

Abstract Type : Oral

Abstract Submission No. : OR-1143

β-AMYRIN RICH FRACTION OF FICUS RACEMOSA BARK ALLEVIATES DIABETIC NEPHROPATHY IN EXPERIMENTAL RATS VIA ITS ANTIOXIDANT AND ANTI-INFLAMMATORY POTENTIAL

Devendrakumar Vaishnav¹, Vishal Airao¹, Samir Rabadiya¹, Trupesh Pethani¹, Sachin Parmar¹, Navinchandra Sheth²

¹Department of Department of Pharmaceutical Sciences, Saurashtra University, Rajkot, India

²Department of GRADUATE SCHOOL OF PHARMACY, Gujarat Technological University, India

Objectives: Diabetic nephropathy (DN), characterized by renal structural and functional changes, that develops in diabetic individuals. The present study was sought to investigate the effect of β-amyryn rich fraction of *Ficus racemosa* (BARFFR) on modulating DN via antioxidant and anti-inflammatory potential.

Methods: The known amount of *F. racemosa* bark powder was extracted with methanol. Methanolic extract was serially fractioned with n-Hexane, chloroform, ethyl acetate, n-butanol, and water to get BARFFR. The presence of β-amyryn was confirmed by GC-MS analysis. An experimental diabetic rat model was induced by single i.v. injection of streptozotocin (STZ) (45 mg/kg). The BARFFR was orally administrated at a dose of 20, 40, and 80 mg/kg/day. Renal function was evaluated by serum and urine chemistry. Metabolic profiles, renal enzymes and oxidative stress were estimated by biochemical tests. Cytokines were detected by ELISA. The pathological changes were assessed by histopathologic analyses.

Results: GC-MS analysis revealed the presence of β-amyryn (57.20%) in ethyl acetate fraction of methanolic extract of *F. racemosa*. After injection of STZ, diabetic rats exhibited renal dysfunction, as evidenced by reduced creatinine clearance, increased blood urea nitrogen and proteinuria, marked increases in lipid peroxidation, decrease in anti-oxidant enzyme and altered cytokines levels. All of these abnormalities were significantly reversed by BARFFR in dose dependent manner. BARFFR also restored the cellular anatomy of kidney compared to diabetic rats as evidenced in histopathological analyses.

Conclusions: The data of the present study indicates that BARFFR produce dual protection of diabetic kidney through antioxidant and anti-inflammatory activities, which suggests that BARFFR is a potential adjuvant therapy for the prevention and treatment of DN.