# CARDIOPROTETIVE POTENTIAL OF EMPAGLIFLOZIN AND LINAGLIPTIN IN EXPERIMENTALLY INDUED CARDIOTOXIITY IN RATS

**Submitted by**

**Gohil Dilsarbanu I.**

**Supervised by**

**Dr. Snigdha Das Mandal**

Associate Professor

**Parul Institute of Pharmacy and Research**

## Abstract:

**Objective:** The objective of the present study was to evaluate cardio-protective potential of Empagliflozin and Linagliptin respectively and their combination in experimentally induced cardiotoxicity in rats.

**Method:** Animals were divided into Five groups of six animals in each. Group I served as normal control group and received vehicle (0.5% carboxy methyl cellulose) for 15 days. Group II served as Disease control group and received Isoproterenol (85mg/kg, s.c.) on 14$^{th}$ and 15$^{th}$ days. Group III served as Drug treated group and received Empagliflozin (10mg/kg/day, p.o.) for 15 days and Isoproterenol (85mg/kg, s.c.) on 14$^{th}$ and 15$^{th}$ days. Group IV served as Drug treated group and received Linagliptin (5mg/kg/day, p.o.) for 15 days and Isoproterenol on 14$^{th}$ and 15$^{th}$ days. Group V served as Drug treated group and received combination of Empagliflozin 10mg/kg + Linagliptin 5mg/kg, p.o. for 15 days and Isoproterenol (85mg/kg, s.c.) on 14$^{th}$ and 15$^{th}$ days.

At the end of the treatment period, animals were anaesthetized with anaesthetic ether after final drugs dose administration and then blood was collected from the retro-orbital plexus for estimation of different biochemical parameters like blood glucose(BG), creatine kinase MB(CK-MB), lactate dehydrogenase (LDH), Aspartate amino transferase, High sensitivity C reactive protein (HSCRP), lipid profile, animals were euthanized and hearts were isolated for Histopathological examination.

**Result and Disussion:** Animals treated with the Empagliflozin, Linagliptin alone and combination of Empagliflozin+Linagliptin. In that we showed inhibition in the elevated level of CK-MB, LDH, HSCRP, Troponin I and Lipid profile in drug treated groups. In combination of Empagliflzin+Linagliptin showed more cardiorprotection as compared to other drugs treatment.

**Conlusion:** Empagliflozin, Linagliptin and combination of Empagliflozin+Linagliptin could have beneficial effects in cardiotoxicity and combination of both Empagliflozin+Linagliptin showed more cardioprotection as compared to other drugs.

**Keywords:** Cardiotoxicity, Empagliflozin, Linagliptin, Isoproterenol