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Effects of herbo-biotic Supplementation on Reno-protective and Oxidative Stress Indices in subjects with Diabetes mellitus

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Objectives : Kidney disease is one of the secondary complications of diabetes. Herbo-biotics, which are a combination of herbal medicine and probiotics, offer several health benefits, including antidiabetic, anti-inflammatory, and antioxidant properties. This study aimed to determine the effects of herbo-biotics on renal function and oxidative stress biomarkers in patients with T2DM.
Methods : This study involved 60 subjects aged 30 to 65 years, who were selected from the Centre for Translational Research at Jiwaji University. The participants were divided into two groups. Those in the herbo-biotic group received probiotics and herbal medicine, while the control group received only herbal medicine for 12 weeks. At baseline and at the end of the study, participants' physical activity levels and dietary intakes were assessed. Furthermore, anthropometric parameters as well as blood levels of glucose, creatinine, urea, BUN, uric acid, SOD,GSH and catalase activities were measured. The study protocol was approved by the Institutional Human Ethics Committee. Statistical analyses were conducted using paired t-tests and student t-tests.
Results : There was no significant difference between the two groups regarding demographic characteristics and anthropometric parameters at the study's baseline. The mean fasting blood glucose levels decreased by 16.3% for the subjects who took the herbo-biotic supplement, compared to a reduction of 11.4% for those in the herbal group. Additionally, the herbo-biotic group showed a significant improvement in several parameters: Urea decreased by 14.7%, BUN by 13.9%, Uric acid by 10.5%, and Creatinine by 11%. In contrast, these reductions were 6% for the herbal group. The study also observed a significant increase in GSH , SOD and CAT ($p < 0.01$). Notable differences were found between the two groups for these enzyme activities and other parameters by the end of the study.
Conclusions : Overall, the results demonstrate that herbo-biotic could improve renal function and reduce oxidative stress factors among T2DM patients.