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### **Investigation of an Ayurvedic formulation comprising Arjuna bark and Gau-mutra on cardiomyopathy and nephropathy in experimental model**

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**Objectives:** Gau-mutra has been widely recognized for its healing power in the traditional system of Indian Medicine. Further, Arjuna bark is well known for its cardioprotective actions. Therefore, the present study aimed to evaluate the traditional claim of efficacy of Gau-mutra in combination with Arjuna bark against type 1 diabetes and associated complications.

**Methods:** Diabetes was induced by single tail vein injection of streptozotocin (STZ, 35 mg/kg, *i.v.*) in Wistar albino rats. The animals were divided into four groups (Group I: Normal control; Group II: Diabetic control; Group III: Arjuna bark and Cow Urine treated; Group IV: Arjuna Tablet-treated) and treatment was given for eight weeks after which, various biochemical, cardiac, hypertrophic, renal and histological parameters were estimated.

**Results:** Treatment with test formulations effectively controlled hyperglycemia and dyslipidemia while elevated levels of other cardiac and serum biomarkers were reduced significantly in diabetic rats. Furthermore, treatment with test formulations efficiently corrected the nephrological markers such as uric acid, creatinine, and urinary electrolytes excretion, urinary albumin and urinary albumin to creatinine ratio. Treatment with test substances significantly ameliorated the imbalance between protective (SOD, GSH) and harmful factors (Renal protein, MDA) in the heart as well as in the kidney. Moreover, treatment with test drugs significantly reduced cardiac hypertrophic index, left ventricle hypertrophic index, left ventricular/right ventricular ratio, and left ventricular wall thickness. Treatment with the test formulation significantly reduced collagen deposition in LV and renal tissue. Chronic treatment with the test substances produced regression in histopathological alterations.

**Conclusions:** In conclusion, our data suggest the protective activity of a novel formulation of Arjuna bark and Cow Urine (Gau-mutra) against cardiovascular and renal complication in type-1 diabetes is justified by decreased levels of detrimental cardiac, renal markers and regression in histological markers which could be attributed to the powerful antioxidant property of the formulation.