

A CRITICAL REVIEW OF SHARPUNKHA IN MANAGEMENT OF SPLENOMEGALY

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Article Received on
06 Nov. 2021,

Revised on 26 Nov. 2021,
Accepted on 16 Dec. 2021

DOI: 10.20959/wjpr20221-22630

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ABSTRACT

Splenomegaly is matter of concern today. Enlargement in the size of spleen is termed as splenomegaly. Infection like mononucleosis and other problems like cirrhosis, cystic fibrosis, and rheumatoid arthritis can lead to such condition. Again, it is caused due to various conditions like blood disorders, Collagen diseases, Metabolic disorders like Gaucher's disease and Porphyria's, malignancies like lymphomas etc. Its Symptoms includes pain in abdomen, bloating, indigestion, pallor, anaemia, fever, recurrent infections etc. Treatment modalities varies according to cause of this condition. As there is not much scope

in the treatment of splenomegaly in the modern medicine rather than splenectomy. Its complications growing up day by day. OPSI (Overwhelming Post splenectomy infection) causes 50- 70% of mortality rate. So, in order to avoid normal human anatomical changes and complications, we should go with Ayurvedic approach for this condition. Ayurvedic literature reveled drug called *Sharpunkha* (*Tephrosia purpurea*) as a key medicine to tackle with this problem due to presence of *Tikta*, *Katu*, *Kashaya rasa*, *Katu Vipaka*, *Ushna Virya* and specifically it has *Pleehaghna Prabhava*. Its pharmacological actions include hepatoprotective, analgesic, antispasmodic, anaesthetic, antihyperglycemic, anti-cancerous, anthelminthic etc. It is found all over India mostly in waste places or roadsides. So, this

research aims towards management of Splenomegaly through Ayurvedic approach with help of *Sharpunkha*. Now a days adulteration has been developed as a major issue in front of Ayurvedic Physician, Hence, this review is carried out for its identification too.

KEYWORDS: Splenomegaly, *Sharpunkha*, *Pleehaghna*, Ayurvedic management.

INTRODUCTION

Spleen is largest lymphoid organ in the body and has high vascular supply. It is wedge-shaped organ, normally lies in the peritoneal cavity in the upper left quadrant beside 9 to 12th rib. Its size and shape may vary but when we talk about its craniocaudal length it is up to 12 cm normally and increase in length beyond this can be clinically marked as condition of splenomegaly. The weight of adult spleen varies from 70g to 200g, beyond that indicates splenomegaly.^[1,2] According to Gallen, it is organ of mystery and its English meaning is 'ill temper'. It removes non-deformable intracellular substances from deformable cells by 'pitting' process and abnormal red cells by the process of 'Culling'. It acts as a reservoir of platelets. It also provides immunological functions like formation of lymphocytes, antibody IgM, production of tuftsin, properdin etc. It helps in bacterial clearance by phagocytosis process.^[3] It is very difficult to provide a scientific clinical approved definition to splenomegaly. But in general language a condition in which enlargement of spleen occurs with respect to its shape and size is termed as splenomegaly.^[4] Its incidence is very sparse, hematological causes is 25-66%, hepatic 12-46%, infective 13-25%, splenic 2-5%, while others includes 8-25%.^[5] It arises due to various factors. Blood disorders includes hereditary spherocytosis, Thalassemia, Sickle cell anaemia, leukemia etc. While infective like mononucleosis, Malaria, Kala azar, Anthrax, Tuberculosis, Typhoid, Schistosomiasis, Hydatid cyst leads to Splenomegaly. Again, Circulatory causes like Bacterial endocarditis, mitral valve stenosis, Portal hypertension, Splenic vein thrombosis and neoplastic like Hodgkin's lymphoma, non-Hodgkin's lymphoma, reticulum cell carcinoma proceeds to this condition. Recently, Felty syndrome, Sarcoidosis, Gaucher's disease porphyria erythropoietica shows greater prevalence of causing this disease.^[6] It is not always that person with enlarged spleen will show symptoms. In some cases, it may show symptom like Pain or fullness in abdomen, anaemia, pallor, jaundice, fatigue, frequent infection, acute haemolytic crisis exaggerated by infection and stress. On clinical examination it shows mass in left hypochondrium, it moves with respiration, unable to hook under right iliac fossa, inability to insinuate finger under left costal margin etc. Cholelithiasis are seen in about 60%

of cases.^[7] In Splenomegaly, 80% of platelets may be segregated in spleen causing thrombocytopenia and neutropenia.^[8]

If underlying disorder is not treated early, surgical intervention will be the last option. In persistent or crucial cases, surgical treatment may also provide the high-quality desire for recovery.^[9] This is how the modern science treat splenomegaly. But this can alter the normal human anatomy of the body. Which can put much impact on the body.^[10] Overwhelming post-operative splenectomy infection is commonly seen in first two years with incidence rate of 4% due to reduced IgM, tuftsin, properdin and other antibodies. Deep vein thrombosis and pulmonary embolism are 4 times more common in splenectomized patient. Other complications include gastric fistulas, left sided colonic injuries, left sided pleural effusion and basal atelectasis, portal vein thrombosis etc.^[11]

So, there is requirement of Ayurvedic approach towards splenomegaly where the treatment is done without alteration in normal human biology. Because Ayurveda is only medical science that focuses on host immunity rather than treating the disease and recovers the patient without alteration in natural constitution.^[12] Concentrating on splenomegaly when we go through Ayurvedic literature then we come across a drug named *Sharpunkha*. It is also termed as *Pleehashatru* as it acts on disease related to *Pleeha* that is spleen. Its botanical name is *Tephrosia purpurea* under the family of *Fabaceae*. It grows during India in waste locations or avenue sides. It has *Tikta*, *Kashaya rasa* with *Ushna Virya*, *Katu Vipaka* and *Laghu*, *Tikshna*, *Ruksha Gunas*. It is called as *Pleehagnya Dravya*.^[13]

It is very known for its hepatoprotective, analgesics, antispasmodic, antihyperglycemic properties.^[14] Its Root (*Moola*), Leaves (*Patra*), *Panchanga*, Seeds (*Beeja*) and *Kshar* are used in medicinal practice.^[15]

Current review purpose is to study role of *Sharpunkha* in the management of splenomegaly.

MATERIAL AND METHOD

This work is done by conducting literature survey and correlative scientific interpretation.

Previous work done

1. Dalwadi PP et al Did review on phytochemistry and pharmacological studies of *Sharpunkha*.^[16]

2. Pandey AK *et al* demonstrated *Sharpunkha* (*Tephrosia Purpurea*) and *Tuba Root* (*Derris elliptica*) as alternative medicines for innumerable diseases and disorders in Ayurveda.^[17]
3. Gupta RC. *et al* did Pharmacobotanical Studies On 'Shvet Sharpunkha'—A Comparative Diagnostic Account of *Tephrosia Villosa* Pers. and *T. Purpurea* (Linn.)^[18]
4. Deshpande SS *et al* demonstrated Antiulcer activity of *Tephrosia purpurea* in rats.^[19]
5. Neelesh Babu *et al* reviewed therapeutic potential and phytochemistry of *Tephrosia Purpurea*.^[20]

Geographical distribution

It is discovered all over India but mostly in waste locations or roadsides. It grows as unusual place barren region weed. In many parts it's far cultivated as inexperienced crop manure.

It is also distributed in Sri Lanka in poor soil, Ceylon, Mauritius, Tropical Africa and subtropical regions.^[21]

Botanical details^[22,23,24,25,26]

Latin name: *Tephrosia purpurea*

Family (Kula): Fabaceae

UpaKula: *Aparajita Kula (Papilionaceae)*

Synonyms

1. According to morphology

Banaphunkha: *Sharpunkha* leaf if torn then terminal component resemble an arrow.

2. According to properties and actions

Plehashatru: *Sharpunkha* could be very beneficial in disorder associated with *Pleeha* (spleen)

Pleehari: *Sharpunkha* is very helpful for *Spleenomegaly*

3. Vernacular names

English: Wild indigo

Hindi: *Sharpunkha*

Kannada: Adavi Neeli

Malayalam: Katamiri

Marathi: Unhali

Taxonomic classification

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Fabales

Family: Fabaceae

Genus: Tephrosia

Species: Purpurea

Rasapanchaka

Rasa: Tikta, Kashaya

Guna: Laghu, Ruksha, Tiksna

Vipaka: Katu

Virya: Ushna

Prabhava: Pleeaghna

Doshghnata: Kaph-Vataghna

Rogghnata: Pleeharoga, diseases of liver, spleen, heart, blood, tumours, *Vrana*, *Kushtha*, *Shwas*, poisoning etc.

Morphology and Other details^[27]

It is herbaceous perpetual plant grows up to 60 cm in tallness with spreading and glabrous branches. Leaves are compound 5 to 10 cm long with petiole of 1 cm. In which leaflets are 11 to 21 in number which can be optimizer reduce with 2 to 3 cm length and 0.8 to 1 cm width, glabrous above and clothed with fine silky hairs beneath. It has two types according to colour of flower, *Shweta (White)-Tephrosia Procumbens* and *Rakta (Pinkish red)- Tephrosia Villosa*. Herbal drugs are reviewed to be less toxic and free from side effects than synthetic drugs if given in proper dose and as per pathogenesis of the disease.

Inflorescence: It has raceme inflorescence 7.5 to 12.5 cm long.

Flowers: Flowers are papilionaceous with purple colour.

Fruit: It has pods fruit which is 3 to 4.5 cm long, linear and slightly curved with 5 to 6 seeds in one fruit.

Parts used: In *Sharpunkha* either *Panchanga* roots (*moola*), Leaves (*Patra*), Seeds (*Beeja*) or *Kshar* are useful.

Chemical constituents

Iso Tephrosin, Rateone, Tephrosin deguelm and Quercetin is found in roots. Whereas leaves contain 2.5% of rutin, calcium, magnesium, potassium, phosphorus, sodium and nitrogen. Beside this it contains lanceolatin A and B, Pongamol, Karangine and Kangone.

Pharmacological actions^[28]

Hepatoprotective, analgesic, antispasmodic, anaesthetic, antihyperglycemic, Anti-helicobacter pylori activity, Potent Wound Healer, Anti-bacterial, anti- carcinogenic etc.

DISCUSSION

Splenomegaly condition is clarified in Ayurvedic compositions for the sake of *Pleehodara*. *Pleehodara*, as indicated by Ayurveda is one among the eight sorts of Udara Roga for example abdominal growth. At the point when spleen broadens past typical measurements, it presents as abdominal amplification. *Pleeha* implies spleen and *Udara* implies abdomen. Thus, *Pleehodara* implies augmentation of spleen in the abdomen causing its amplification. It is frequently called as *Pleeha*.^[29] Etiology reveals that *Pleehodara* is because of sports like visiting excessively in vibrating vehicle, heavy sporting events that contain violent jerky moves of the frame and are carried out right away after the meals, immoderate sex, lifting heavy objects, indulging in heavy walking, immoderate vomiting and emaciation because of continual illness. When we go through pathogenesis of *Pleehodara*. we come to know that afflicted through the jerky actions of the frame etc, the spleen placed within the left side (flank or left hypochondriac region) enlarges and descends to reason expansion of the stomach; or else, quite a few nutritional elements main to increment and morbidity of *rasa*, *rakta* etc. Which in flip reasons expansion of the spleen.^[30] When we come across treatment of *Pleehodara* drug *Sharpunkha* is best for tackling this problem which possess *pleehaghna Prabhava*. That's why it is also called *Pleehari*. It has *Ushna Virya* due to which it penetrates into the spleen and which helps in healing inflammation of Splenomegaly. *Katu Vipaka* provide *Deepana Pachana* property which helps in metabolism function to avoid any infection. It is *Vata Kapha Shamaka*. *Vatahara* due to *Ushna Virya*, *Kapha Shamaka* due to *Katu Vipaka* and *Tikta Kashaya Rasa*. Due to presence of *Tikshna Guna* it acts as an *Anulomaka* (Prokinetic) and *Pittasaraka*. *Kashaya Rasa* and *Tikshna- Ushna Guna* causes *Shoshana* and *Bhedana* of *Pleeha* that provides contraction of *Pleeha* and helps in reducing its size and symptoms.

It acts on *Rasa* and *Rakta Dhatu*. *Pleeha* is the *Moolasthan* of *Rakta Dhatu*. Hence it causes blood purification action.^[31]

This property ensures it's *Pleehaghna*, *Vranahara*, *Kasahara*, *Swasahara*, *Jwaraghna Karma*. It's hepatoprotective, analgesic, antispasmodic, antihyperglycemic action play's major role in curing disease. In splenomegaly mostly paste of root of *Sharpunkha* is given with buttermilk because buttermilk act as best *Anupan* in abdominal diseases.^[32]



Image: Sharpunkha (*Tephrosia purpurea*).

CONCLUSION

From above study it can be concluded that modern science approach towards splenomegaly is not much acceptable when you focus on human organ system. Because treatment like splenectomy can disturb the anatomical as well as physiological functions of body. As spleen is one of the vital part of the our body so there is requirement of avoiding removal of spleen from the body and Ayurveda provide best drug to tackle with it in the form of Sharpunkha. So, this article highlights that Sharpunkha has capability to treat splenomegaly because of its energetic chemical elements and properties. Lots of single case studies has been carried out on splenomegaly but we have to find, Sharpunkha on larger group of patients. So, there is requirement to look at this drug in management of splenomegaly on huge scale.

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