The effect of antibiotics and the gut flora on the immune system.

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Depletion of the gut microbiota by antibiotics leads to accelerated immunosuppression during sepsis, caused by decreased release of microorganism associated molecular patterns (MAMPs) and other microbiota derived products into the circulation and...

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON27808

Bron
Nationaal Trial Register

Verkorte titel
MISSION-1

Aandoening

sepsis, gut flora depletion, systemic immune response

Ondersteuning

Primaire sponsor: Academisch Medisch Centrum, Amsterdam
Overige ondersteuning: ZonMW grant

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

Side effects, laboratory measurements, functional assays and microbiota composition.

1. Side effects will be registered using a graded scale;
2. A HITchip (16S rRNA) analysis to determine microbiome composition;
3. Laboratory measurements: include inflammatory markers, neutrophil activation and -degranulation;
4. Functional assays: ex vivo stimulation of blood cells with nosocomial pathogens.

Toelichting onderzoek

Achtergrond van het onderzoek

Objective:

To investigate the role of the gut microbiota in the systemic priming of immune effector cells.

Study design:

Within-subject-controlled intervention study in human volunteers.

Study population:

Twelve healthy male subjects, 18-35 years of age.

Intervention:

All subjects will be treated with broad spectrum antibiotics (ciprofloxacin, vancomycin, metronidazole) for seven days, in order to deplete the gut microbiota. Blood and faeces will be sampled before, 24 hours and 6 weeks after the 7-day period of antibiotics.

Main study endpoints:

Laboratory parameters for inflammatory responses, functional assays (ex vivo stimulation assay) and gut microbiota composition.

Doel van het onderzoek

Depletion of the gut microbiota by antibiotics leads to accelerated immunosuppression during

sepsis, caused by decreased release of microorganism associated molecular patterns (MAMPs) and other microbiota derived products into the circulation and diminished priming of bone marrow neutrophils.

Onderzoeksopzet

T=0, day 8, week 7.

Onderzoeksproduct en/of interventie

All volunteers will self-administer the following antibiotics for 7 consecutive days (concomitantly):

1. Vancomycin 250mg 3dd2;

2. Ciprofloxacin 500mg 2dd1;

3. Metronidazol 500mg 3dd1.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Healthy;

2. Male between 18 and 35 years of age;

3. Capable of giving written informed consent and able to comply with the requirements and restrictions;

4. Chemistry panel without any clinically relevant abnormality;

5. Normal defecation pattern (defined as <3x/ day and >3x/week).

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Major illness in the past 3 months or significant chronic medical illness;

2. History of any type of malignancy;

3. Past or current gastrointestinal disease which may influence the gut microbiota;

4. Known positive test for hepatitis C antibody, hepatitis B surface antigen or HIV;

5. Current or chronic history of liver disease, or known hepatic or biliary abnormalities;

6. Use of tobacco products;

7. History, within 3 years, of drug abuse;

8. History of alcoholism and/or drinking more than 3 units of alcohol per day;

9. The subject has received an investigational product within three months of day 1;

10. Use of prescription or non-prescription drugs and herbal and dietary supplements within 6 months;

11. Recent (< 12 months) use of antibiotics (any kind, except for dermal antibiotics);

12. Allergy to antibiotics (any kind);

13. Difficulty swallowing pills;

14. Any other relevant issue.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	N.v.t. / één studie arm
Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	15-01-2013
Aantal proefpersonen:	12
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	25-09-2012
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 36859
Bron: ToetsingOnline

Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL3336
NTR-old	NTR3629
CCMO	NL42072.018.12
ISRCTN	ISRCTN wordt niet meer aangevraagd.
OMON	NL-OMON36859

Resultaten

Samenvatting resultaten
N/A