

The effect of probiotic *Lactobacillus plantarum* IS 10506 supplementations on the microbiota profile in women with functional constipation

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Statement of the Problem: Functional currently conceptualized as a disorder of brain-gut interaction, the bacterial microbiome has introduced a new perspective in brain-gut-axis communication and the understanding of bowel disorder. The interaction between the human microbiome and influences several human metabolic functions and impacts our well-being. The precise etiology of constipation is still unknown, therapy options such as *Lactobacillus plantarum* IS 10506 indigenous probiotics from Dadih West Sumatra Indonesia, implemented as an alternative therapy for functional constipation. Current methodologies for microbiome studies in functional constipation such as genome sequencing will be discussed.

Methodology & Theoretical Orientation: Under license of ethic committee and clinical trial registration, 28 women with Functional constipation and 10 non-constipation women, were participated in randomized double-blind clinical trial. After 21 days probiotic, supplementation of *Lactobacillus plantarum* IS 10506, the Illumina protocol was applied to prepare 16S ribosomal RNA gene amplicons. The variable V3 and V4 regions of the 16S rRNA gene were amplified from bacterial DNA obtained from faecal samples. The sequencing raw data were processed by the QIIME pipeline.

Findings: There are different microbiota profiles between women with or without constipation based on Firmicutes: Bacteroidetes ratio and pipeline taxa analysis. One of our finding is there was an dysbiosis profile at family taxa when we analyzed heatmap based on Wilcoxon rank that *Prevotella* (SCFA producer) non constipation (H) higher than constipation, and after probiotic supplementation (PR), Ruminococcaceae (link with stool consistency) tends to be balance (eubiosis) to non-constipation (H) compared to the placebo (PL), in line with Vandeputte et al.

Conclusion & Significance: Women with functional constipation characterized with dysbiosis microbiota profile and after 21 days probiotic supplementation there was an eubiosis tendency that assumed correlated with improvement of functional constipation symptom

Biography

Pratiwi D Kusumo is a lecturer in Universitas Kristen Indonesia. She is interested in the study of probiotic and its correlation with immune system, microbiome profile (microbiota and metabolite like SCFA). As a biomedical lecturer, she wants to learn more about microbiome, and it is ecological environment system

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