

RESEARCH PAPER

Protective effect on *Hygrophila auriculata* leaf extraction cadmium chloride induced hepatotoxicity in albino wistar rats

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Protective effect of *Hygrophila auriculata* leaf extract on cadmium chloride induced hepatotoxicity in albino wistar rats were investigated by analyzing various biochemical parameters. cadmium chloride induced hepatic damage was well manifested by significant increase in the activities of SGOT, SGPT, ALP, ACP, total bilirubin, MDA and LDH and also decreased in total protein and GSH. The oral administration of aqueous extract of *Hygrophila auriculata* (100mg/kg body wight) along with cadmium chloride for 7 days reversed these altered parameters to normal level which indicating the hepatoprotective efficacy of *Hygrophila auriculata* against cadmium chloride induced liver injury. Phytochemical constituents such as flavonoids are responsible for the hepato protective activity of *Hygrophila auriculata*. Further extensive studies are required for its potential uses in clinical practice.

Key words : linseed , *Hygrophila auriculata*, Cadmium chloride, Hepatotoxicity, Hepatoprotectivity

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INTRODUCTION

The main industrial centre of the body is the liver and weighs about 1.5kg making up about 23 per cent of the total body weight. Liver plays a pivotal role in the regulating various physiological process in the body. It is involved with almost all the biochemical pathways to growth, fight against diseases, nutrient supply, energy provision and reproduction (Ward and Daly, 1999). Liver diseases are some of the fatal diseases in world today they pose a serious challenge to international public health. An injury to it or impairment of its function may lead to many complications. About 20,000 deaths occur every year due to liver diseases (Laurence and Beunett, 1992). Hepatitis (Inflammation of the liver), Jaundice (Yellow discoloration of skin, mucous membranes), chirrrosis (Formation of Fibrous tissue is the liver), Hepatomegaly (liver enlargement) etc.

Liver diseases are mainly caused by toxic chemicals, excess consumption of alcohol, infectious and auto immune disorders. Most of the hepatotoxic chemicals damage liver cells mainly by inducing lipid peroxidation and other oxidative

damage (Reelmagel, 1983; Wendal *et al.*, 1987; Diazani *et al.*, 1991).

Heavy metal:

Heavy metals cause liver damage. The most harmful heavy metals enter the liver and affect the liver cells, can produce the liver diseases, such as hepatitis, cirrhosis, liver enlargement, cholestasis. Ex: lead acetate, carbon tetra chloride, cadmium chloride, magnesium chloride.

Cadmium chloride:

Human uptake of cadmium takes place mainly through food. Food stuffs that are rich in cadmium can greatly increase the cadmium concentration in human bodies. Example is liver, mushroom, shellfish, mussels, cocoa powder and dried seaweed. Food and cigarette smoke are the largest potential sources of cadmium exposure for members of the general population (Goyer *et al.*, 1997). The average person ingests about 30 micrograms of cadmium from food each day. Smokers absorb an additional 1 to 3 µg/day from cigarettes. Cadmium can enter the blood by absorption from the stomach or intestines after ingestion of water or food, by absorption from