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Role of Bhringaraja(*Eclipta alba*) in Liver Diseases as a Rasayanawith Special Reference to Hepatoprotective Activity

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Abstract: ***Liver is one of the critical organs of human body. It is associated with metabolism, detoxification, circulation and so on. According to WHO, Liver disease is the 10th most common cause of death in India. Synthesis and excretion of bile, albumin, prothrombin, and the production of the compliments which are the major effectors of the humoral branch of the immune system occurs mainly in liver. According to ayurveda liver disorders related to rasavaha and raktavahasrotas. There are many ayurvedic drugs which have tremendous effect on liver. Bhringaraja (Eclipta alba) is one among them. This plant has very rich ethnomedicinal history and it is a popularly known as hepatoprotective drug. Its therapeutic value has been mentioned in Bhavaprakasha and other nighantus. So this presentation aims to prove utility of Bhrigaraja (Eclipta alba) - As Rasayana drug in liver diseases.***

Bhrigaraja has Katu, tikta rasa, Katuvipaka, ushnavirya and laghu, ruksha guna therefore, it acts on Pitta dosha (fire and water components of body) and vata dosha (air and space components of body). It acts on rasavaha and raktavahasrotas. It acts as a rasayana. Also, it possesses wide range of phytochemical constituents such as coumestans, saponins and alkaloids which exhibit significant biological properties such as hepatoprotectivity, Antibacterial, antiviral, anti-stress and immunomodulatory.

Liver being major organ in human body, it involves in most of the metabolic functions. Hence, protection of liver is necessary. In contemporary science wide range of drugs are available for the treatment and well-being of the liver, but down side of these medicines is that it causes more side effects. In ayurvedic system as the disease is not treated only based on its symptoms but according to dosha, dushya, Agni, Bala etc by this the potential of Bhringaraja can be studied. Further clinical studies on the mentioned herb is required to confirm their effectiveness.

Keywords: Bhringaraja, Rasapanchaka, Rasayana, phytochemicals, hepatoprotective.

I. INTRODUCTION

The liver is a vital organ involved in the maintenance of metabolic functions and detoxification of the exogenous, endogenous challenges like xenobiotic, drugs, viral infections and chronic alcoholism.

It is connected with most of the physiological processes, which include growth, immunity, nutrition, energy metabolism and reproduction.

Synthesis and excretion of bile, albumin, prothrombin and the production of the compliments which are major effectors of the humoral branch of the immune system occur mainly in the liver(1). Liver disease accounts for over two million deaths annually and accounts for 4% of all deathsworldwide(2).1 out of 3 liver-related deaths occur among females.Liver diseases are fast being recognized as public health priorities in India.

Yakrita: The moola of Raktavahasrotasis involved in the diseases like Yakrutodara, Kamala, etc. The term 'Yakritvikara' is introduced by Acharya Bhavamishra(3).

Innumerable drugs have been mentioned to treat yakritvikara by various Acharyas from time to time.

Eclipta alba is one of the most well-known and valuable medicinal plants in India. It is found in marshes, rivers, and lakes or on the foothills of the Himalayas in India.It is also utilized as a functional food.

It is a wellknownhepatoprotective drug. It significantly works on Pitta dosha and Vata dosha. It acts as a rasayana.The extract obtained from the leaves is used as liver tonic, rejuvenative. It is mentioned in Dhanvantari Nighantu(4), Raj Nighantu(5), KaiyadevaNighantu(6) for its use in pandu, shotha and kamala


Fig 01. Bhringaraja


Fig 02. Bhringaraja

II. AIMS AND OBJECTIVES

Present study aims to review the Bhringaraja as a hepatoprotective.The objective of this study is to explore role of Bhringaraja in liver diseases.

III. MATERIALS AND METHODS

All the relevant information about this drug is collected from Ayurvedic classical texts and about hepatobiliary diseases relevant information is collected from contemporary text books peer reviewed journals and various papers with digital sources. The biochemical aspects of drug has been searched from various books and sites.

Table no.1 Properties of Bhringaraja

Rasa	Katu,Tikta
Virya	Ushna
Vipaka	Katu
Guna	Laghu,Rooksha

Bhringaraja is rich in qualities such as Katutikta rasa, Katuvipaka, Laghu,rookshaguna and ushnavirya, therefore it is considered as Pitta, Kapha and Vata shamaka[7]. The properties of Katu, tikta rasa and Ushna virya helps in increasing absorption and digestion of food. This helps in **Agnideepana** and **Amapachana.**

It is a **KatuPaushtika**dravya. It increases appetite and does amapachana, and enhances **formation of seven Dhatus**, which results in Rasa and Rakta Dhatu Vardhan. It also acts as an enhancing moderator of all the Dhatus. Utpatti of yakruta is from rakta and Moola sthana of Raktavahasrotas is Yakruta, as bhringaraja acts on rakta it indeed stimulates Yakruta. Hence,it is considered as Yakrutauttejaka.

It helps in controlling vitiation of Pitta and removal of excessive Pitta out from the body. It does proper vahana of Rasa and RaktadiDhatu.It nourishes body, improves vital functions and overall health.

PHYTOCHEMISTRY OF E. ALBA (BHRINGARAJA)[8]

Eclipta alba (Bhringaraja) contains wide range of diverse phytochemical constituents which include coumestans, alkaloids, flavonoids, glycosides, polyacetylenes, and triterpenoids, phenolic acids, saponins, sterols, sesquiterpene lactones, proteins, amino acids, carbohydrates, and many more.

Coumestans

Coumestans are the main active phytochemical constituents of E. alba which are the derivatives of coumarin. Wedelolactone, demethylwedelolactone, dimethylwedelolactone-7-glucoside, isodemethylewedelolactone, and strychnolactone are the main coumestans present in the whole plant especially in the leaves. These are believed to be associated **anti-cancer** properties.

Wedwlolactone known for its **hepatoprotective** and **anti-inflammatory** activity.

Saponin

Saponins are mainly associated with the cytotoxic activity. Eclalbatin, alpha-amyrin, ursolic acid, and oleanolic are novel triterpene saponin which has been isolated from the whole plant of E. alba. Eclalbatin, dasyscyphin C is present in the roots which are associated with the properties such as hepatoprotective, anticancer, antiviral, and antioxidant activity.

Flavonoids

Apigenin, luteolin and luteolin-7-glucoside, and orobol are the main flavonoids present in E. alba. Apigenin and luteolin are associated with the anti-cancer properties. Luteolin has antioxidant and potential anti inflammatory effects.

IV. DISCUSSION

Bhringaraja is one of the hepato-protective drug which mainly acts on liver and spleen. It improves bilious flow.Bhringarajaswarasa is used as a liver tonic.There are so many effective proven allopathic medicine for liver disorders but with time they have shown adverse effects.

Bhringaraja being katu and tikta rasa, it clears srotas as chinnatibandhansrotamsi is the one of the pharmacological activity pertaining to katu rasanot only that it also removes toxics from the body as it does shodhana and supports the body's natural detoxification process. By which it helps in the activity of bilious flow.Kledashoshana is achieved by Tikta rasa &Katu rasa of the drug.It does deepana and pachana due to its ushnavirya even the modern science is suggestive of this activity as it stimulates liver function and promotes easy flow of bile supporting disgestion. Antioxidant properties of Bhringaraja helps to prevent liver damage casued by free radicals. It protects liver cells from damage caused by toxins, virus and other harmful substances. It protects the liver from damage and promotes liver health by reducing liver inflammation and toxicity. By itsrasayana activity, it rejuvenates hepatocytes thereby helps in reviving its physiology without compromising normal functioning of body.With available literature and research work, Hepatoprotective, anticancer, Antiviral and antioxidant properties are attributed to Bhringaraja.

V. CONCLUSION

Bhringraja *(Eclipta alba)*is a wonder herb which is most commonly used in traditional systems of medicine for treating numerous human ailments.It possesses wide range of phytochemical constituents such as coumestans, saponins, and alkaloids which exhibit significant biological properties such as hepatoprotectivity, antibacterial, anti-viral, anti-stress.

In Ayurveda, it is used against diseases such as anorexia, jaundice, anemia and splenomegaly. This small medicinal herb with multiple therapeutic applications can be a promising and reliable source of new drugs in future.

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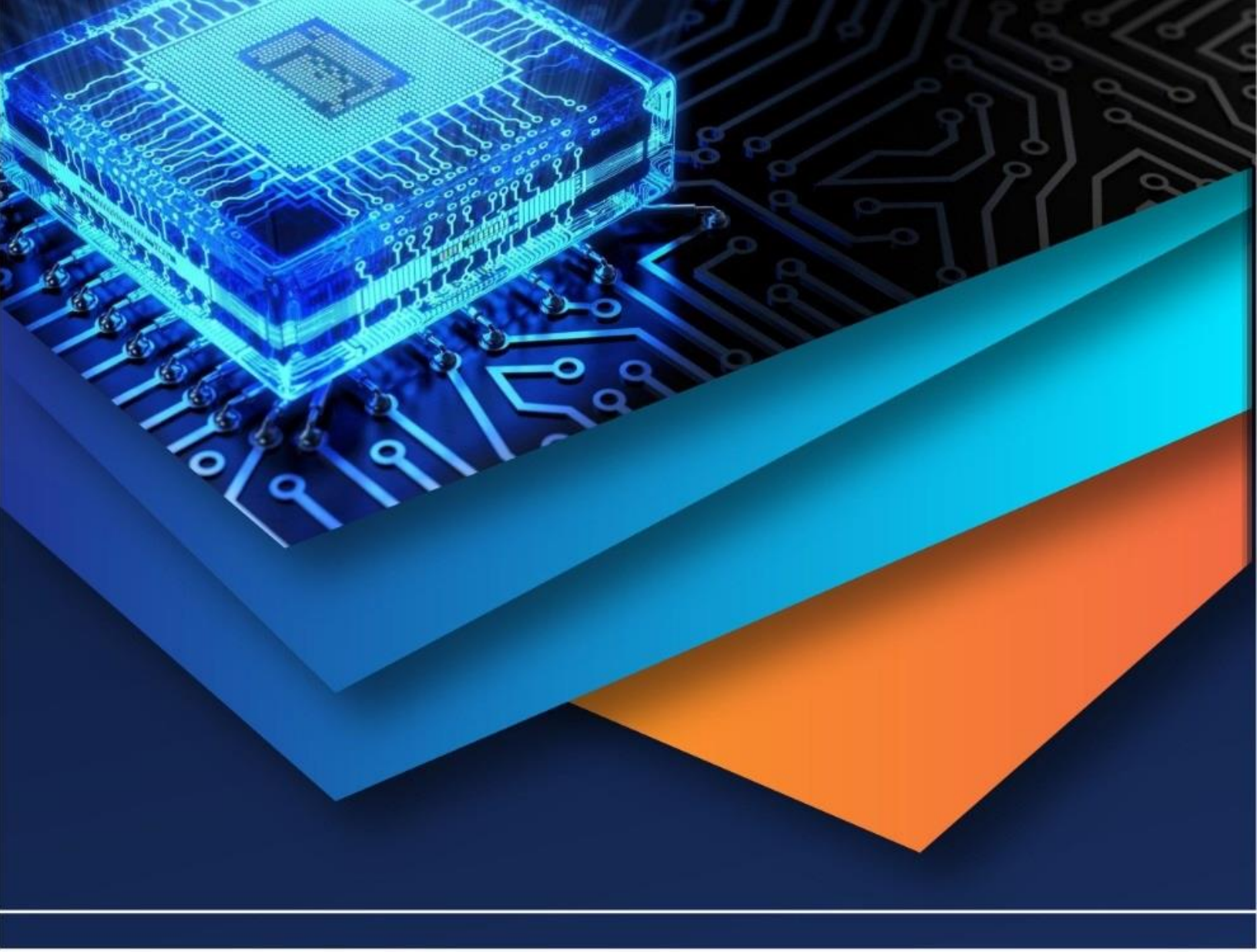

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