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## **Synergistic Impact of Probiotics and Herbal Supplement on Reno-protective and Oxidative Stress Indices in Subjects with Metabolic syndrome**

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**Objectives:** Nowadays, there is a growing interest to use probiotics along with herbal medicine in diseases related to metabolic syndrome (MetS). MetS is a cluster of cardiovascular risk factors, many of which have also been implicated in the genesis of chronic kidney disease. This study aimed to determine the effects of synbiotic supplementation on renal function and oxidative stress biomarkers in Metabolic syndrome patients.

**Methods:** Sixty five Subjects with aged 30–65 years were selected from Centre for Translational Research, Jiwaji University and assigned into two groups; Subjects in the symbiotic group received a daily 5 g of Diabegon kwath (Polyherbal Formulation) and probiotics capsule containing Lactobacillus spp Bifidobacterium spp & Saccharomyces boulardii 2.5 bn/g . BD for 12 weeks. Anthropometric parameters, blood glucose, kidney function markers, antioxidant markers like SOD, GSH, CAT and TBARS were measured. The study protocol was duly approved by the Institutional Human Ethics Committee. Statistical analysis was carried out using a paired t-test and student t- test.

**Results:** At the baseline, there was no significant difference between the two groups in terms of demographic and anthropometric factors. The mean fasting blood glucose levels were reduced by 16.3 & 11.4 % in symbiotic and placebo group respectively. 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 symbiotic placebo 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:** A combination of herbal and probiotics may lead to generate some new bioactive components *in vivo* which could improve renal function and oxidative stress factors among the others in MetS patients.