

Topic: AS07 DMH - Manipulation of the Microbiome for treating diseases (Phage therapy, diet, nutrition, new approaches, etc.)

GUT MICROBIOTA AND NAFLD: ASSOCIATION OR CONFLICT?

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Background and Aims: Nonalcoholic fatty liver disease is a liver disease that affects about 25-30% of the population. Gut microbiota may affect all risk factors for the NAFLD development by disturbing metabolic homeostasis, enhancing IR, increasing oxidative stress and developing liver inflammation. The aim of this study was to explore the influence of gut microbiota on liver fat increasing.

Methods: The study included 54 patients with NAFLD based on elastography (34 men, 20 women) (average age 46.64±2.52). The controls involved 32 patients (14 men, 18 women) (average age 32±1.54) without NAFLD. Microbiom quantification of different taxa by qPCR using primers targeting the 16S rRNA gene, specific for Firmicutes, Actinobacteria and Bacteroidetes was performed.

Results: The Bacteroidetes level was significantly higher in controls (45,54±5,49 vs.21,10±3,39). Actinobacteria (22,13±2,47 vs 14,53±2,75), F/B index (4,02±1,00 vs 1,82±0,45) in patients with NAFLD was above than in controls. F/B index growth was leading to the triglycerides (r=0.53), ALT (r=0.61) and VLDL (r=0.4) increasing. Microbiota of control group played a protective role by reducing aggressive factors - the Actinobacteria growth led to the decreasing of GGTP (r=-0.42), direct bilirubin (r=-0.34) and CRP (r=-0.36). F/B index growth caused the decreasing of GGTP (r=-0.36) and TNF-a (r=-0.29)

Conclusions: The microbiota regulation could be effective in the direction of reducing harmful bacteria (F/B index) and increasing the beneficial ones (Bacteroidetes) only in patients with NAFLD. The same bacteria intake in patients without NAFLD will not prevent the disease occurrence and could provoke the unespecial effects, thus the question remains whether it is necessary to take probiotics profilactically.