The Asian Journal of Animal Science (June to November, 2009), Vol. 4 Issue 1 : (33-35)

RSEARCH PAPER

Protective role of *Vitis vinifera* seed on isoproterenol induced myocardial infarction in rats

I. AEGIL, P. SENTHAMILSELVAN AND V. SIVAKUMARI

Accepted : February, 2009

See end of the article for authors' affiliations

Correspondence to :

V. SIVAKUMARI,
Department of Environmental and Herbal Sciences, Tamil University, THANJAVUR (T.N.) INDIA

ABSTRACT

Myocardial infarction is a clinical syndrome arising from sudden and persistent curtailment of myocardial blood supply resulting in the necrosis of the myocardium. In the present study, isoproterenol, a β-adrenergic agonist was chosen to induce myocardial necrosis. *Vitis vinifera* seed pretreatment proved to be effective in reducing the extent of myocardial damage, associated lipid peroxidation, thus maintaining, as suggested by biochemical indices, the structure and function of the myocardium. There was the potential cardio protective activity of *Vitis vinifera* seed due to the presence of therapeutic phytochemicals such as flavanoids, grape-sugar, tannin and tocopherol.

Key words : *Vitis vinifera*, Diagnosis, Myocardial in farction.

Myocardial infarction (MI) commonly known as a heart attack is a disease that occurs when the blood supply to a part of the heart is interrupted, causing death of heart tissue. It is the leading cause of death for both men and women all over the world (World Health Organization, 2004).

The diagnosis of organ disease is aided by measurement of a number of non-functional plasma enzymes characteristic of that tissue or organ. The amount of enzymes released depends on the degree of cellular damage, the intracellular concentrations of the enzymes and the mass of affected tissue. The cause of the damage (viral infection, hypoxia, surgical, chemical or mechanical trauma) has no bearing on the enzymes released into circulation. The concentration of the enzymes released reflects the severity of the damage. The use of appropriate normal ranges is important in evaluating abnormal levels of plasma enzymes (Vasudha *et al.,* 2006).

The grape is thought to have been growing wild throughout the world even before the arrival of humans. Grape (*Vitis vinifera*) is one of the oldest cultivated plants, some of the earliest records of which exist in Egypt around 4000 B.C. Grape is the generic name given to the berry of the grape vine plant. There are several species that make up the genus Vitis (family : Vitaceae), including varieties that are eaten as table fruit, dried to produce raisins, currants and sultanas, or crushed to make grape juice and wine. *Vitis vinifera* is the species most commonly used in wine making. Some of the varieties used for making wine include cabernet sauvignon, chardonnay, merlot, pinot noir, riesling, sauvignon blanc and syrah. Grapes are a nourishing and slightly laxative fruits that can support the body through illness, especially of the gastro-intestinal tract and liver (Chevallier, 1996). Because the nutrient content of grapes is closed to that of blood plasma, grape fasts are recommended for detoxification (Chevallier, 1996).

MATERIALS AND METHODS

The male albino rats (120-180g) were kept in polypropylene cages under standard environmental conditions (at an ambient temp of 25 ± 1^0C and 45-55% Relative Humidity with a 12:12 hour light / dark cycle). Experiments were conducted between 09.00 and 14.00hrs (Local Animal Ethical Committee of Dept. of Pharmacology, Periyar College of Pharmacy for Women, Trichy. Animal Ethical Number: CPCSEA/265).

Dried *Vitis vinifera* were purchased from Thanjavur market. The *Vitis vinifera* seed shaded, dried and finally powdered which was sieved through nice clothes and used as drugs. The fine powder was dissolved in distilled water just before oral administration.

Experimental design:

Body weight of animals was recorded and they were divided into three groups of six animals each as follows.

Group I: Normal animals received with standard feed and water to allow *ad libitum.*

Group II: Administered isoproterenol (20mg /100g b. wt) (suspended in 0.1ml of 0.9% saline) subcutaneously injected twice at an interval of 24 hrs.

Group III: Rat was pretreated with *Vitis vinifera* (1g/kg b. wt) for a period of 20 consecutive days. Isoproterenol (20mg/100g) subcutaneously injected twice