



## AYURVEDIC INTERVENTION FOR VIRAL HEPATITIS – A REVIEW

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### ABSTRACT

Infective hepatitis is a major health hazard in the Indian sub-continent with a large population and improper sanitation adding to the malady. Water borne or infective hepatitis has no useful treatment in modern medicine. However there are multiple accounts of how infective hepatitis can be successfully cured by Ayurvedic medicine. A mass awareness of this potential of Ayurvedic medicine is desirable to achieve a larger impact on the society.

**KEYWORDS:** Hepatitis, treatment, Ayurveda.

### INTRODUCTION

Hepatitis is an inflammation of the liver, most commonly caused by a viral infection. There are five main hepatitis viruses, referred to as types A, B, C, D and E, but it can also be caused due to toxins (like alcohol, certain medications), other infections and autoimmune diseases.

In particular, types B and C lead to chronic disease in hundreds of millions of people and, together, are the most common cause of liver cirrhosis and cancer.

Hepatitis A and E are typically caused by ingestion of contaminated food or water. Hepatitis B, C and D usually occur as a result of paraneural contact with infected body fluids.

#### Modes of Transmission

Modes of transmission for viruses include receipt of contaminated blood or blood products, invasive medical procedures using contaminated equipment and for hepatitis B transmission from mother to baby at birth, from family member to child, and also by sexual contact.

Symptoms may include, malaise, fatigue flu-like symptoms, dark urine, pale stool, abdominal pain, loss of appetite, unexplained weight loss, jaundice.

Ayurveda describes various types of kamala (hepatitis jaundice) based on the stage or depth of the symptoms. They are:-

1. Shakhshrita – It is caused by the aggravation of all the doshas (vata, pitta and kapha), and is a kind of obstructive jaundice.

2. Koshta Shakhshrita – results from very high pitta derangement and considered as severe jaundice or hepatitis, difficult to cure.
3. Kumbha Kamala – is a neglected or untreated stage of jaundice or hepatitis. It can become incurable if not attended immediately. It can be compared with cirrhosis of liver.
4. Haleemaka – is an advanced or neglected stage stage of paandu roga that occurs when both the vata and pitta are out of balance.

The Indian Traditional Medicine like Ayurveda, Siddha and unani are predominantly based on the use of plant materials. Herbal drugs have gained importance and popularity in recent years because of their safety, efficacy and cost effectiveness.

Several Indian medicinal plants have been extensively used in the Indian traditional system of medicine for the management of viral hepatitis.

**Table 1: Medicinal Herbs useful in viral hepatitis.**

S. No.	Plant	Rasa	Guna	Virya	Vipaka	Dosakarma
1.	Guduchi ( <i>Tinospora cordifolia</i> (Willd.) Miers.)	Tikta, Kashaya	Guru, Snigdha	Ushna	Madhura	Tridosahara
2.	Pippali ( <i>Piper longum</i> Linn.)	Katu	Laghu, Snigdha, Teekshna	Ushna	Madhura	Tridosahara
3.	Punarnava ( <i>Boerhavia diffusa</i> Linn.)	Madhura, Tikta, Kashaya	Laghu, Ruksha	Ushna	Madhura	Tridosahara
4.	Kalamegha ( <i>Andrographis paniculata</i> Nees.)	Tikta	Laghu, Ruksha	Ushna	Katu	Kaphapittahara
5.	Bhumyamalaki ( <i>Phyllanthus niruri</i> Linn.)	Tikta, Kashaya, Madhura	Laghu, Ruksha	Seeta	Madhura	Kaphapittahara
6.	Daruharidra ( <i>Berberis aristata</i> DC.)	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphapittahara
7.	Katuki ( <i>Picrorhiza kurroa</i> Royle ex Benth.)	Tikta	Laghu, Ruksha	Seeta	Katu	Kaphapittahara
8.	Rohitaka ( <i>Techoma undulata</i> G. Don.)	Katu, Tikta, Kashaya	Laghu, Ruksha	Seeta	Katu	Kaphapittahara
9.	Bhringaraja ( <i>Eclipta alba</i> Hassk.)	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu	Kaphavatahara
10.	Sharapunkha ( <i>Tephrosia purpurea</i> Pers.)	Tikta, Kashaya	Laghu, Ruksha, Teekshna	Ushna	Katu	Kaphavatahara

***Tinospora cordifolia* (Willd.) Miers. (Guduchi)**

*Tinospora cordifolia* (Willd.) Miers., known as Guduchi, Amrita is one of the most valuable medicinal herbs of Ayurveda. The term 'Amrita' is attributed to this herb in recognition of its ability to impart youthfulness, vitality and longevity to its patron. In modern medicine, it is well known for its hepatoprotective, adaptogenic, immunomodulatory activities and anti-fibrotic activity. The active principle Tinosporin corrects immunosuppression associated with deranged hepatic function (Varsha *et al.*, 2011).

***Piper longum* Linn. (Pippali)**

*Piper longum* Linn. belongs to the family Piperaceae, is a common Indian dietary spice which has been shown to possess a wide range of therapeutic utilities. It has been reported to possess antiasthmatic, antiinflammatory, hepatoprotective, hypocholesteremic and immunomodulatory activities. It contains various alkaloids like piperine, piperlongumine, piperlonguminine, etc. which helps in the regeneration of hepatocytes (Gupta AK, 2003).

***Boerhavia diffusa* Linn. (Punarnava)**

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 hepatic disorders and for internal inflammation. Clinical data has also reported effectiveness of *Boerhavia diffusa* Linn. in cases of oedema and ascites resulting from early cirrhosis of the

liver and chronic peritonitis (Varsha *et al.*, 2011). The effect of ethanolic extract of roots of *Boerhavia diffusa* Linn. on country made liquor induced hepatotoxicity was studied in albino rats by Agarwal *et al.* (1991). Histopathological studies showed marked reduction in fat deposits in animals receiving *Boerhavia diffusa* Linn. along with country made liquor. The plant protected the rats from hepatotoxic action by decreasing the serum alanine amino transferase (ALT), triglycerides, cholesterol and total lipid levels in both serum and tissues.

***Andrographis paniculata* Nees. (Kalamegha)**

*Andrographis paniculata* Nees. is an ancient Indian medicinal herb, which has been used for centuries in Asia for its effects on various bodily functions and ailments, ranging from degenerative diseases to the common cold. The plant is known as King of Bitters. Andrographolide is an active constituent extracted and isolated from *Andrographis paniculata* Nees which is very bitter in taste (Anil Kumar *et al.*, 2012).

***Phyllanthus niruri* Linn. (Bhumyamalaki)**

*Phyllanthus niruri* Linn is a medicinal herb used in connection with secondary hepatitis and other ailments, in ayurvedic medicine for over 2000 years. It is a proved antiviral drug in Hepatitis-B in human subjects. In the preliminary study, 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 (Mehrotra et al., 1991).

#### **Berberis aristata DC. (Daruharidra)**

*Berberis asiatica* DC. being an important medicinal plant is used extensively for treating variety of ailments like infection of eyes, skin diseases, jaundice and rheumatism (Kirtikar and Basu, 1933). The major alkaloid of this plant is reported to be berberin which possess anti-oxidant property (Brijesh and Khosa, 2010).

#### **Picrorhiza kurroa Royle ex. Benth (Katuki)**

*Picrorhiza kurroa* Royle ex Benth. 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. Kutkin the active principal of *Picrorhiza kurroa* Royle ex.

#### **Techoma undulata G. Don (Rohitaka)**

*Techoma undulata* G. Don is a tropical coastal shrub that grows up to 1 m in height. It occurs throughout the Indian subcontinent. *Techoma undulata* G. Don leaves were tested against liver damage of albino rats. Loss of membrane structure and integrity because of lipid peroxidation was accompanied with the elevated levels of marker enzymes like SGOT, SGPT and total bilirubin. This shows that the plant has got membrane stabilizing function. *Techoma undulata* G. Don was potentially effective in blunting lipid peroxidation, suggesting that the extract possibly has antioxidant property to reduce ethanol-induced membrane lipid peroxidation and thereby to preserve membrane structure and might be due to the presence of glycosides, flavonoids, proteins, amino acids, tannins, saponins and triterpenoids (Singh D. et al., 2011).

#### **Eclipta alba Hassk. (Bhrngaraja)**

*Eclipta alba* Hassk. known as Bhringraja, is a plant belonging to the family Asteraceae. In ayurvedic medicine, the leaf extract is considered a powerful liver tonic. It possesses a wide range of biological activities and is used for the treatment of hepatitis and cirrhosis.

#### **Tephrosiapurpurea Pers. (Sharapunkha)**

*Tephrosia purpurea* Pers. known as Sharapunkha, forms one of the most effective ingredients of formulations available in Indian market for liver ailments. In the traditional Indian medicine it is famous for its effectiveness in bilious febrile attacks, obstruction of liver and spleen apart. Especially, it has shown good results in cirrhosis and viral hepatitis in clinical trials (human studies). Dried ethanolic extract of *Tephrosia purpurea* Pers. was studied for its efficacy using both acute and chronic models CCl<sub>4</sub> of experimentally induced hepatotoxicity. In vitro studies exploiting trypan

blue exclusion assay revealed that the alcoholic extract exerted a significant hydroxyl radical scavenging activity (Sree Rama Murthy and Srinivasan, 1993).

Different single herbs are very much useful in liver disorders as shown by research studies. A few Ayurvedic compound formulations such as Phalatrikadi kwatha, Vasa guduchyadi kashaya, Patola katurohinyadi kashaya, Guda pippali, Arogyavardhini vati, Rohitakarista mentioned in Sharangadhara Samhitha (13<sup>th</sup> Century) are also found to be promising in hepatopathy.

#### **CONCLUSION**

The challenge that modern medical system face with liver disorders is that such drugs would have to be metabolized in the liver. Since the liver itself is in disorder, the problem is how to ensure effective metabolism of the drugs that have been prescribed. In this context, Ayurveda sages have used their genius, to formulate such herbal formulations that can be metabolized even by a sluggish liver. The logic on which such formulations work is that they first heal and reinvigorate the liver and thus contribute to the restoration of its normal functions. Preserving health of the liver means adding healthier years to one's life. Be polite to your liver & Keep it Living and Lively.

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