FECAL MICROBIOTA TRANSPLANTATION IN METABOLIC SYNDROME

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Introduction. Metabolic syndrome (MetS) is a multifactorial disease, and the gut microbiota plays an important role in its pathogenesis. Moreover, recent studies suggest associations between gut dysbiosis and components of MetS.

Materials and methods. A descriptive review was conducted on the effects of FMT on MetS components, based on the specialized literature from the period 2015-2025, selected from the PubMed, Springer Nature, BMC databases.

Results. The aim of the study is to evaluate the impact of fecal microbiota transplantation (FMT) on patients with MetS. Most of the reviewed studies, in the first 6 weeks after FMT, reported changes in the composition of the gut microbiota and improvements in some clinical parameters: reduction in glycemia, insulinemia and glycated hemoglobin (HbA1c) levels, and increase in HDL-cholesterol levels. Regarding LDL-cholesterol, triglycerides, anthropometric parameters and blood pressure, most studies did not identify significant changes. These results suggest that FMT may improve some metabolic parameters in the short term. Regarding long-term effects, fewer studies have been conducted and their results are controversial. At least 2 studies associate FMT with reduction in abdominal adiposity and changes in the overall composition of the gut microbiota at 26 weeks after FMT. The improvement in insulin sensitivity, reduction in blood glucose, HbA1c and LDL-cholesterol were transient and, in most cases, statistically insignificant. Also, there were no significant differences in weight and body mass index compared to the placebo group.

Conclusions. Fecal microbiota transplantation, as an adjuvant therapy, may be useful in the treatment of metabolic syndrome. However, further studies are needed to better understand the molecular mechanisms by which gut microbiota metabolites influence laboratory parameters and clinical conditions of metabolic syndrome