randomised; Interventional; Design type: Prevention, Vaccine

Study type(s)
Prevention

Health condition(s) or problem(s) studied
Specialty: Infection, Primary sub-specialty: Vaccines; UKCRC code/ Disease: Inflammatory and Immune System/ Certain disorders involving the immune mechanism

Interventions
There are three arms to this study, a group of follow-up participants and two groups of naïve participants. The follow up cohort are a group of children who took part in Meningitis B studies run by the Oxford Vaccine Group as infants (groups 1-6 depending upon the previous study they took part in). These children are now 11 years old so they are invited back to participate in this study to investigate their immune response to the licensed MenB vaccine (4CMenB/Bexsero). These participants will receive a booster dose of 4CMenB and have a blood sample collected at visit 1 (Day 0). They will then be followed up for a year where blood samples will be collected at three follow up visits (Day 28, Day 180 and Day 365).

The naïve participants will be randomly allocated via a computer-generated list into two groups with an allocation ratio of 1:1. All naïve participants will receive 2 doses of vaccine, as opposed to the one dose for follow-up children. Naïve participants in group 7 will receive one dose of 4CMenB at visit 1 (day 0) and a second dose at visit 4 (day 365). Participants in group 8 will receive one dose of 4CMenB at visit 1 (day 0) and a second dose at visit 2 (day 28). The naïve groups will all be followed up at the same timepoints as the follow up children with four blood samples being collected at each visit.

Intervention Type

Other

Primary outcome(s)
Serum bactericidal assay against N. meningitidis serogroup B indicator strains before and after vaccination

Key secondary outcome(s)
Serum bactericidal assay (SBA) against vaccine strains of MenB will be measured to indicate the antibody response before vaccination at baseline. The differences in SBA will compared between the different treatment groups to indicate if there is any persistence of immunity in the children who have previously had a MenB vaccine.

Completion date
01/07/2019

Eligibility

Key inclusion criteria
For recruitment to all study groups:
1. Parents/legal guardians are willing and able to comply with the requirements of the trial protocol and have internet access for the duration of the study
2. Parents/legal guardians have given informed consent for their child's participation in the study
3. Participant is willing and able to give informed assent for participation in the trial
4. In the Investigator's opinion, participants are able and willing to comply with all trial requirements
5. Parents/legal guardians/participants are willing to allow their General Practitioner and consultant, if appropriate, to be notified of participation in the trial

For recruitment to study groups 1 to 6 only:
Male or female, aged approximately 11 years who have completed a vaccination course of 4CMenB as an infant or toddler in clinical trials V72P6, V72P6E1,V72P9 or V72P9E1

For recruitment to naïve groups 7 and 8 only:
Male or female, born between 25/06/2006 – 17/12/2006 (age range is matched with group 1-6), who have not previously received 4CMenB vaccine. The aim is to recruit approximately 50% female and 50% male participants, in order to match with the previously vaccinated group

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Total final enrolment

Key exclusion criteria

The participant may not enter the trial if ANY of the following apply:
1. Children of parents/legal guardians who are on the delegation log for this study
2. History of invasive meningococcal B disease
3. History of being a household contact with a case of confirmed bacterial meningitis
4. Confirmed or suspected immunodeficiency
5. A family history of congenital or hereditary immunodeficiency, or maternal HIV
6. History of anaphylactic reaction to any component of the vaccine
7. No internet access for the duration of the study
8. Any other significant disease or disorder which, in the opinion of the Investigator, may either put the participants at risk because of participation in the trial, or may influence the result of the trial, or the participant's ability to participate in the trial
9. Participants who have participated in another research trial involving an investigational product in the past 12 weeks.
10. Prior or planned receipt of any other investigational vaccine or drug
11. Thrombocytopenia or any bleeding disorder
12. Receipt of blood, blood products, or plasma derivatives within the past 3 months

Exclusion to study groups 1 to 6 only:
1. Any previous vaccination with 4CMenB vaccine except as part of V72P6, V72P6E1, V72P9 or V72P9E1 clinical trials
2. Any previous vaccination with another meningococcal B vaccine (such as outer membrane vesicle vaccines)
3. Receipt of immunosuppressive therapy such as anti-cancer chemotherapy or radiation therapy within the preceding 1 month or long-term systemic corticosteroid therapy (e.g. oral prednisolone >0.5ml/kg/day or intravenous glucocorticoid steroid). However, this may be discussed on a case by case basis. Nasal, topical or inhaled steroids are allowed

Exclusion to naïve groups 7 and 8 only:
1. Previous vaccination with 4CMenB vaccine or with any other meningococcal B vaccine (such as outer membrane vesicle vaccines)
2. Receipt of immunosuppressive therapy such as anti-cancer chemotherapy or radiation therapy
3. Current receipt of long-term systemic corticosteroid therapy (e.g. oral prednisolone >0.5ml/kg /day or intravenous glucocorticoid steroid). Nasal, topical or inhaled steroids are allowed.
4. Long-term prophylactic antibiotic use

Temporary exclusions for all study groups:
To receiving 4CMenB vaccine:
1. Administration of any other vaccine within 14 days before the study vaccines
2. Scheduled elective surgery, planned admission or other procedures requiring general anaesthesia within 7 days of receiving 4CMen B vaccine
3. Febrile illness (axillary temperature ≥38°C)
4. Significant acute or chronic infection within the previous 7 days, or fever (≥38°C) within the previous 3 days

For blood draw to be performed:
1. Receipt of systemic antibiotics within the previous 7 days
2. For participants in groups 1-6 who are unable to cease long-term antibiotics for one week prior to the scheduled study visit, we will not take blood samples for analysis. The trialists will still vaccinate these participants if consent is obtained, and collect data on reactogenicity

(temperature monitoring) and side effects (eDiary). They will explore the possibility of pausing a child's long-term antibiotics
with their GPs prior to making the decision of collecting blood samples.

Date of first enrolment
24/03/2018

Date of final enrolment
01/07/2018

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University of Oxford
Oxford Vaccine Group
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OX3 7LE

Sponsor information

Organisation
University of Oxford

ROR
https://ror.org/052gg0110

Funder(s)

Funder type
Charity

Funder Name
Meningitis Research Foundation; Grant Codes: 1702.0

Alternative Name(s)
meningitisresearch, meningitisRF, Meningitis Research Foundation: Meningitis and septicaemia, Meningitis Research Foundation (UK), M_R_F, MRF

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
United Kingdom

Results and Publications

Individual participant data (IPD) sharing plan
The data sharing plans for the current study are unknown and will be made available at a later date. There are no additional documents for this study.

IPD sharing plan summary
Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	protocol	10/06/2022	15/06/2022	Yes	No
Protocol article		24/07/2019	26/07/2019	Yes	No
Basic results		24/03/2022	16/06/2022	No	No
HRA research summary			28/06/2023	No	No