Randomized Controlled Trial Clin Nutr. 2019 Jun;38(3):1031-1035.
doi: 10.1016/j.clnu.2018.05.018. Epub 2018 Jun 1.

Clinical and metabolic response to probiotic administration in people with Parkinson's disease: A randomized, double-blind, placebo-controlled trial

Omid Reza Tamtaji [1], Mohsen Taghizadeh [2], Reza Daneshvar Kakhaki [3], Ebrahim Kouchaki [4], Fereshteh Bahmani [2], Shokoofeh Borzabadi [5], Shahrbanoo Oryan [5], Alireza Mafi [2], Zatollah Asemi [6]

Affiliations
PMID: 29891223 DOI: 10.1016/j.clnu.2018.05.018

Abstract

Background & aims: The investigation was done to assess the impacts of probiotic supplementation on movement and metabolic parameters in individuals with Parkinson's disease (PD).

Methods: The study is randomized, double-blind, placebo-controlled clinical trial, which was done in sixty people with PD. Individuals were randomly divided into two groups in order to take either 8 × 10^9 CFU/day probiotic or placebo (n = 30 each group) that lasted 12 weeks. The Movement Disorders Society-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) was recorded at pre- and post-intervention.

Results: Compared with the placebo, consuming probiotic decreased MDS-UPDRS (-4.8 ± 12.5 vs. +3.8 ± 13.0, P = 0.01). Probiotic supplementation also reduced high-sensitivity C-reactive protein (-1.6 ± 2.5 vs. +0.1 ± 0.3 mg/L, P < 0.001) and malondialdehyde (-0.2 ± 0.3 vs. +0.1 ± 0.3 μmol/L, P = 0.006), and enhanced glutathione levels (+40.1 ± 81.5 vs. -12.1 ± 41.7 μmol/L, P = 0.03) in comparison with the placebo. Additionally, probiotic consumption resulted in a statistically significant reduction in insulin levels (-2.1 ± 3.4 vs. +1.5 ± 5.1 μIU/mL, P = 0.002) and insulin resistance (-0.5 ± 0.9 vs. +0.4 ± 1.2, P = 0.002), and a statistically significant rise in insulin sensitivity (+0.01 ± 0.02 vs. -0.006 ± 0.02, P = 0.01) in comparison with the placebo. Probiotic intake had no any significant impact on other metabolic profiles.

Conclusions: Our study evidenced that 12 weeks of probiotic consumption by individuals with PD had useful impacts on MDS-UPDRS and few metabolic profiles. Registered under ClinicalTrials.gov Identifier no. http://www.irct.ir: IRCT2017082434497N4.

Keywords: Inflammation; Movement disorders; Oxidative stress; Parkinson's disease; Probiotic.

Related information

Cited in Books
MedGen
PubChem Compound (MeSH Keyword)

LinkOut - more resources

Full Text Sources

ClinicalKey

Elsevier Science

Other Literature Sources

scite Smart Citations

Medical

ClinicalTrials.gov

Genetic Alliance

MedlinePlus Health Information

Research Materials

NCI CPTC Antibody Characterization Program

Miscellaneous

NCI CPTAC Assay Portal