

Cystic fibrosis: a hereditary inflammatory process

Submission date 12/09/2005	Recruitment status No longer recruiting	☐ Prospectively registered
Registration date 12/09/2005	Overall study status Completed	☐ Protocol
Last Edited 17/09/2008	Condition category Nutritional, Metabolic, Endocrine	☐ Statistical analysis plan
		☐ Results
		☐ Individual participant data
		☐ Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
NTR91

Study information

Scientific Title

Study objectives

One out of 3600 new-born children in the Netherlands has cystic fibrosis (CF). It is an autosomal recessive disease and about 70% of the Dutch CF-patients are homozygous for the delta-F508 mutation. Although the genetic mutation is identical in this group of patients, the pulmonary disease is very diverse. Causative factors are environmental and also co-genetic ones. Morbidity is caused by chronic inflammation and infection of the lungs, which leads to irreversible lung damage.

Neutrophils play a key role in the inflammatory cascade. It is assumed that parts of the acute inflammatory response of the neutrophil (chemotaxis/IL8 ± adhesion/selectins ± activation /TNFα ± production of e.g. superoxides or myeloperoxidase ± tissue destruction) play an important role in the inflammatory process in CF. There is a higher concentration of mediators (IL-8, sICAM1, sE-Selectin, TNFα) in patients with CF than in other patients with airway infections. The CFTR protein acts not only as a Cl channel but also as a Na/H antiport and influences the intracellular pH. This might affect the functional activity of the neutrophil. Recently, new activation markers (MoPhabs A17 and A27) located on leukocytes were described that may be an early sign of pulmonary inflammation. To be able to predict and intervene in the inflammatory process would improve the prognosis especially in young children before the process of irreversible lung damage.

The use of new and powerful inhaled corticosteroid medication enables us to give anti-inflammatory therapy to young children without the systemic side-effects of orally administered steroids.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics approval received from the local medical ethics committee

Primary study design

Interventional

Study design

Randomised, double blind, placebo controlled, parallel group trial

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Cystic fibrosis

Interventions

Inhaled HFA-Beclomethasone Dipropionate (Qvar®) 200 mcg twice daily by aerochamber or a placebo (also inhaled by aerochamber).

Intervention Type

Drug

Phase

Not Specified

Drug/device/biological/vaccine name(s)

Inhaled HFA-Beclomethasone Dipropionate

Primary outcome(s)

Pulmonary

1. Forced expiratory volume in one second (FEV1), forced vital capacity (FVC), residual volume (RV)/total lung capacity (TLC) % after 3 years
2. Rint measurements

Key secondary outcome(s)

Immunological:

1. Neutrophil markers: MoPhabs A17 and A27, CD11b, CD11a
2. Interleukin-8 (IL-8), soluble intercellular adhesion molecule 1 (sICAM1), sE-Selectin, tumour necrotising factor alpha (TNFa)
3. End tidal carbon monoxide in exhaled breath

Microbiological:

1. Respiratory pathogens in culture

Serological:

1. Seroconversion to anti-pseudomonal antibodies

Clinical:

1. Adverse events
2. Clinical parameters (body weight, height, fat free mass)
3. Number of pulmonary exacerbations
4. Antimicrobial agent use
5. Quality of life questionnaire scores

Radiological:

1. Chest radiograph scored by CF chest radiograph scoring systems

Completion date

01/12/2005

Eligibility**Key inclusion criteria**

For 3-years randomised controlled trial:

1. CF diagnosis as confirmed by sweat chloride test and/or genotyping
2. CF-patients 2 - 10 years old
3. Informed consent
4. Capable of using inhaled corticosteroids by aerochamber
5. Compliant to regular therapy

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Child

Lower age limit

2 Years

Upper age limit

10 Years

Sex

All

Key exclusion criteria

For 3-years randomised controlled trial:

1. CF-patients less than 2 years
2. CF-patients greater than 10 years
3. Use of anti-inflammatory therapy in a period of 2 months before inclusion (orally administered steroids, inhaled corticosteroids and non-steroid anti-inflammatory drugs, non-steroidal anti-inflammatory drugs [NSAIDs])
4. Disease, other than CF, that affects growth
5. Participation in another study

Date of first enrolment

01/01/2002

Date of final enrolment

01/12/2005

Locations**Countries of recruitment**

Netherlands

Study participating centre

Universitair Medisch Centrum, locatie AZU

Utrecht

Netherlands

3508 GA

Sponsor information**Organisation**

University Medical Centre Utrecht (UMCU) (The Netherlands)

ROR

<https://ror.org/04pp8hn57>

Funder(s)

Funder type

Government

Funder Name

The Netherlands Organization for Scientific Research (NWO) (The Netherlands)

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Not provided at time of registration