Role of some Ayurvedic Plant Drugs in the Management of Hepatitis

Amit Vaibhav

Lecturer, Department of Kaya Chikitsa, Dr. Vijay Ayurvedic Medical College Hospital and Research Center, Kaithi, Varanasi, Uttar Pradesh, India

Abstract: Hepatitis is a disease of the liver as a result of inflammation of liver cells. The acute form of hepatitis can be self-limiting, can progress to chronic form as fibrosis and cirrhosis. In Ayurveda, its symptoms are clinically very much similar to 'Kamala' which has been mentioned as full disease entity whereas in modern medicine it is just a symptom i.e. jaundice as a result of Inflammation of Liver parenchyma. There is no specific treatment available for hepatitis in biomedicine. Ayurvedic medicine positively has a lot to offer to the society by way of improving liver health. There are several ayurvedic plant drugs described in Ayurvedic sculptures like - Amrita, Triphala, Kumari etc. which possesses potent positive hepato-modulatory effect. Different Experimental studies have reported the hepatoprotective effects of these ayurvedic drugs on the basis of validated mode of action - capacity of hepatocellular regeneration, cholagogues, and choleric activity, hampering the entero-hepatic circulation, excess flow of stercobilinogen and urobilinogen with stool and urine, membrane stabilizing effect, anti viral, antioxidant effect, enzymatic and metabolic correction. On reviewing above studies we concluded that these Ayurvedic drugs are safe and effective in the management of Hepatitis clinically as well as experimentally. This paper will review therapeutic approach in the management of Hepatitis based on Ayurvedic concepts and experimental studies.

Keywords: Hepatitis, Inflammation, Ayurvedic drugs, Experimental studies.

Introduction

Hepatitis is an inflammation of the liver cells which may occur without symptoms, but can lead to jaundice. Hepatitis virus is the most common cause of hepatitis in the world but other infections, toxic substances, and autoimmune disease can also cause hepatitis[1]. The acute form of hepatitis is generally characterized by constitutional symptoms that are mostly self-limiting [2]. Chronic hepatitis has mostly the same presentation but symptoms of liver dysfunction with long-standing inflammation of liver results as cirrhosis or fibrosis or cancer. Viral infection with high mortality and morbidity rate are the leading cause deaths worldwide [3]. All viruses start their life cycle through attachment and entry into the host cell and then increase their progeny by transcription and replication of the genome. But due to variation in genotypes, it difficult to treat virus-induced hepatitis. There are plenty of plants that are known for their medicinal properties against liver disease. Liver diseases have been treated around the world using numerous medicinal plants and their formulations besides biomedicine have not specific treatment to protect the liver. So this has given confidence and path to researchers to investigate the effect of these medicinal plants against hepatitis in more depth.

Hepatoprotective Drugs

The important herbs used in Ayurveda to treat Liver diseases have been described below:

1. Kalmegh (Andrographis paniculata Nees)
   Chaturvedi et al., conducted a clinical study on Kalmegh in the patients suffering from infective hepatitis treated by Andrographis paniculata Nees decoction. They have reported 80% cure rate in the population suffering from infective hepatitis.[4]

2. Jamun (Eugenia Jambolana)
   Jamun or Jambu is commonly found in the tropical countries such as India. It has good anti-oxidant properties. Donepudi et al., reported in an experimental study on mice that, it reduces bile duct ligation induced hepatic inflammation by suppressing lipid peroxidation which indirectly prevents the liver from oxidative damage.[5]

3. Pippali (piper longum)
   The fruit extract of this plant has been shown to have hepatoprotective action. Its main active constituent is 'Piperine' which possess hepatoprotective effect. A study conducted on rodents with carbon tetrachloride (CCI4), induced liver damage, the extract was shown to restrict ongoing liver fibrosis. This action resulted in stimulation of regeneration of the cells. The mechanism of action of piperine is the reduction of lipid peroxidation, by which it offers a hepatoprotective effect.[6][7]

4. Tulasi (Ocimum sanctum Linn)
   The medicinal importance of Tulasi has been well documented in the ancient Ayurvedic literature. This
plant contains adaptogen, which is known to counteract multiple nonspecific stresses. Mondal et al., in their study noticed enhanced physical endurance and improved healing in rodents that were fed with an ethanol extract of Tulasī. This extract has a good hepatoprotective effect at a dose of 100 mg/kg body weight.[8]

5. Kutaki (Picrorhiza kurroa)

It is a renowned herb in the Ayurvedic system of medicine and has traditionally been used to treat disorders of the liver, upper respiratory tract, reduce fevers, treat dyspepsia, chronic diarrhoea, and scorpion sting. Vaidya et al. reported the hepatoprotective effect of Picrorhiza kurroa in experimental models. They observed that picroside which is an active ingredient of Kutaki significantly reduces galactosamine induced liver injury in rats.[9] Chander et al., 1992 also reported that Picrorhiza’s constituents exhibit a strong anti-cholestatic activity against a variety of liver-toxic substances, appearing to be even more potent than silymarin.[10]

6. Bhringaraja (Eclipta Alba)

A recent study was done by Manvar et al., on , identified three active phytochemical compounds in Eclipta Alba. They have observed that these potent compounds inhibited HCV replication in vitro and in cell culture. Moreover, when these compounds are combined, they show a synergistic activity in inhibiting HCV replication.[11]

7. Punarnava (Boerhavia diffusa Linn.)

The roots of Boerhavia diffusa Linn., commonly known as ‘Punarnava’, are used by a large number of tribes in India for the treatment of various liver disorders and for internal inflammation. Varsha et al., 2011 reported the effectiveness of Boerhavia diffusa Linn. in cases of oedema and ascites resulting from early cirrhosis of the liver.[12]. In another study Agarwal et al. 1991 reported the hepatoprotective action of Boerhavia diffusa in country made liquor induced hepatotoxicity. Punarnava contains alkaloids named as punarnavine and punarnavoside which shows anti-fibrinolytic activity but the hepatoprotective activity has been attributed to ursolic acid.[13]

8. Bhuyamalaki (Phyllanthus niruri Linn.)

Phyllanthus niruri Linn. is an ayurvedic medicinal herb used in hepatitis, jaundice and other ailments. It is a potent antiviral drug in Hepatitis-B in human subjects. In the preliminary study Mehrotra et al., 1991 observed that carriers of Hepatitis-B virus were treated with a preparation of the plant 200 mg for 30 days. 22 of the 37(59%) treated patients had lost Hepatitis-B surface antigen, when tested 15–20 days after the end of the treatment, compared with only 1 out of 23 (4%) placebo-treated controls. It has exhibited an inhibition of DNA polymerase on Hepatitis–B virus which is responsible for the replication of virus.[14] In a study, phyllanthin, hypophyllanthin, and tricatol were isolated from petroleum ether extract of Phyllanthus niruri Linn. Shows significant results on rat hepatocytes. Tabassum et al., 2005 reported the same type of hepatoprotective action in paracetamol induced liver damage in experimental animals.[15]

9. Sharapunkha (Tephrosia purpurea Pers)

Tephrosia purpurea Pers. known as Sharapunkha, It is another potent ayurvedic herb for liver ailments. It has shown good results in cirrhosis and viral hepatitis in clinical trials (human studies). Sree Rama Murthy and Srinivasan, 1993 carried out a study on dried ethanolic extract of Tephrosia purpurea Pers. in both acute and chronic models CCl4 of experimentally induced hepatotoxicity.[16] In vitro studies exploiting trypan blue exclusion assay revealed that the alcoholic extract exerted a significant hydroxyl radical scavenging activity. Hepato-protective effect of aerial parts was evaluated against CCl4 induced hepatotoxicity in rats. Jain, A. et al., 2006 observed same type of results later.[17]

10. Natural honey

Naturally occurring substances such as honey produced by bees have also been shown to have good therapeutic effects in the treatment of hepatitis.[18-20]

Validated mode of action of above mentioned drugs

After looking hepatoprotective action of above mention drugs, the probable qualities of these drugs can be summarized as following:

- Capacity of Hepatocellular regeneration
- Cholagogues and choleretic activity
- Hampering the Entero-Hepatic Circulation
- Excess flow of Sercobilinogen and Urobilinogen with stool and urine
- Membrane stabilizing effect
- Anti viral and anti oxidant effect
- Enzymatic and metabolic correction

Conclusion

Hepatitis is a major and life-threatening viral infection. There are very limited treatment options available in the modern allopathic system. Ayurveda is very rich in the plant drugs which possess hepatoprotective and hepato- modulatory properties. Modern medical science still struggling in this regard. Ayurveda offers many potent hepatoprotective herbs for hepatitis patients. The main action of these drugs is due to their antioxidant, anti-inflammatory, rejuvenating, membrane stabilizing and antiviral effect. These drugs protect liver tissues against oxidative damage and somehow help in stimulating the repair mechanism of liver. In this way, these Ayurvedic medications are a new hope for depressed hepatitis patients.

References:


