Molecular expression profiling of upper and lower airway.

Gepubliceerd: 30-11-2009 Laatst bijgewerkt: 18-08-2022

The molecular expression profile of upper and lower airways differs between allergic asthmatics and healthy controls.

Ethische beoordeling	Positief advies
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON26774

Bron
NTR

Verkorte titel
UpLow

Aandoening

allergic asthma
allergic rhinitis
gene expression analysis
microarray
allergisch astma
allergisch rinitis
gen expressie analyse
microarray

Ondersteuning

Primaire sponsor: Academisch Medisch Centrum, Amsterdam
Overige ondersteuning: EU

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

mRNA expression profiles of upper and lower airway epithelium.

Toelichting onderzoek

Achtergrond van het onderzoek

Rationale:

Defining disease severity and control, and phenotyping of patients with asthma are becoming increasingly important for the development of new therapies, and to improve our understanding of pathophysiology, prognosis and the underlying genetic basis for the disease. The capacity to understand biological complexity, like asthma, is often limited by the ability to define relevant phenotypes. Gene expression profiles have shown to be able to dissect this heterogeneity. A realistic target for recognition of specific subphenotypes of asthma by gene expression profiling, is the airway epithelium. Comorbid conditions are increasingly recognised as contributors to uncontrolled asthma, for instance rhinosinusitis. The ‘united airways’ concept suggests that upper and lower airways inflammatory processes such as asthma and rhinitis are of a similar type. Coherence between the upper and lower airway could now be analyzed by comparing the molecular expression profiles of both the upper and lower airway epithelium within individuals.

Hypothesis:
We postulate that the molecular expression profile of upper and lower airways differs between allergic asthmatics and healthy controls. Furthermore, we postulate that the molecular expression profile of the lower airway is related to the profile of the upper airway.

Study design:
Cross-sectional study with two visits. Visit 1: screening of clinical characteristics. Visit 2: 4 nasal biopsies, followed by a bronchoscopy for 4 brushes and 2 biopsies.

Study population:
Four groups of 6 patients: 6 allergic asthmatic patients with rhinitis, 6 nonasthmatic patients with allergic rhinitis, 6 nonatopic subjects with asthma and/or rhinitis, and 6 healthy subjects.

Main study parameter:
mRNA expression profiles of upper and lower airway epithelium.

Country of recruitment: Netherlands.

Doel van het onderzoek

The molecular expression profile of upper and lower airways differs between allergic asthmatics and healthy controls.

Onderzoeksopzet

1. Screening visit (inclusion/exclusion, spirometry, methacholine challenge, skin prick test): -28 tot -14;

2. Visit 2 (reversibility, nasal allergen provocation, nasal biopsies, brochoscopy with brushes and biopsies): 0.

Onderzoeksproduct en/of interventie

1. Physical examination;

2. Spirometry;

3. Mathacholine challenge;

4. Skin-prick test;

5. Nasal allergen provocation (nonatopic and healthy subjects only);

6. 4 nasal biopsies;

7. Bronchoscopy with 4 brushes and 2 biopsies.

Contactpersonen

Publiek

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

Asthmatics:

1. Age 18-50 years;

2. History of episodic chest tightness and wheezing;

3. Intermittent or mild persistent asthma according to the criteria by the Global Initiative for Asthma;

4. Non-smoking or stopped smoking more than 12 months ago and 5 pack years or less;

5. Clinically stable, no exacerbations within the last 6 weeks prior to the study. Occasional usage of inhaled short-acting β2-agonists as rescue medication is allowed, prior and during the study;

6. Steroid-naïve or those patients who are currently not on corticosteroids and have not taken any corticosteroids by any dosing-routes within 8 weeks prior to the study;

7. Baseline FEV1 ≥ 70% of predicted;

8. Airway hyperresponsiveness, indicated by a positive methacholine challenge with PC20< 8 mg/ml;

9. A known history of house dust mite allergy in combination with a perennial allergy with an isolated positive skin prick test/RAST test against appropriate allergens;

10. Persistent, moderate to severe rhinitis according to the Allergic Rhinitis and its impact on Asthma (ARIA) 2008 guideline.

Nonasthmatics with allergic rhinitis:

1. Age 18-50 years;

2. Persistent, moderate to severe rhinitis according to the Allergic Rhinitis and its impact on Asthma (ARIA) 2008 guideline;

3. A known history of house dust mite allergy in combination with a perennial allergy with an isolated positive skin prick test/RAST test against appropriate allergens;

4. Non-smoking or stopped smoking more than 12 months ago and 5 pack years or less;

5. Clinically stable, no exacerbations within the last 6 weeks prior to the study;

6. Steroid-naïve or those patients who are currently not on corticosteroids and have not taken any corticosteroids by any dosing-routes within 8 weeks prior to the study;

7. Baseline FEV1 ≥ 70% of predicted;

8. No history of episodic chest tightness and wheezing;

9. Negative methacholine challenge.

Nonatopics with rhinitis and/or asthma:

1. Age 18-50 years;

2. Negative skin prick test (SPT) to the 12 common aeroallergen extracts;

3. Negative nasal provocation test;

4. Non-smoking or stopped smoking more than 12 months ago and 5 pack years or less;

5. Steroid-naïve or those patients who are currently not on corticosteroids and have not taken any corticosteroids by any dosing-routes within 8 weeks prior to the study;

6. A history of episodic chest tightness and wheezing, and/or signs of persistent rhinitis;

7. Baseline FEV1 ≥ 70% of predicted.

Healthy subjects:

1. Age 18-50 years;

2. Negative skin prick test (SPT) to the 12 common aeroallergen extracts;

3. Negative nasal provocation test;

4. Non-smoking or stopped smoking more than 12 months ago and 5 pack years or less;

5. No usage of steroids by any dosing route;

6. Baseline FEV1 ≥ 70% of predicted;

7. Negative methacholine challenge or PC20> 8 mg/ml;

8. Negative history of pulmonary and any other relevant disease.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. History of clinical significant hypotensive episodes or symptoms of fainting, dizziness, or light-headedness;

2. Chronic use of any other medication for treatment of lung disease other than short-acting β2-agonists during the study;

3. Ongoing use of tobacco products of any kind or previous usage with a total pack year ≥ 6.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Niet-gerandomiseerd
Blindering:	Open / niet geblindeerd
Controle:	Geneesmiddel

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	15-12-2009
Aantal proefpersonen:	24
Type:	Verwachte startdatum

Ethische beoordeling

Positief advies

Datum:	30-11-2009
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	NL2008
NTR-old	NTR2125
Ander register	MEC Academisch Medisch Centrum Amsterdam : MEC 09/243
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A