

Towards an inhaled vaccine against pneumonia - trial of inhaled low-dose interleukin-12 as an immune potentiator to enhance natural responses against pneumococci colonising the nasopharynx

Submission date 16/01/2008	Recruitment status Stopped	☒ Prospectively registered ☐ Protocol
Registration date 04/03/2008	Overall study status Stopped	☐ Statistical analysis plan ☐ Results
Last Edited 17/05/2017	Condition category Respiratory	☐ Individual participant data ☐ Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
BAL0801

Study information

Scientific Title

Interleukin-12 as an adjuvant for mucosal vaccination against pneumococcal disease

Acronym

Mucosal IL-12 Pneumovac

Study objectives

1. Is IL-12 a safe and potentially effective adjuvant for human mucosal vaccination?
2. Will the adjuvant effect of IL-12 on mucosal defence against pneumococcus seen in animal models also be observed in studies with human experimental pneumococcal carriage?

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics approval pending as of 16/01/2008:

1. The Central Office for Research Ethics Committees (National Research Ethics Service, NHS, UK)
2. Liverpool School of Tropical Medicine Research Ethics Committee

Primary study design

Interventional

Study design

SA1: Observational study lung effects subcut IL-12

SA2: Bayesian dual endpoint phase 1 dosing trial

SA3: Open label RCT of inhaled IL-12 vs placebo and experimental pneumococcal carriage

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Pneumococcal carriage, otitis media, pneumonia and invasive pneumococcal disease

Interventions

Specific aim 1 (SA1):

100 ng/kg subcutaneous IL-12 all participants (no control arm). IL-12 has been extensively phase 1 and 2 tested by this route and this is selected as a minimally toxic dose. All participants have bronchoscopy before and after to determine the pulmonary effect of subcutaneous IL-12 by paired comparison. The pulmonary measurements are the novel bit so SA1 is just an observational study of low-dose IL-12.

Specific aim 2 (SA2):

Starts at inhaled 0.25 ng/kg and proceeds in doubling measures to 2.5 ng/kg inhaled IL-12. The dual endpoints of toxicity (grade 1 symptoms only in 50% subjects) and efficacy (defined as equalling the pulmonary effect of 100 ng/kg IL-12 subcut from SA1) will be combined using a Bayesian dual endpoint trial design to obtain an optimal dose.

Specific aim 3 (SA3 - the intervention study):

Open label randomised controlled trial (RCT) comparing a single dose of inhaled IL-12 (dose defined in SA2) versus placebo. Endpoint is the effect on experimentally induced pneumococcal carriage.

Intervention Type

Drug

Phase

Not Applicable

Drug/device/biological/vaccine name(s)

Interleukin-12 (IL-12)

Primary outcome(s)

Specific Aim 1: Pulmonary markers of adjuvant activity following subcutaneous IL-12 (determination of efficacy endpoint for Specific Aim 2)

Specific Aim 2: Optimal mucosal dose of IL-12 (using dual endpoint [efficacy and toxicity] phase 1 design)

Specific Aim 3: Mucosal humoral and cellular responses to experimental pneumococcal carriage

Key secondary outcome(s)

1. Duration of pneumococcal carriage following IL-12 challenge

2. Effect of IL-12 and experimental pneumococcal carriage on susceptibility to repeat pneumococcal carriage challenge

Completion date

30/09/2011

Reason abandoned (if study stopped)

Lack of funding/sponsorship

Eligibility

Key inclusion criteria

1. Aged over 18, either sex
2. Healthy volunteers
3. Normal lung function
4. Non-smokers

Participant type(s)

Healthy volunteer

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Sex

All

Key exclusion criteria

1. Asthma
2. Any pre-existing chronic illness
3. Current ill-health
4. Pregnancy
5. Recent ex-smokers

Date of first enrolment

01/10/2008

Date of final enrolment

30/09/2011

Locations**Countries of recruitment**

United Kingdom

England

Study participating centre

Liverpool School of Tropical Medicine

Liverpool

United Kingdom

L3 5QA

Sponsor information**Organisation**

Liverpool School of Tropical Medicine (UK)

ROR

<https://ror.org/03svjbs84>

Funder(s)

Funder type

Charity

Funder Name

Wellcome Trust (UK) - funding applied for but pending, result due in mid July 2008

Funder Name

National Institute of Health Research (NIHR) Biomedical Research Centre Royal Liverpool University Hospital (UK) - partial funding obtained for staff costs for 3 years

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration