

**Impact
Factor
3.025**

ISSN 2349-638x

Refereed And Indexed Journal

**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

Monthly Publish Journal

VOL-IV

ISSUE-III

MAR.

2017

Address

• Vikram Nagar, Boudhi Chouk, Latur.
• Tq. Latur, Dis. Latur 413512 (MS.)
• (+91) 9922455749, (+91) 9158387437

Email

• aiirjpramod@gmail.com
• aayushijournal@gmail.com

Website

• www.aiirjournal.com

CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

Article Review for Punarnava (*Boerhavia diffusa*); Its Traditional and Morphological View from Ayurvedic Aspect

Dr. Puja P. Purohit

P.G. Scholar, Department of Dravyaguna Vigyan,
Yashavant Ayurvedic College, P.G. and R.C. Kodoli. Tal. Panhala , Dist. Kolhapur.

Abstract

This review exposed the information of classical review, morphology, chemical constituents and some traditional uses of Punarnava herb. The whole plant; mostly root is used in inflammation, diabetes, renal dysfunction, anaemia, hepatotoxic conditions etc as mentioned in Ayurveda. So an over view of classical as well as modern pharmacological properties are given in this paper.

Introduction ^{[1] [4]}

Ayurveda is an ancient science and it deals with not only diseases but also healthy life of human beings. While focusing on treatment ;it gives various preparations which are either herbal or herbo-mineral in origine. One of the drug which is well known is PUNARNAVA. The plant Punarnava is found as a weed in various parts of India. In ayurveda punarnava also known as Pravrushayani (ie. It grows in rainy season.),Mandalapatrika (ie. Round shaped leaves.) etc.

The whole plant and preferably roots are used for curing diseases like Kamala (jaundice), Shvas(Asthama), Jvara(Fever), Shotha(inflammation) etc. It is also used as Rasayana.An attempt of this article has been made to focus on very useful drug in Ayurveda.

Classical Review ^[4]

1) CHARAKA SAMHITA:-

Punarnava is used in

- Swedopaga gana (an adjunct to sweatin therapy)
- Anuvasanopag gana (an adjunct to oleating therapy)
- Kas-hara gana (anti-tussive)
- Vayasthapana gana (rejuvenator)

And also used in treatment of Kushtha (skin disease) with Dadhimanda.

2)SUSHRUTA SAMHITA:-

It is mentioned in

- Vidarigandhadi gana
- Shaak varga.

3)ASHTANGA SANGRAHA:-

In this samhita plant Punarnava is included in

- Kasahara Mahakashaya
- Vayasthapana Mahakashaya.

4) BHAVAPRAKASHA NIGHANTU:-

In Bha.Ni. Punarnava is classified into two types:

- 1) Shweta = synonyms are Shwetamoola , Shothagni , Deerghapatrika.
- 2) Rakta = It is also known as Raktapushpa , Shilatika , Shothagni , Kshudra , Varshabhu , Varshaketu , Kathillaka.

5) NIGHANTU ADARSHA :-

Punarnavadi Varga:- The first plant is punarnava.

6) SHARANGADHARA SAMHITA:-

In this ancient text Punarnava Rasanjana is mentioned.

7) AYURVEDA SARA SANGRAHA:-

This text gives us various formulations of punarnava eg. Punarnavasava , Punarnavashtaka , Punarnavadi kwath , Punarnava arka.etc .

8) Punarnava is also mentioned in Chakradatta Tika for treatment of shotha , Vidradhi , Visha -dosha like snake bite.

9) In Harita Samhita Punarnava kwath is used for Nidranasha (insomnia).

10) SHODHAL NIGHANTU :-

Uses of Punarnava in Yonishool (veginal pain) , Visha vikara.

RASAPANCHAKA^[3]

All classical reviews show

	Shweta	Rakta
Rasa	Madhur,Tikta,kashay	Tikta
Veerya	Ushna	Ushna
Vipaka	Katu	Katu
Guna	Laghu,Ushna,Sara,Ruksha	Laghu ,Sheeta,Sara,Ruksha.

USEFUL PART:-^[7]

Mainly ROOT is used in treatment. Panchanga of plant is also used.

KARMA:-**Doshagnata-**

Pittaghna- due to madhura ,tikta ,kashaya rasa.

Vaatashamak-due to ushna veerya.

Kaphashamaka- due to laghu , ruksha , ushna guna.

But in case of Rakta punarnava it is Vaatakar due to sheeta guna.

ROGAGHNATA:-

Mutrala,Shothaghna ,Deepana ,Anuvasanopag ,Swedopaga ,Vayashtapana these are main characters of the plant hence it is used in treatment of Shotha,Udara,Pandu,Gar-visha badha, Urusthambha,Amavata,Netraroga.

MODERN REVIEW:- [7]

• **CLASSIFICATION:-**

KINGDOM = plantae

ORDER= coryophyllales

FAMILY= Nyctaginaceae

GENUS= boerhavia

SPECIES= Boerhavia Diffusa.

SYNONYMS= *Boerhavia adscendens*, *B. Caribea*, *B. Coccinea*, *B. Peniculata*, *B. Viscose*. The references is also found that there are 6 species which are found in India. these are *B.diffusa*, *B.chenensis*, *B. Rependa*, *B. Repens*, *B. erecta*, *B.rubicunda*.

VERNACULAR NAMES

Latin name- *Boerhavia diffusa* ,*B. Repens*.

Sanskrit- Punarnava , Hindi- Santh, Lal Punarnava , Beshakapore. English- Hogweed, Spreading hogweed, Marathi- Ghetuli.

MORPHOLOGY [1]



1) Stem= greenish purple, stiff slender, cylindrical, swollen of nodes, minutely pubescent or nearly glabrous, prostrate divaricately branched, branches from common stalk, often more than a meter long.

2)Root= well developed, fairly long, somewhat tortuous, cylindrical, 0.2-1.5 cm in diameter, yellowish brown to brown in colour, surface soft to touch but rough due to minute longitudinal striations and root scars, fracture short, no distinct odour, taste, slightly bitter, sweet and pungent.

3)Leaves= Opposite in unequal pairs, larger ones 25-37 mm long smaller ones 12-18mm long ovate-oblong or suborbicular, apex rounded green and glabrous above, whitish below margine entire or subundulate, dorsal side pinkish in certain cases, thick in texture, petioles nearly as long as the blade , slender.

4)Flowers- very small, pink coloured, nearly sessile or shortly stalked, 10-25 cm in small umbels, arranged on slender long stalks, 4-10 corymbs, axillary and in terminal panicles, bracteoles, small acute, perianth tube constricted above the ovary, lower part greenish, ovoid, ribbed, upper part pink, funnel shaped 3mm long, stamen 2-3.

5)Fruit=One seeded nut, 6mm long clavate, rounded, broadly and bluntly 5 ribbed, viscidly glandular.

TYPES [5]

There are TWO tuypes of Punarnava mentioned in Ayurveda. 1)Shwet (white) Punarnava - *B. Repens* Linn. And 2)Rakta (red) Punarnava - *B. Rependa* Willd. The third blue coloured variety is also cited in Raj Nighantu.

PHYTOCHEMICALS ^[2]**Punarnavine:-**

Effect of punarnavine on the cell mediated immune response in metastatic condition was studied using mice; it enhanced natural killer cell activity, antibody dependant cellular cytotoxicity and antibody dependant complete mediated cytotoxicity and activity was observed in treated group much earlier compared to the metastatic tumor bearing control. Production of cytokines such as IL-2 and IFN-gamma were significantly enhanced by punarnavine compared to the untreated metastatic tumor bearing control. These results indicate punarnavine could enhance the immune response. It shows immunomodulatory effects, radioprotective, anti-angiogenic activities.

Potassium sulphate:- ^[6]

It is a mineral and it plays a role in many body functions like transmission of nerve signals, muscle contractions, fluid balance and various chemical reactions. It is used for treating and low potassium levels, high blood pressure, strokes. It is also used for treatment of dizziness, symptoms of menopause, allergies, acne, alcoholism, Alzheimer's disease, gout, colitis, muscular dystrophy etc.

Whole plant shows following phytoconstituents Punarnavine (Alkaloids), Beta-Sitosterol (Phytosterols), Liriodendrin (Lignans), Punarnavoside (Rotenoids), Boerhavinone (Xanthones), potassium nitrate (rotenoids). The root contains the rotenoids boerhavinones A1, B1, C2, D, E and F besides the new dehydroisofurenoxanthin, Alanine, Arachidic acid, Aspartic Acid, Behenic Acid, boerhavinone, campesterol, doucosterol, beta-ecdasone, flavones, 5-7-dihydroxy-3-4-dimethoxy, 6-8-dimethyl galactose, glutamic acid, glutamine, glycerol, glycine, hentriacontane N, heptadecyclic acid, histidine, hypoxanthine-9-1- β -D-ribofuranoside, leucine, liriodendrin, methionine, oleic acid, oxalic acid, palmitic acid, proline, hydroxyl serine, sitosterol oleate, sitosterol palmitate, stearic acid, stigmasterol, syringaresinol-mono- β -D-glucoside, threonine, triacontan-1-ol, tyrosine, ursolic acid, valine, xylose, tricacontanol, heptatriacontan, 5-7-dihydroxy-3, 4-dimethoxy-6, 8-dimethyl flavones, and unidentified ketone. The roots contain the rotenoid, boerhavinone, an antifibrinolytic agent, two lignans, liriodendrin and syringaresinol mono β -D-glucoside.

**Traditional uses**

In case of generalized oedema i.e. General anasarca is most known use of drug Punarnava. Leaves are anti-inflammatory in action and so external application is done. Pulp of punarnava is used in hepatitis. Powder is also used in ascites, ghee used in jaundice to remove aggravated pitta through purgation. Severe studies of Punarnava indicate its hepatoprotective, immunomodulatory, hypoglycaemic, anti-asthmatic, anti-fibrinolytic, chemoprotective, anti-proliferative, anti-estrogenic actions.

Medicinal Uses

1. Punarnava is beneficial in treating obesity.
2. Punarnava is effective in treating a disease called dropsy, a condition wherein excess of watery fluid gets accumulated in the tissues and body cavities. A liquid extract of this plant stimulates urine secretion and discharge.
3. It is also useful in treating Ascites, a condition caused by fluid accumulation in the abdominal lining and is particularly useful in treating specific types of Ascites caused by certain liver diseases.
4. The roots of the plant help in killing intestinal worms.
5. It promotes mucous removal from bronchial tubes and hence beneficial in treating Asthma. When the paste made out of the roots of this plant, is applied externally on the skin, it forms a beneficial dressing for edematous swellings, ulcers and skin diseases.
6. Other benefits include treatment of anemia, nervous weakness, paralysis, constipation and cough.
7. Studies have revealed that punarnava is an excellent diuretic, anti-inflammatory, mild laxative and is a heart tonic.
8. Punarnava is also used in treating obesity, improving appetite, jaundice, and general fever.

Conclusion

Punarnava is used from ancient period in various combinations with herbs and minerals or sometimes used as single drug for multiple benefits. The traditional texts gives us the uses of its properties and formulations being used in various conditions like inflammations, renal stones, anaemia, jaundice, eye disease, joint pain etc. The modern research has also given an anti-diabetic, anti-stress, anti-oxidant, hepatoprotective etc effects. Some studies have shown that leaves have much nutritive components like sodium, calcium due to which it can be considered as component of diet. Not only this but the scope of other drug also lies in the fact that more formulations can be formed and tested in animal and human life as well.

References

1. Pharmacological properties of Boerhavia Diffusa ;A Review by Krishna Murti, Mayank A. Panchal, Vijay Lambale, International Journal of Pharmaceutical sciences Review and research Vol.5, Issue 2, Nov-Dec 2010 page no. 107-108
2. Journal of Pharmacy Research Vol.5, Issue 3, March 2012. by Somasundar G. Et al./ Journal of pharmacy research. P.no. 2085-2087
3. Research Journal of Pharmaceutical, Biological and Chemical Sciences Review article Punarnava A Review by D Santhosh. Oct-Dec 2011 Vol.2, Issue 4, p.no. 428-429.
4. International Research journal of Pharmacy. www.mokshaph.com
Punarnava : A promising Indigenous Herbal Drug. By Abbi Charu, Kumar Vinod, Kumar Shameet, Kumar Dinesh. P.no. 85-86
5. Therapeutic uses of Punarnava (Boerhavia diffusa) Poonam Sharma. Review article International Ayurvedic Medical Journal. ISSN-2320-5091.
6. Punarnava Comprehensive control of urinary tract infections. www.himalayastore.com/./punarnava.htn
7. Boerhavia diffusa -wikipedia en.wikipedia.org/./boerhavia_diffusa.