

## Effect of *Datura metel* on Myocardial Infarction

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### ABSTRACT

The phytochemical study of *Datura metel* flower showed the presence of tannins, alkaloids, flavonoids, steroids, amino acids, reducing sugar, carbohydrate and absence of phlobotannins and anthroquinones. The aqueous extract was capable of reducing total cholesterol, creatine Kinase, LDL, SGOT, ACP, ALP levels in the experimental animal groups. The result indicated that the extract was effective and suppressing the myocardial infarction (MI).

Heart disease is the leading cause of death in this world. Life style modification is an important factor for the influence of heart disease. For eg. smoking, lack of exercise and consumption of a high fat diet are important factors responsible cardiovascular disease (WHO, 2004). Myocardial Infarction (MI) more commonly known as heart attack is a disease state that occurs when the blood supply to a part of the heart is interrupted. The resulting ischemia or oxygen shortage causes damage and potential death of heart tissue. It is a medical emergency and the leading cause of death for both men and women all over the world (Naidu, 1998).

*Datura* species are used as food plants by the larvae of some Lepidoptera species including *Hypercompe indecisa*. The whole plant, but especially the leaves, seeds and flowers are anaesthetic, anodyne antiasthmatic, antispasmodic, antitussive, bronchodilator, hallucinogenic, hypnotic and mydriatic. It has a wide range of applications in India, including in the treatment of epilepsy, hysteria, insanity, heart diseases, fever with catarrh, diarrhea, and skin diseases etc. The present study was conducted to evaluate the cardio protective effect of *Datura metel* by analyzing biochemical markers of cardiac systems (Krishenbaum, 1992).

### MATERIALS AND METHODS

The flowers of *Datura metel* were

collected from Tamil University Herbal Garden, Thanjavur, Tamilnadu, India. *Datura metel* flowers were used for phytochemical and pharmacological studies. Test for tannins, saponin, alkaloids, flavonoids, steroids, terpenoids, reducing sugar, amino acid and carbohydrates was carried out in phytochemical studies. Swiss male albino rats (Wt 150 - 200 mg) were used for pharmacological study. Animals were induced myocardial infarction with isoproterenol (0.2 ml / kg of body weight). Body weight of animals was recorded and they were divided into four groups.

Group I acted as control. Group II acted as experimental control (animals were induced MI with isoproterenol). Group III animals were treated with aqueous extract of *Datura metel* flower (1 g) and Isoproterenol. Group IV were fed with aqueous extract of *Datura metel* flower. The animals of group III and IV were pretreated with the aqueous extract of *Datura* such that the concentration of extract fed was 0.5 mg/ml for 15 days and myocardial infarction was induced on the last 3 days (13<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup>) in the group II and group IV using isoproterenol (0.2 mg/kg of body weight).

After the treatment the animals were sacrificed, blood samples were collected and serum separated for further analysis. The collected serum used for the determination of creatine Kinase, Lactate dehydrogenase, SGOT (Serum Glutamate Oxaloacetate Transaminase), Total cholesterol, ACP (Acid

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