Is augmentation of PORH by rosuvastatin adenosine-receptor mediated?

Published: 14-11-2008 Last updated: 06-05-2024

To study the influence of caffeine on post occlusive reactive hyperaemia before and after 7 days treatment with rosuvastatin.

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

Summary

ID

NL-OMON32791

Source ToetsingOnline

Brief title rosucaf2

Condition

- Other condition
- Coronary artery disorders
- Arteriosclerosis, stenosis, vascular insufficiency and necrosis

Synonym

Heart infarction, Ischaemia

Health condition

ischemie

Research involving

Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud Source(s) of monetary or material Support: Ministerie van OC&W,NWO

Intervention

Keyword: adenosine, ischemia, PORH, rosuvastatine

Outcome measures

Primary outcome

Forearm blood flow (FBF) will be measured as an indicator for post occlusive

reactive hyperaemia (PORH).

Secondary outcome

effect of 7 day treatment with rosuvastatin on lipid profile

Study description

Background summary

Statins form a class of drugs that is widely prescribed for hypercholesterolaemia, specifically to reduce the risk on atherosclerosis by lowering LDL-cholesterol. Next to the effect for which the drug was originally developed, it became obvious that statins have several other beneficial effects. Such pleiotropic effects include the activation of ecto-5*nucleotidase which can increase endogenous adenosine production (by dephosphorylation adenosine monophosphate into adenosine) and subsequently cause vasodilation. A recent study of Meijer et al (not yet published) showed that rosuvastatin significantly augments vasodilation after a brief period of ischemia (post occlusive reactive hyperaemia). However, it is not yet verified whether this increase in post occlusive reactive hyperaemia is truly caused by a rise of extracellular adenosine and subsequent adenosine receptor stimulation. In this study, the mechanism by which rosuvastatin augments post occlusive reactive hyperaemia will be investigated by blocking adenosine receptors with caffeine, a competitive A1 and A2 adenosine receptor antagonist. Caffeine is a medium that can be safely used in normal concentrations to block the adenosine receptor. Thus, if the augmenting effect of rosuvastatin on PORH is caused by an increase of extracellular adenosine formation, this effect can

be diminished by blocking the adenosine receptor using caffeine.

Study objective

To study the influence of caffeine on post occlusive reactive hyperaemia before and after 7 days treatment with rosuvastatin.

Study design

open label cross-over

Intervention

Eight volunteers will receive a 7 day treatment with rosuvastatin 20 mg daily.

Study burden and risks

Treatment with rosuvastatin is not expected to harm the volunteers. Most reported side effects of rosuvastatin are gastro-intestinal complains and myalgia. The volunteers will not benefit directly from participating in this study.

Contacts

Public

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age

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

Inclusion criteria

Healthy volunteers, 18-50 years of age

Exclusion criteria

History of any cardiovascular disease Hypertension (in supine position: systole >140 mmHg, diastole >90 mmHg) Diabetes Mellitus (fasting glucose >7.0 mmol/L or random glucose >11.0 mmol/L) Hyperlipidemia (fasting total cholesterol >5.5 mmol/L or random total cholesterol >6.5 mmol/L) Alanine amino transferase >90 U/L Creatin kinase >440 U/L Raised rabdomyolysis risk GFR <80 ml/min overt clinical signs of hypothyroidism Myopathy in family history Alcohol abuse Concomitant chronic use of medication Participation to any drug-investigation during the previous 60 days as checked with VIP check according to CRCN standard procedures.

Study design

Design

Study phase:4Study type:InterventionalMasking:Open (masking not used)

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Control:	Uncontrolled
Primary purpose:	Treatment

Recruitment

NL	
Recruitment status:	Recruitment stopped
Start date (anticipated):	02-03-2009
Enrollment:	8
Туре:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	Crestor
Generic name:	rosuvastatin
Registration:	Yes - NL outside intended use

Ethics review

Approved WMO Date:	14-11-2008
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)
Approved WMO Date:	22-01-2009
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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	EUCTR2008-005985-30-NL
ССМО	NL25101.091.08