Phase I, randomized, parallel group, placebo control, unicentric, interventional study to assess the effect of expanded human allogeneic adipose-derived mesenchymal adult stem cells on the human response to lipopolysaccharide in human volunteers

Published: 07-07-2014
Last updated: 21-04-2024

To investigate the effect of expanded adipose-derived allogeneic adult stem cells (eASCs) on the inflammatory response to intravenous LPS in humans.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Hepatobiliary neoplasms malignant and unspecified
Study type	Interventional

Summary

ID

NL-OMON41050

Source
ToetsingOnline

Brief title
CELLULA study

Condition

- Hepatobiliary neoplasms malignant and unspecified

Synonym
blood poisening, sepsis

Research involving
Human

Sponsors and support

Primary sponsor: TigeniX
Source(s) of monetary or material Support: TiGenix (bedrijf)

Intervention

Keyword: endotoxemia, inflammation, lipopolysaccharide, mesenchymal stem cells

Outcome measures

Primary outcome

Vital signs and symptoms and laboratory measurements that provide insight in

induction of inflammatory responses.

Secondary outcome

Not applicable.

Study description

Background summary

Preclinical studies have indicated that mesenchymal stem cells can exert beneficial tissue-protective anti-inflammatory effects in inflammation. In the current study we seek to obtain proof-of-principle for the anti-inflammatory efficacy of mesenchymal stem cells in humans by using a well-established model of human inflammation. In this model, endotoxin (lipopolysaccharide, LPS) is administered intravenously, which produces a transient inflammatory response that can be measured by sensitive laboratory techniques. By infusing part of the study population with mesenchymal stem cells we intend to determine whether this intervention indeed can inhibit inflammatory responses in humans.

Study objective

To investigate the effect of expanded adipose-derived allogeneic adult stem cells (eASCs) on the inflammatory response to intravenous LPS in humans.

Study design

Phase I, randomized, parallel group, placebo control, unicentric, interventional study. Thirty two healthy male volunteers aged between 18-35 years will be randomized into the eASCs or placebo group at a 3:1 ratio. The treatment administration will be infused intravenously to the following groups after randomization:
• First arm: 250,000 cells/kg
• Second arm: 1 million cells/kg
• Third arm: 4 million cells/kg
• Fourth arm: placebo
An hour after the end of the eASCs administration, all subjects will be given an intravenous dose of LPS (2 ng/kg). Subjects will be allowed to leave in the evening once deemed clinically stable by the investigator.

Intervention

Suspension of expanded adipose-derived allogeneic adult stem cells (eASCs) at a single dose of 250,000 cells/kg, 1 million cells/kg or 4 million cells/kg by intravenous infusion after suspension in Ringer's lactate solution (8 per group; 8 subjects will receive Ringer*s lactate solution only).
Endotoxin (LPS): a single intravenous injection (2 ng/kg) in all 32 subjects.

Study burden and risks

The burden of this study includes a screening visit, one day hospital admittance and a follow up visit. Infusion of eASCs has been well tolerated in the Phase Ib/IIa carried out by the sponsor in another indication. LPS administration will induce complaints consisting mainly of myalgia, headache, fever and nausea that diminish within 6 hours. Considering the extensive experience with this model, risks are minimal. Subjects will receive two peripheral intravenous catheters for fluid and eASCs or placebo infusion and for blood draws respectively (risk of pain and local hematoma). Future patients with sepsis may benefit from the outcome of this study, as its ultimate aim is to develop new therapeutic strategies to restore the deregulated immune response.

Contacts

Public
TigeniX

Marconi 1
Madrid 28760

ES
Scientific
TigeniX

Marconi 1
Madrid 28760
ES

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

See section 7.2.1 of the protocol. In brief: (1) healthy (based on a medical evaluation including medical history, physical examination, laboratory tests and ECG); (2) male aged between 18 and 35 years; (3) informed consent and able to comply with the requirements and restrictions listed in the informed consent form.

Exclusion criteria

See section 7.2.2 of the protocol. In brief: (1) major illness in the past 3 months or any significant chronic medical illness; (2) history of malignancy; (3) use tobacco products; (4) history, within 3 years, of drug abuse; (5) history of alcoholism and/or drinking more than 5 units of alcohol per day; (6) any clinically relevant abnormality noted on ECG ; (7) use of investigational product within three months prior study; (8) use of prescription or non-prescription drugs and herbal and dietary supplements within 6 months; (9) transfusion of blood (products) within 6 months prior to the study; (10) difficultly in donating blood or accessibility of a vein in left or right arm; (11) donation of more than 350 mL of blood in last 3 months; (12) body mass index >28 kg/m2; (13) not able to comply with a study protocol.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Open (masking not used)
Control:	Placebo
Primary purpose:	Treatment

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	28-11-2014
Enrollment:	32
Type:	Actual

Medical products/devices used

Product type:	Medicine
Generic name:	Somatic cels allogenic
Product type:	Medicine
Brand name:	Allogeneic eASCs 10 million cells/ml suspension for injection, Cx611
Generic name:	Allogeneic eASCs 10 million cells/ml suspension for injection

Ethics review

Approved WMO Date:	07-07-2014
Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)
Approved WMO Date:	02-10-2014

Application type:	First submission
Review commission:	CCMO: Centrale Commissie Mensgebonden Onderzoek (Den Haag)

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	EUCTR2014-002537-63-NL
CCMO	NL49870.000.14