Alveolar Macrophage ImmuNOmetabolism study

Gepubliceerd: 03-08-2021 Laatst bijgewerkt: 18-08-2022

Alveolar macrophages do not depend on glucose metabolism during infection, but on another metabolic source.

Ethische beoordeling	Positief advies
Status	Werving gestart
Type aandoening	-
Onderzoekstype	Observationeel onderzoek, zonder invasieve metingen

Samenvatting

ID

NL-OMON29138

Bron
NTR

Verkorte titel
AMINO

Aandoening

Pneumonia, pulmonary diseases

Ondersteuning

Primaire sponsor: AMC
Overige ondersteuning: AMC

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

To analyse immunometabolic pathways in AMs of healthy volunteers after “ex vivo” exposure to respiratory pathogens or components thereof using an integrative approach.

Toelichting onderzoek

Achtergrond van het onderzoek

Pneumonia is responsible for an inordinate disease burden worldwide. Alveolar macrophages (AMs) are phagocytes that reside on the surface of the lower respiratory tract, where they represent an initial line of leukocytic antimicrobial defense when pathogens invade the lower airways. AMs showcase an extreme plasticity in immunological functions, which is warranted by their localisation. AMs have the capability to transition from anti-inflammatory housekeeping cells into central nodes of immune activity during lung injury and infection. These functions are relatively well described, however the immunometabolism behind this plasticity remains enigmatic. Which metabolic changes facilitate this adaptive potential is unknown. Can we define specific immunometabolic pathways that drive these unique characteristics, also comparing this to blood-derived macrophages? In addition, we will utilize Optical Coherence Tomography and Confocal Laser Endomicroscopy to in vivo visualize the healthy alveolar compartment and airway wall layers, being the direct boundaries of the microenvironment. This is an observational study in healthy volunteers who undergo a bronchoscopy for bronchoalveolar lavage, biopsies, combined with imaging with OCT/CLE, and phlebotomy.

Doel van het onderzoek

Alveolar macrophages do not depend on glucose metabolism during infection, but on another metabolic source.

Onderzoeksopzet

Healthy volunteers will undergo a bronchoscopy at 1 timepoint. At this point, the imaging (OCT and CLE) will be obtained.
The cells obtained from the broncho-alveolar lavage fluid will be used for in vitro studies in which they will be treated/stimulated for 24 hours with different bacterial components mimicing a bacterial infections and with treatments interfering with metabolic pathways.

Onderzoeksproduct en/of interventie

Bronchoscopy, phlebotomy

Contactpersonen

Publiek

Amsterdam UMC, location AMC

Liza Pereverzeva

+31205666378

Wetenschappelijk

Amsterdam UMC, location AMC
Liza Pereverzeva

+31205666378

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

• 18-60 years of age
• non-smoking, or ex-smoking (≥2 years ago)
• no respiratory diagnosis of asthma or COPD
• no history of bronchiectasis, lung cancer, pneumothorax or other significant respiratory disease.
• no history of bleeding disorder
• not using anti-inflammatory and/or anticoagulant medication
• no major comorbidities
• BMI 17-30 kg.m2

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

Individuals who are deemed immunocompromised due to disease or medication

Onderzoeksopzet

Opzet

Type:	Observationeel onderzoek, zonder invasieve metingen
Onderzoeksmodel:	Anders
Toewijzing:	N.v.t. / één studie arm

Blindering:	Open / niet geblindeerd
Controle:	N.v.t. / onbekend

Deelname

Nederland

Status:	Werving gestart
(Verwachte) startdatum:	09-06-2021
Aantal proefpersonen:	20
Type:	Verwachte startdatum

Voornemen beschikbaar stellen Individuele Patiënten Data (IPD)

Wordt de data na het onderzoek gedeeld: Nee

Ethische beoordeling

Positief advies

Datum:	03-08-2021
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL9673
Ander register	METC AMC : METC 2020_101

Resultaten