Effect of familial intrahepatic cholestasis type 1 on the nose potential difference response.

Published: 04-01-2010
Last updated: 05-05-2024

The aim of this study is to determine whether nose potential difference response is impaired in patients with FIC1-deficiency.

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Hepatobiliary disorders congenital
Study type	Observational invasive

Summary

ID

NL-OMON33224

Source
ToetsingOnline

Brief title
FIC1 and NPD-measurement

Condition

- Hepatobiliary disorders congenital
- Hepatic and hepatobiliary disorders

Synonym
bile accumulation, familial intrahepatic cholestasis type 1 (FIC1 disease)

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Utrecht
Source(s) of monetary or material Support: Ministerie van OC&W,BRIC patiënten vereniging

Intervention

Keyword: BRIC1, CFTR, FIC1 disease, Nose Potential Difference

Outcome measures

Primary outcome

Potential difference in milivolt (mV) in the nasal epithelium.

Secondary outcome

Not applicable.

Study description

Background summary

Familial intrahepatic cholestasis type 1 (FIC1) refers to a group of autosomal-recessive familial liver disorders, characterized by intrahepatic cholestasis due to mutations in the ATP8B1 gene. FIC1 disease comprises two different disorders: progressive familial intrahepatic cholestasis type 1 (PFIC1) and benign recurrent intrahepatic cholestasis type 1 (BRIC1). In addition extrahepatic symptoms are described.
The exact mechanisms by which dysfunction of FIC1 cause cholestasis and extrahepatic symptoms are currently unknown.
FIC is thought to play an important role in maintaining the asymmetry of the phospholipid membrane, which is essential
for stability of the cell membrane and function of transmembrane-transporters. One of these transmembrane-transporters is the cystic fibrosis transmembrane regulator (CFTR). It is suggested that the CFTR function is compromised in FIC1 patients.
NPD measurements are sensitive to partial CFTR function and NPD is useful in the diagnosis of classical and atypical cystic fibrosis (CF).
Here we would like to study the hypothesis that the NPD response is impaired in patients with FIC1 deficiency.
The outcome of this study might help us to elucidate the function of FIC1 and unravel the pathogenesis of FIC1 disease which may contribute in the development of new therapy. In addition, NPD might be useful in monitoring the effects of these possible future therapeutic approaches.

Study objective

The aim of this study is to determine whether nose potential difference

response is impaired in patients with FIC1-deficiency.

Study design

Observational study with invasive measurements. No intervention.

Study burden and risks

We will approach approximately 10 patients diagnosed with BRIC1 and being treated by gastro-enterologists in the UMC Urecht. We will ask them to participate in our study.
The transepithelial nasal potential difference (NPD) will be measured in the UMC Utrecht and takes approximately 2 hours.
A small catheter will be introduced into the nostril and the tip is positioned onto the respiratory mucosa under the concha nasalis inferior. A reference electrode will be placed in the subcutaneous space of the lower arm.
NPD measurements have shown to be useful in the diagnosis of classical and atypical cystic fibrosis (CF) and no adverse effects have been reported so far.

Contacts

Public
Universitair Medisch Centrum Utrecht

Lundlaan 6
3584 EA, Utrecht
Nederland
Scientific
Universitair Medisch Centrum Utrecht

Lundlaan 6
3584 EA, Utrecht
Nederland

Trial sites

Listed location countries

Netherlands

Eligibility criteria

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

Inclusion criteria

Diagnosis of ATP8B1-deficiency which means two mutations identified in the ATP8B1-gene and at least one episode of normal or low γ-glutamyl transpeptidase (GGT) cholestasis. Normal value: * <55 U/L en * <40 U/L.
- Age older than 18 years.
- Intact nasal respiratory epithelium.

Exclusion criteria

- Age younger than 18 years.
- inflammation of the nasal respiratory epithelium, localized hemorrhage or viral infection in the nasal epithelium.
- Smokers.

Study design

Design

Study type:	Observational invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)
Control:	Active
Primary purpose:	Basic science

Recruitment

NL
Recruitment status:	Recruitment stopped
Start date (anticipated):	22-01-2010

Enrollment:	10
Type:	Actual

Ethics review

Approved WMO Date:	04-01-2010
Application type:	First submission
Review commission:	METC Universitair Medisch Centrum Utrecht (Utrecht)

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
CCMO	NL27553.041.09