A Brief Review On Current Scenario of Hepato-Protective Ayurvedic Drugs

Dnyaneshwar D. Bhise 1  
Kranti N. Khekale 2

Abstract

Ayurveda is not only an ancient medical science but it is a science which gives knowledge about life. The scope of Ayurveda is to maintain the health of the healthy people and to cure those who are affected with diseases. Since last few decades due to drastic change in lifestyle, dietary habits and working pattern the world has come to the global burden of several diseases. Late night sleeping habits, increased fast food consumption and increased use of alcoholic beverages are the major changes observed in current era. Alcoholism and alcoholic liver diseases is one of the major sources of mortality and morbidity in rural as well as urban population.

Now a day various researches carried out at different institutions found that variety of Ayurvedic therapies are successful in improving liver function and thereby preventing increased stress over liver. The present review is aimed at compiling data on promising Ayurvedic medicine that have been tested in hepatotoxicity models using modern scientific system. This review article gives an idea about the efficiency of various hepto-protective Ayurvedic treatment modalities under Indian system of medicine.

Keywords- Yakūt, Liver, Alcoholism, Cirrhosis, Hepatotoxicity, Herbal drugs.

1 Assistant Professor, Department of Rasashastra & Bhaishajya Kalpana, Govt. Ayurveda College, Osmanabad. 2 PG Scholar, M.D. (Scholar) Rasashastra Bhaishajya Kalpana, Sion Ayurved College Mumbai.

CORRESPONDING AUTHOR
Dr. Dnyaneshwar D. Bhise
Assistant Professor,
Department of Rasashastra & Bhaishajya Kalpana,
Govt. Ayurveda College,
Osmanabad, (India).
Email: drbhisedd@gmail.com
INTRODUCTION

As soon as the word 21st century is pronounced, a startling picture of continuously moving world stands before our eyes. Due to drastic change in lifestyle, dietary habits and working pattern the world has come to the global burden of several diseases. Late night sleeping habits, increased fast food consumption and increased use of alcoholic beverages are the major changes observed in current era. Among that alcoholism and alcoholic liver diseases and subsequent hepatotoxicity is a major source mortality and morbidity. Hepatotoxicity means chemical driven liver damage. Certain medicinal agents, when taken in overdoses and sometimes even when taken in prescribed doses, may injure the organ. Other chemical agents, such as those used in laboratories and industries, natural chemicals (e.g. microcystins) and herbal remedies can also induce hepatotoxicity. [i]

Recently W.H.O. has adapted the utility of traditional system of medicine and recognized Ayurveda as one of the most efficacious system of medicine. Ayurveda is the science of keeping perfect physical and mental health. It is a well-organized system of medicine which originated in India about 3000 years ago and is being practiced even today. Herbal-based therapeutics for liver disorders has been in used in India for a long time.

Liver –
The liver is one of our most vital organs—perhaps second only to the lungs and the heart. The total number of separate functions performed by the liver in human body is in the range of five hundred.[ii]

Liver has a wide range of functions, including detoxification, protein synthesis and production of biochemical necessary for digestion and synthesis. As well as it produces enzymes necessary for breakdown of small and complex molecules which are necessary for normal vital function. The liver is endlessly filtering and detoxifying the blood and it plays a significant role in digestion and metabolism. Liver has the important job of protecting the deeper tissues from impurities in the blood that might otherwise cause harm. However, over-exposure to toxins such as alcohol, prescription or recreational drugs, environmental pollutants, and the like, has the potential to adversely impact the liver itself.

Major Liver Functions –

1. Detoxification
The liver filters the blood and eliminates toxins from the bloodstream. In essence, when we eat, the digestive tract breaks our food down into absorbable bits, which are then allowed to enter the bloodstream i.e., Rasa Dhātu. This nourishing “food juice” then travels to the liver to be further refined and filtered. The liver actually removes and eliminates unwanted toxins so that they do not enter into broader circulation. The liver is also responsible for metabolizing chemical toxins, all kind of drugs and alcohol.

2. Bile Formation and Secretion –
Bile is an alkaline fluid that helps to emulsify fats for proper digestion. It is produced by the liver and temporarily stored in the gallbladder. As food is digested, the gallbladder empties stored bile into the small intestine. As a result, the health of the liver and gallbladder are closely intertwined.

3. Digestion and Metabolism of food –
Liver plays a critical role in the digestion and metabolism of ingested nutrients. The liver regulates and stores glycogen; our primary source of available biological energy. It is able to break down complex substances like carbohydrates, lipids, and proteins into biologically useful molecules like glucose, cholesterol, phospholipids, and lipoproteins.[iii]

4. Protein Metabolism and Synthesis –
The liver is one of the primary places in the body where proteins are metabolized, synthesized, and later degraded. Most of our bodily tissues are made up of proteins, but they are particularly essential for nourishing the muscle tissue.

5. Other Important Liver Functions
The liver is also involved in the regulation of bodily pH levels, production of red blood cells and the regulation of blood volume and blood pressure.[iv]

Hepatic Diseases –
Hepatic disease (Liver disease) is a term that affects the cells, tissues, structures, or functions of the liver. Liver disease can occur through several mechanisms. A common form of liver disease is viral infection. High consumption of alcohol can lead to several forms of liver disease including alcoholic hepatitis, alcoholic fatty liver disease, cirrhosis, and liver cancer.[v]

In the earlier stages of alcoholic liver disease, fat builds up in the liver’s cells due to increased creation of triglycerides and fatty acids and a decreased ability to break down fatty acids. Progression of the disease can lead to liver inflammation from the excess fat in the liver. Scarring in the liver often occurs as the body attempts to heal and extensive scarring can lead to the development of cirrhosis in more advanced stages of the disease.[vi]
Material and Methods –
This article is based on a review of current researches in the field of Ayurveda regarding hepatoprotective Ayurvedic drugs and their usefulness. Materials related to liver, hepatoprotective Ayurvedic drugs and other relevant topics have been collected. We also referred to the modern medicine and searched various websites to collect information on the relevant topic. Researches published in various popular journals in current era have also been reviewed while writing this article.

Literature Review –
Current researches in Ayurveda and their effectiveness in liver disorders –
Since last two to three decades many researches have been conducted all over the country to treat liver disorders with various Ayurvedic medicines. Following are some of the researches depicting their effectiveness in the field of medicine.

Āmalakī sa (purified mercury), Bibhītaki Śilājitu Harītaki in Ayurveda. It has been used for centuries with excellent efficacy and safety in treatment of jaundice, liver disorders, and various skin disorders. It consists of Terminalia chebula (Haritaki), Terminalia bellerrica (Bibhitaki), Emblica officinalis (Āmalaki), Aspalitum (Śilājitu-Śuddha), Commipora wightill (Guggulu Shuddha), Ricinus communis (Ēranda), Picorrhiza kurroa (Katuka) leaf juice of Azadiracta indica (Nimba) and metals including Shuddha Rasa (purified mercury), Śuddha Gandhaka (purified sulphur), Laua Bhasma (iron compound in ash form), Abhraka Bhasma (mica in ash form), and Tāmra Bhasma (copper compounds in ash form).

An experimental study clearly demonstrated the hepatoprotective effect of well-known Arogyavardhini vati against CCl₄ induced hepatotoxicity in rats. Though it contains copper and mercury still it is safe if prepared properly. Argyavardinivati along with leaf juice of Bhunyalaki (Phyllanthus frataruns) and Triphla chūrṇa have a significant role to clearing of HBsAg and normalise liver transaminase in hepatitis B infected patient within 45 days.

Rasāyana Therapy –
Rasāyana drugs are very much effective in liver ailments. Traditionally ‘Rasāyana’ drugs are used in various idiopathic conditions. The strong antioxidant activity of ‘Rasāyana’ was found to be 1000 times more potent than ascorbic acid, α-tocopherol, and probucol. For example, oral administration of ‘Brahma rasāyana’ (50 mg/animal for 10 and 30 days) significantly increased the liver antioxidant enzymes such as SOD, CAT along with tissue and serum levels of GSH. Thus, indicating that ‘Brahma rasāyana’ could ameliorate the oxidative damage produced in the body by radiation.

Some Other Distinguished Researches –
Cissus Quadrangularis -
H. M. Viswanatha swamy in his research paper entitled “Hepatoprotective effect of cissus quadrangularis stem extract against rifampicin-induced hepatotoxicity in rats” has mentioned that they have conducted a study to investigate the hepatoprotective activity of methanol extract of Cissus quadrangularis against rifampicin-induced hepatotoxicity in rats. The coarse powder of the shade dried stem of Cissus quadrangularis was subjected to successive extraction in a Soxhlet apparatus using solvents petroleum ether (60-80°) and methanol. Liver damage was induced in Wistar rats by administering rifampicin (54 mg/kg, p.o.) once daily for 30 days. Methanol extract of Cissus quadrangularis (500 mg/kg, p.o) was administered 1 hour prior to the administration of rifampicin (54 mg/kg, p.o) once daily for 30 days. Silymarin (50 mg/kg p.o) used as reference drug. Elevated levels of...
aspartate transaminase, alanine transaminase, alkaline phosphatase and bilirubin following rifampicin induction were significantly lowered due to pretreatment with methanol extract of Cissus quadrangularis. Rifampicin administration significantly increased lipid peroxidation and decreased antioxidant activities like reduced glutathione, superoxide dismutase and catalase. Pretreatment of rats with methanol extract of Cissus quadrangularis significantly decreased lipid peroxidation and increased the antioxidant activities. Histology of the liver section of the animals treated with the methanol extract of Cissus quadrangularis further confirms the hepato-protective activity. The results of the present study indicated the hepato-protective effect of methanol extract of Cissus quadrangularis which might be the effect of its antioxidant property due to the presence of β-carotene.[xv]

Vidakana Chūra –
Jayarama Reddy and colleague in their study namely “Studies on hepatoprotective activity of traditional Ayurvedic formulation ‘Vidakana Chūra’ against carbon tetrachloride induced hepatotoxicity in albino rat” has carried out a study to ascertain the hepatoprotective activity of traditional Ayurvedic formulation ‘Vidakana Chūra’. In this study the effect of carbon tetrachloride and herbal products on liver weights was studied. Vidakanachūra is a very simple herbal preparation containing only 3 herbal ingredients namely Morigna oleifera, Embelia ribes and Piper longum. None of these herbs are present in the market. Liv-52 formulation as well as other popular marketed liver tonics like, Tefroli, Livergen, Stimuliv etc. The hepatoprotective activity of this simple formulation was found to be as effective as Liv – 52, infact the activity on decreasing the serum bilirubin level was much higher when compared to Liv – 52. This indicates that this formulation can be more useful in treatment of jaundice. Also being a simple formulation of easily available ingredients, the formulation definitely is cost effective and can be popularized for treatment of liver disorders.[xvi]
REFERENCES


Source of Support: Nil.
Conflict of Interest: None declared

How to cite this article: Dnyaneshwar & Kranti: A Brief Review On Current Scenario of Hepato-Protective Ayurvedic Drugs. AAMJ 2017; 3:1334 – 1338.