PROTECTIVE EFFECT OF FLOWERBUDS OF LONICERA JAPONICA EXTRACT ON DIABETES MELLITUS TYPE 2 AND ASSOCIATED VASCULAR COMPLICATIONS IN STZ-HFD TREATED RATS.

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ABSTRACT:

Objective: To study the protective effect of Lonicera Japonica Alcoholic Extract (LJALE) on Diabetes Mellitus II and associated vascular complications.

Methods: Induction of Diabetes Mellitus II with 35 mg / kg STZ-HFD leads to excessive level of 11β-HSD1 enzyme. It has been found that flower buds of Lonicera Japonica (LJ) has also been traditionally indicated for treatment of diabetes. Chlorogenic acid is a major bioactive component in the flower buds of LJ has received more attention because of its 11β-HSD1 inhibitory action.11β-HSD1 regulates glucocorticoid action at the pre-receptor stage by converting cortisone to cortisol. Elevated glucocorticoids are a key risk factor for metabolic diseases. LJALE was prepared with help of Microwave Assisted Extraction (MAE) method. STZ-HFD-induced diabetic rats were treated with LJALE (200 mg/kg, 500 mg/kg) and Metformin (50 mg/kg). It was given for 4 weeks. All parameters viz, blood blucose, plasma insulin, hepatic glycogen, 11β-HSD1 Index, serum cortisol, Histopathological study of Pancreas, Invivo pyruvate load test, Vascular reactivity study were evaluated on completion treatment.

Result: LJALE treated Diabetic rats showed significant decreased in blood glucose levels, plasma insulin, serum cortisol as well significant increased hepatic glycogen, 11β-HSD1 index compare to diabetic control rats. LJALE (500 mg/kg) treatment showed the return of islets close to normal cytoarchitecture with good vascular pattern. LJALE treatment restored endothelium dysfunction.

Conclusions: From all results it is reasonable to conclude that LJALE (500 mg/kg) may be used in treatment of diabetes and diabetes associated vascular dysfunction.

Keywords: Diabetes Mellitus, 11β-HSD1, Chlorogenic acid, LJALE