

# ETHNO VETERINARY MEDICINE IN HEPATIC DISORDERS- A REVIEW

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Liver is the largest exocrine gland in the body with several functions. Normal function of liver is absolutely essential for productivity. Liver disorders are identified as one of the major factors causing anorexia and loss of production in animals.

Toxicities including aflatoxicosis, plant poisons, endogenous toxins (in mastitis, metritis and toxins from rumen), fatty liver syndrome and parasitic hepatitis (Liver fluke, Amphistomosis etc) are the main liver problems in cattle. Where as in small animals like dogs, infectious hepatitis (Eg. Leptospirosis, Viral hepatitis etc.) is important along with intoxications, especially drug intoxications.

In treating hepatic disorders, the first step is to remove the basic etiological factor. After that, agents which will hasten regeneration of liver are commonly used. In spite of the tremendous strides in modern medicine, there is no satisfactory drug which will protect liver from damage and cause regeneration. Various medicinal plants are used in human and veterinary medicine as liver regenerative agents. Some of the important plants possessing hepato-protective effect are *Phyllanthus amarus* (Kezhamelli), *Picrorhiza kurooa* (Katukurohini), *Eclipta alba* (kaiuniam) and *Wedelia calendulacea* (Majal Karisalai) etc. Also the drug Silymarin, extracted from the fruit of *Silybum marianum* (Milk thistle) has been used for centuries in human medicine to treat liver diseases.

- 1) ***Phyllanthus amarus*** : The plant *Phyllanthus amarus* (Kizarnelli) earlier known as *Phyllanthus niruri* is commonly seen in tropics and subtropics and considered to be a remedy for jaundice and other liver disorders. The active ingredients are Phyllanthin and hypophyllanthin. This plant is having antioxidant effect causing inhibition of hepatic lipid peroxidation thus hastening the regeneration of hepatocytes. The hypoglycaemic action is being tested in alloxan induced Diabetes. Antihistamine like activity was also observed. *P. amarus* inhibited the DNA polymerase of

hepatitis-B virus and wood chuck hepatitis virus in human carriers. The antiviral property of the plant created interest and enthusiasm among scientists. Also erythrocytes of rats which received the drug were more resistant to osmotic haemolysis. This action will prevent hemorrhagic episodes which can occur in the course of hepatic disorders.

Nambi (1993) showed that isoprothiolane @ 50 mg/ kg body wt. twice daily for 20 days and extract of *P. amarus* 500 mg / animal twice daily for 20 days were useful in altering liver disorders in dogs. The drug isoprothiolane is commonly used to treat fatty liver syndrome in cattle.

*Phyllanthus amarus* whole plant powder @ 50 mg / kg body weight or methanolic extract @ 2.5 mg / kg body weight daily orally for 10 to 14 days can be effectively used to treat carbon tetrachloride induced and clinical cases of hepatopathy in cattle. The drug produced no side effect. Also there was an incidental finding that the drug helped in the rejuvenation of rumen protozoa, which was damaged due to carbon tetrachloride administration. The drug was useful in hepatitis caused by rumen alkalosis, ketosis and chronic mastitis. However it was not effective in ascites condition produced due to hepatic fibrosis / cirrhosis. (Ajithkumar, 1996).

## 2) **Silymarin**

In modern medicine this is commonly used to treat toxic hepatitis. Silymarin or Silibinin is the active component. Silymarin apparently promotes liver cell protein synthesis and decreases the oxidation of glutathione. Milk thistle or silymarin may potentially be beneficial in a number of diseases involving liver disease, if in the early stages. Silymarin is not likely to work in cases of late stage cirrhosis. Early research indicates that silymarin may also have anti-cancer properties.

It is also used in dogs to treat hepatosis and hepatitis. Studies suggested that it helped to lower liver enzymes, reduced prolongation of prothrombin time. The drug possess hepatoprotective, anti-inflammatory, antifibrotic, antioxidative effects to promote hepatic regeneration. Doses of 20 – 50 mg / kg of 60 % to 80 % potency silymarin extract will be appropriate for dogs. 70 mg tablets are also available in the market. (Ettinger and Feldman, 2005). A dog showed severe vomiting and was diagnosed as hepatitis by ultrasonography. It was treated with Silymarin, 70mg tablets BID along with antibiotic (Amoxycillin, cloxacillin) and fluids (5% Dextrose saline) for five days. The animal recovered uneventfully (personal communication).

### 3) *Eclipta alba*

In Ayurvedic medicine, *Eclipta alba* is said to be the best medicine for the treatment of liver cirrhosis and infective hepatitis. Liquid extract from fresh leaves proved effective in preventing acute carbon tetrachloride induced liver damage in guinea pigs. Powdered drug has been found effective against jaundice in human. Studies in domestic animals are lacking.

### 4) *Picrorhiza Kurroa*

Picrolive the hepatoprotective principle showed a cholerectic effect in conscious rats and anaesthetized guinea pigs. It also possessed anticholistatic effect against paracetamol induced cholestasis. Picroliv was found to be more potent cholerectic and anticholistatic agent than Silymarin. Picroliv in doses of 12.5 and 25 mg / kg prevented most of the biochemical changes induced by thioacetamide in liver and serum in rats.

Other than these plants *Wedelia calendulacea*, *Glycyrrhiza glabra* (Irattimaduram), *Tinospora cordifolia* (Chittamruthu), *Andrographis paniculata* (Kiriya), *Emblia officinalis* (Nellikka), *Ocimum sanctum* (Thulasi), *Boerhavia diffusa* (Thazhuthama - Possess diuretic and hepatoprotective effect), *Trichopus zenyanicus* (Arogyappacha or Kerala Giseng- Anti-fatigue, Anti-stress, hepatoprotective, anti-ulcerogenic and immunomodulatory) are widely used in ayurvedic medicine. Effect of these plants in animals with hepatic problems are to be studied in detail.

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