

Abstract Type : Poster

Abstract Submission No. : 1592

Nephroprotective effect of Thaliporphine against Streptozotocin induced diabetes mellitus via Alteration of gut microbiota

Vikas Kumar

Department of Pharmaceutical Sciences, SHUATS, India

Objectives: In this experimental study, we try to explore the neuroprotective effect of Thaliporphine against streptozotocin (STZ) induced renal and cardiac disease via alteration of gut microbiota.

Methods: Single intraperitoneal injection of STZ (60 mg/kg) was used for induction the diabetes. The rats were divided into different groups and received the various doses of Thaliporphine and rosiglitazone (1 mg/kg). blood glucose level, body weight, food intake, water intake and urine out put were estimated. Cardiac, renal, hepatic, antioxidant, apoptosis, inflammatory and inflammatory cytokines were estimated. Fecal sample was used for the determination of gut microbiota.

Results: Thaliporphine treatment significantly ($P < 0.001$) suppressed the glucose level, water intake, food intake, urine output and enhanced the body weight. Thaliporphine treatment significantly ($P < 0.001$) suppressed the cardiac parameters such as LDH, CK-MB, CK, cTnI and cTnt; renal parameters include total bilirubin, albumin, creatinine, uric acid, urea. Thaliporphine treatment significantly ($P < 0.001$) suppressed the oxidative stress via increased the level of SOD, GPx, CAT, GSH and suppressed the level of MDA. Thaliporphine treatment significantly ($P < 0.001$) suppressed the inflammatory cytokines such as TNF- α , IL-1 β , IL-6, IL-8; inflammatory mediators include COX-2, TGF- β , PGE2, NF- κ B in the renal and cardiac tissue. Thaliporphine treatment considerably altered the *Bifidobacteriales*, *Bacteroidates*, *Burkholderiales*, *Clostridiales*, *Coriobacteriales*, *Campylobacteriales*, *Enterobacteriales*, *Desulfovibrionales*, *Lactibacillales*, *Erysipelotrichales*, *Verrucomicrobiales* and *Selenomonadales* bacteria in the faces of STZ induced diabetic rats.

Conclusions: Thaliporphine exhibited the nephroprotective effect against STZ induced DM rats via reduction of oxidative stress, inflammatory reaction and gut microbiota.