The effect of non-antibiotic therapy on the gut resistome in inflammatory bowel disease patients

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The IBD patiens' gut microbiota is typically in a state of dysbiosis (disturbed), and there are usually increased numbers of pathobionts belonging to the phylum Proteobacteria. IBD medication has been shown to have antibiotic-like effects and may further result in the gut microbiota changing into a community with higher prevalence of antibiotic resistant species. The gut resistome, the collection of antibiotic resistance genes in the gut microbiota, may increase. Changes in microbiota composition and resistome in patients with an increased risk of infections, could have serious consequences for infection treatment. The accumulation and secondary spread of antibiotic resistance may also have a general health concern.

We study the microbiota and resistome of untreated IBD patients before the start of medical treatment, and up to five years after treatment initiation to map the changes in microbiota composition and resistome. Knowledge on the effects of IBD medication on gut microbiota and resitome will inform development of new and better, maybe even personalised, IBD medication.

The study will work out from the following hypothesis: IBD patients develop a more antimicrobial resistant gut microbiota as a result of both biological and non-biological IBD medical therapy.