

VOLUME | ISSUE | YEAR
16 | 1 | 2022
eISSN: 2151-6081 . pISSN: 1819-3471



RESEARCH JOURNAL OF **Phytochemistry**

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Department of Pharmacognosy & Phytochemistry

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All these abstracts were presented at the AICTE sponsored e-Conference on Phytopharmaceuticals held on August 6, 2020 by School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi.

Cardioprotective Effect of Flaxseed Oil in Diabetic Cardiomyopathy on Experimental Animal Rats

Rimjhim, Lalit Parihar and Dr. Sumit Sharma

Department of Pharmacology, R.V. Northland Institute, U.P

ABSTRACT

Background: Diabetic cardiomyopathy (DCM) is a set of diabetes-associated changes in the structure and function of the myocardium. DCM comprises several morphological and structural myocardial changes, which manifest through various changes like mechanical dysfunction as well as fundamental change. These are the consequences of imbalance in glucose level, nitric oxide level, heart weight and body weight. This study was done to evaluate the effect of flaxseed oil on Diabetic Cardiomyopathy and the mechanisms behind it.

Methods: In this study, Wister rats with diabetes induced by a dose of streptozotocin (STZ) through intraperitoneal injection. Two flaxseed oil was orally administered at two doses 300, 500 mg/kg/day respectively. Biochemical tests were used for the evaluation of changes in metabolic profile and myocardial enzyme.

Results: Flaxseed oil, acts as a cardioprotective agent, it improves cardiac function which increases nitric oxide level in the diabetic rats. Flaxseed oil also showed improvement in plasma insulin levels and a decrease in the plasma glucose level. Flaxseed oil alleviates myocardial dysfunction, triglycerides level and serum creatinine kinase level in diabetic cardiomyopathy rats.

Conclusions: These results suggest that flaxseed oil has the potential role to alleviate diabetic cardiomyopathy as it has potent cardioprotective property because of linoleic and alpha linoleic acids. In streptozotocin-induced diabetes, there was a decrease in nitric oxide level and an increase in glucose level which plays a role in the induction of cardiomyopathy. This study shows flaxseed oil maintains the nitric oxide and glucose levels and it may be useful in improving cardiac function in diabetes.



Aims & Scope

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