Proof-of-pharmacology clinical trial on a vaccine that elicits a protective humoral immune response against oxidized low density lipoprotein

Published: 03-02-2016
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The aim of the present study is to determine the effect of vaccination on anti-oxLDL antibodies in man.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Other condition
Study type	Observational invasive

Summary

ID

NL-OMON43410

Source
ToetsingOnline

Brief title
Pneumococcal vaccine and immunity against oxidized LDL

Condition

- Other condition
- Arteriosclerosis, stenosis, vascular insufficiency and necrosis

Synonym
Atherosclerosis

Health condition

Hypercholesterolemie

Research involving

Human

Sponsors and support

Primary sponsor: Centre for Human Drug Research
Source(s) of monetary or material Support: VIA consortium;EU sponsored (project reference 603131)

Intervention

Keyword: Atherosclerosis, oxidized LDL, Pneumococcal vaccine, Prevenar

Outcome measures

Primary outcome

Efficacy endpoints

- Total IgG, IgM, immunoglobin E (IgE), immunoglobin A (IgA) titers

- Anti-oxLDL IgG, IgM, IgE, IgA titers

- Anti-pneumococcal wall polysaccharide IgG, IgM, IgE, IgA titers

- OxLDL levels

- Immunoglobin (Ig)-oxLDL complexes

- Total serum cholesterol, LDL, HDL, triglycerides and lipoprotein(a) (Lp(a))

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Tolerability / safety endpoints

- Treatment-emergent (serious) adverse events (S)AEs

- Concomitant medication

- Clinical laboratory tests (haematology, chemistry (including cortisol and

aldosterone) and

urinalysis)

- Vital signs (pulse rate, systolic blood pressure and diastolic blood pressure)

- Electrocardiogram (ECG) (heart rate (HR), PR, QRS, QT, QTc)

Secondary outcome

Not Applicable

Study description

Background summary

Atherosclerosis is the main cause of cardiovascular disease. Low density lipoprotein (LDL) plays an important role in atherosclerosis: after being oxidized in the vascular wall, it is phagocytosed by macrophages, forming foam cells and stimulating the overall inflammatory process. Animal research has demonstrated that the 13-valent pneumococcal polysaccharide conjugate vaccine that is currently used in clinical practice can induce immunoglobin M (IgM) antibodies against these oxidized LDL (oxLDL) particles, which resulted in a reduction of atherosclerotic lesion size.

Study objective

The aim of the present study is to determine the effect of vaccination on anti-oxLDL antibodies in man.

Study design

Randomized, double-blind, placebo-controlled, single center study

Study burden and risks

Burden: measurements, blood and urine sampling, lifestyle restrictions and time investment.
Risks: potential adverse events caused by Prevenar

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

1. Male, aged 18-45 without evidence of any active or chronic disease following a medical history, a complete physical examination including vital signs, 12-lead ECG, haematology, blood chemistry and urinalysis.
2. Able to participate and willing to give written informed consent and to comply with the study restrictions

Exclusion criteria

1. Subjects vaccinated with a pneumococcus vaccine
2. Known allergy against any of the excipients of the Prevenar vaccine.
3. History or symptoms of any significant disease including (but not limited to), neurological, psychiatric, endocrine, cardiovascular, respiratory, gastrointestinal, hepatic, or renal disorder.
4. History of active malignancy within the last 5 years, with the exception of localized or in situ carcinoma (e.g., skin basal or squamous cell carcinoma).
5. Positive Hepatitis B surface antigen (HBsAg), Hepatitis C antibody (HCV Ab), or human immunodeficiency virus antibody (HIV Ab) at screening.
6. Clinically significant abnormalities, as judged by the investigator, in laboratory test results (including hepatic and renal panels, complete blood count, chemistry panel and urinalysis). In the case of uncertain or questionable results, tests performed during screening may be

repeated before randomization to confirm eligibility or judged to be clinically irrelevant for healthy subjects.
7. Participation in an investigational drug study within 3 months prior to screening.
8. Loss or donation of blood over 500 mL within three months (males) or four months (females) prior to screening.
9. Concomitant disease or condition that could interfere with, or for which the treatment of might interfere with, the conduct of the study, or that would, in the opinion of the Investigator, pose an unacceptable risk to the subject in this study.
10. Any confirmed significant allergic reactions (urticaria or anaphylaxis) against any drug, or multiple drug allergies (non-active hay fever is acceptable).
11. Unwillingness or inability to comply with the study protocol for any other reason.
12. Active infection at the time of baseline visit, as evidence by either a body temperature >37.5 °C or CRP >10 mg/L.

Study design

Design

Study phase:	2
Study type:	Observational invasive
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	05-04-2016
Enrollment:	24
Type:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	Prevenar 13 suspension for injection

Ethics review

Approved WMO Date:	03-02-2016
Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)
Approved WMO Date:	04-04-2016
Application type:	First submission
Review commission:	METC Leids Universitair Medisch Centrum (Leiden)

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
EudraCT	EUCTR2015-005650-35-NL
CCMO	NL56174.058.16

Study results

Results posted: 30-09-2020

First publication
05-03-2019