KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Oral
Abstract Submission No. : OR-1366

Effects of Probiotic Supplementation on Reno-protective and Oxidative Stress Indices in subjects with Diabetes mellitus: A Randomized Double-Blind Clinical Trial

Senthil Kumar Subramani[1], Rohit Sharma[1], Arjun Yadav[2], Shailendra Raghuwanshi[1], GBKS Prasad[2]
[1]Department of Biotechnology, Tropilite Foods Pvt. Ltd, India
[2]Department of Centre for Translational Research, SOS in Biochemistry, Jiwaji University, India

Objectives: Kidney disease is one the secondary complications of diabetes. Probiotics are live microorganisms promoted with claims that they provide health benefits when consumed adequate amount, health benefits including antidiabetic, anti-inflammatory and antioxidant properties. This study aimed to determine the effects of probiotic supplementation on renal function and oxidative stress biomarkers in Type II Diabetes mellitus (T2DM) patients.

Methods: In a randomized double-blind placebo-controlled clinical trial, 60 Subjects with aged 30–65 years were selected from CTR, Jiwaji University and assigned into two groups; Subjects in the probiotic group received a daily capsule containing Lactobacillus acidophilus, Bifidobacterium bifidium & Saccharomyces boulardii each 0.5 Bn/g and Lactobacillus plantarum, Bacillus clausii each 0.25 bn/g with 125mg FOS. BD for 12 weeks. (Placebo group only 125mg FOS in a capsule). In the baseline and at the end of the study, physical activity levels, and dietary intakes were assessed. Anthropometric parameters, blood glucouse, creatinine, urea, BUN , uric acid malondialdehyde (MDA), superoxide dismutase (SOD), reduced glutathione (GSH), and catalase (CAT) activities were measured.Statistical analysis was carried out using a paired t-test and student t- test.

Results: There was no significant difference between the two groups for demographic characteristics, anthropometric parameters at the baseline of study. The mean fasting blood glucose levels were reduced by 16.3 %.The probiotic supplementation resulted in a significant improvement in Urea by 14.7 , 13.9% BUN 14.2, 10.5% Uric acid 11.8, 8.9 % Creatinine 11 ,6% in subjects taken probiotic placebo capsules respectively. It also observed that the significant increase in GSH($p< 0.01$), SOD($p< 0.01$), CAT($p< 0.01$) and decrease in MDA level ($p< 0.01$). Significant difference was observed between-group for these enzymes activities & other parameters at the end of the study.

Conclusions: Overall, the results demonstrate that probiotics could improve renal function and oxidative stress factors among T2DM patients.