Microbiota profiling in pediatric inflammatory bowel disease by means of IS-pro

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Primary objectives:to describe the composition of intestinal microbiota in the course of pediatric IBD-patients by IS-proto describe the composition of intestinal microbiota of apparently healthy children, aged 4-17 years, by IS-pro Secondary...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Gastrointestinal inflammatory conditions
Study type	Observational invasive

Summary

ID

NL-OMON37721

Source
ToetsingOnline

Brief title
Microbiota profiling in pediatric inflammatory bowel disease

Condition

- Gastrointestinal inflammatory conditions

Synonym
chronic intestinal inflammation, Inflammatory bowel disease (IBD)

Research involving
Human

Sponsors and support

Primary sponsor: Vrije Universiteit Medisch Centrum
Source(s) of monetary or material Support: Fonds aangevraagd bij NutsOhra. Eigen financiering vakgroep kinder-MDL

Intervention

Keyword: children, Inflammatory bowel disease (IBD), Intestinal microbiota, IS-pro

Outcome measures

Primary outcome

The fecal and mucosal samples will be analysed by means of IS-pro. The obtained intestinal microbiota profiles of the participants will subsequently be analysed in order to get better insight in the composition of the intestinal microbiota of newly diagnosed IBD patients (see study-objectives)

Secondary outcome

not applicable

Study description

Background summary

Inflammatory bowel disease (IBD) compromises a group of chronic, relapsing inflammatory disorders of the gastrointestinal tract, consisting of two major entities; Crohn*s disease (CD) and ulcerative colitis (UC). During the last few years significant advance has been achieved in the understanding of the pathogenesis of IBD. It is commonly accepted that both genetic as well as environmental factors play an important role in its etiology. Furthermore, an imbalance in the intestinal microflora is considered to be characteristic for IBD. Analysis of the enteric bacterial flora has revealed major differences in the composition of this flora between adult patients with active IBD and healthy controls. Until now no specific pathogenic micro-organism has been associated directly with the pathogenesis of IBD.

In children with newly diagnosed CD primary induction therapy consists of exclusive enteral nutrition (EEN) with polymeric liquid formula during 6 weeks. Change of the intestinal microflora during this period has been described and this suggests a crucial role of enteral bacteria in CD. Data concerning microflora in the pathogenesis of pediatric IBD and the role in achieving induction and remission are far from complete yet. As a consequence, the role of bacteria in the development of IBD remains to be clarified.

Recent development of culture-independent techniques, based on bacterial DNA analysis, has resulted in an increased knowledge of the intestinal microbiota. These new molecular techniques include fluorescent in situ hybridization (FISH), denaturing gel electrophoresis studies (DGE), real-time quantitative PCR (qPCR), and cloning and sequencing. All these methods have limitations, including low reproducibility, high labour intensiveness or restriction to analysis of user-defined species. Deeper insight into the intestinal flora can be of great importance as this may lead to improved diagnostic, prognostic and therapeutic options. A highly reproducible, broad-range molecular techniques has recently been developed and validated to investigate intestinal microbiota: IS-pro, based on the 16S-23S interspacer (IS) region (Budding 2010). In this study the microflora of children with newly diagnosed IBD are analysed throughout time by means of this new IS-pro method.

Study objective

Primary objectives:
to describe the composition of intestinal microbiota in the course of pediatric IBD-patients by IS-pro
to describe the composition of intestinal microbiota of apparently healthy children, aged 4-17 years, by IS-pro

Secondary objectives:
1- to compare composition of faecal microbiota in active IBD (CU and CD) with controls
2- compare composition of faecal microbiota in active IBD and inactive IBD
3- to correlate microbiota in mucosal biopsies (mucosa associated microbiota) and faecal samples at time of diagnosis IBD.

Study design

First visit
Children suspected of IBD and meeting the inclusion criteria, and their parents are asked to participate in this study.

Subsequent visits (interval according routine procedure IBD)
Written informed consent is obtained at first subsequent visit (see informed consent letter)
- During routine diagnostic colonoscopy mucosal biopsy is taken from ileum, ascending colon and sigmoid colon (10 cm above the rectal verge). So in total 3 extra biopsy samples are taken.
- Patient is asked to collect a faecal sample in a provided container prior to bowel cleansing in suspected IBD and at week 1, 3, 6, 18, 26 and 52, after the diagnosis has been established. An addiotional faecal sample will be collected in case of a relapse of IBD. The patient is asked to cool faecal samples at home preferably at -20ºC, within 2 hours of collection, and bring these samples

along at subsequent regular outpatient ward visits. In the hospital faecal samples are stored at -20ºC before further handling. DNA isolation of all samples will be carried out according to above described procedure.

Routine laboratory tests are performed at subsequent outpatient visits, including C-reactive protein, leucocytes, platelets, albumin. (hence no additional laboratory investigations)
Routine faeces test on calprotectin test is performed at diagnosis and at 3 months after start induction therapy.
No extra blood samples are taken and no extra hospital visits are required for this study

Intervention

harvesting of 3 mucosal biopsies (Ileum, colon and sigmoid)

Study burden and risks

Collection of 3 extra mucosal samples during the first routine colonoscopy participation will lead to only minimal increased risk and burden to the patient.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adolescents (12-15 years)
Adolescents (16-17 years)
Children (2-11 years)

Inclusion criteria

- Age 17 years and below
- diagnosis of IBD (Crohn disease and ulcerative colitis) based on regular endoscopy, histology, intestinal MRI, video capsule endoscopy or a combination of these (IBD Working Group ESPGHAN, 2005)

Exclusion criteria

- Proven infectious colitis during the last month as determined by positive stool culture for Salmonella, Shigella, Yersinia, Campylobacter, Clostridium toxins in stools or parasites in stools
- Use of antibiotics in the last 3 months prior to inclusion
- Use of probiotics in the last 3 months prior to inclusion
- Use of immunosuppressive therapy prior to the study
- Patients diagnosed with immunocompromised disease (any of various diseases that suppress the immune system)

Study design

Design

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

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	10-09-2012
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO

Date:	02-08-2012
Application type:	First submission
Review commission:	METC Amsterdam UMC

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	NL39254.029.12