

Scientific Research Process

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Title: Distinct gut microbiota profiles in patients with primary sclerosing cholangitis and ulcerative colitis

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What did this study explore?

Inflammatory bowel disease (IBD) accompanying primary sclerosing cholangitis (PSC) is considered to be a phenotype (PSC-IBD) distinct from ulcerative colitis (UC). The aim of this study was to characterize the composition of gut bacterial microbiota in patients with primary PSC, PSC-IBD and UC.

How did the authors perform all experiments?

Stool samples were prospectively collected from all study subjects. We used the state-of-the-art methods for DNA extraction, amplification, library preparation and massive parallel sequencing. Sequencing of the 16S rRNA gene included the V3 and V4 regions and was performed on Illumina MiSeq platform.

How did the authors process all experimental data?

Output data were further processed in QIIME employing MaAsLin and LEfSe tools.

How did the authors deal with the pre-study hypothesis?

Prior to the study initiation, we hypothesized that PSC (and/or concomitant IBD) has specific microbial features that are distinct from those of UC and healthy individuals. This hypothesis was confirmed in the subsequent study.

What are the novel findings of this study?

In this study, we were able to identify several novel gut microbial features specific for dysbiosis in PSC and UC (e.g. increased abundance of genus *Rothia* in PSC patients) and to simultaneously confirm some of the findings presented in previous studies.