

Neurological effects of probiotics in patients with Parkinson's disease and constipation

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Introduction: Constipation is one of the most frequent non-motor symptoms of Parkinson's disease (PD). Previous research highlighted the association of constipation with disease duration and severity [1]. Furthermore, gut microbiota changes and brain-gut-axis (BGA) dysregulation are common in patients with PD, and these alterations are related with clinical manifestations [2, 3]. For this reason, probiotics, balancing the gut microbiota, are emerging as a potential therapeutic approach for PD patients.

Objective: To assess neurological and gastroenterological effects in PD patients with constipation after the administration of symbiotics (Enterolactis duo), with a focus on neuropsychological, cognitive and symptomatic impact.

Methods: This study enrolled patients with stable PD who met diagnostic criteria for functional constipation and/or irritable bowel syndrome with constipation according to Rome IV Criteria. Patients received a symbiotic treatment (Enterolactis duo, 4 sachets/day, containing the probiotic Lactobacillus casei and prebiotic inulin) for 12 weeks. The Montreal Cognitive Assessment (MoCA), Movement Disorder Society-Sponsored Revision of Unified Parkinson's Disease Rating Scale (MDS-UPDRS), Scales for Outcomes in Parkinson's disease - Autonomic Dysfunction (SCOPA-AUT), Toronto Alexithymia Scale (TAS-20), Reading the Mind in the Eyes Test (RMET), Parkinson Anxiety Scale (PAS), State-Trait Anxiety Inventory (STAI-Y), Beck Depression Inventory (BDI II), Hamilton depression rating scale (HAM-D) were collected pre- and post-intervention, in addition to a gastroenterological evaluation (PAC-SYM questionnaire, number of complete bowel movements per week, degree of defecation effort, Bristol stool Scale (BSS) and other items) before and after the treatment.

Results: 29 patients (16 women and 19 men) were consecutively enrolled. After treatment patients performed better in TAS-20 ($p=0,011$), SCOPA-AUT ($p=0,004$) and MDS-UPDRS part 1 score ($p=0$). PAS-A ($p=0,091$) and HAM-D ($p=0,072$) score show a trend towards significance. Gastroenterological scales also showed a significant improvement.

Conclusions: Probiotics treatment can effectively improve non motor features in PD patients, as well as improve constipation. Our data suggest that the addition of probiotics acting on the gut-brain-gut axis may be a useful therapeutic approach in PD.

References:

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