

PUNARNAVA AS NEPHROPROTECTIVE DRUG IN THE TREATMENT OF KIDNEY DISEASESingh Pooja^{*1}, Pal Satendra², Tiwari R.C.³, Dikshit Manisha⁴, Singh Anoop Kumar⁵ and Sharma Ved Bhushan⁶¹M.D Scholar at UAU in Agadtantra.²M.D Scholar at UAU in Agadtantra.³Professor and HOD at UAU in Agadtantra.^{4,5}Associate Professor at UAU in Agadtantra.⁶Assistant Professor at UAU in Agadtantra.***Corresponding Author: Dr. Pooja Singh**

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ABSTRACT

Ayurveda is an ancient traditional approach to medicine in India. In *Ayurveda*, we got innovative research thought from 1st chapter of *Charak Samhita*. *Punarnava* mentioned as *vishghna dravya* [antitoxic drug] in *shusrut samhita kalp sthana*. *Boerhavia diffusa* Linn [family –Nyctginaceae] is the botanical name of *Punarnava*. The meaning of *punarnava* is the rejuvenation or regeneration of the body's cells. *Punarnava* can rejuvenate dying cells and help to revive the dying organs of the body. Nowadays, the use of herbaldrugs for the treatment of various diseases is developing all over the world. *Punarnava* is used in various Kidney disorders like CKD. Chronic kidney disease is a condition that causes a gradual loss of kidney function. Modern management strategy involves dialysis and renal transplantation requiring high costs and difficulty, so very few patients can receive sufficient renal care for financial reasons. Hence it is necessary to explore safe and cost-effective treatment. *Punarnava* used as **Ekala dravya** in the treatment of kidney disease on the basis of its antitoxic and rejuvenation properties. *Punarnava*, having diuretic properties (*Mutravirechan*), removes contaminants from the blood through the urine and acts as a Vishghna dravya (anti-toxic drug). In many clinical case studies, the use of *punarnava* shows that kidney damage can be either partially or completely reversed and the frequency of dialysis may be reduced or may not be necessary. Thus, all of these cases studies show that *Ayurvedic* medicine has the potential to make an important therapeutic contribution all stages of chronic kidney disease.

KEYWORDS: *Ayurveda*, *Punarnava*, *Vishghna dravya*, chronic kidney disease, *Ekala dravya chikitsa*.**INTRODUCTION**

CKD is major area of concern for medical science. Environmental or medical factors that lead to kidney disease and may cause structural and functional problems in the renal system. CKD affects about 175 to 200 million people in India (about 17.4%), according to the latest study by the Indian Society of Nephrology and Harvard University. Around 18,000 to 20,000 patients (10 percent of New ESRD cases) are getting renal replacement therapy in India. CKD poses a growing problem to society as an 8 per cent annual incidence rate.^[1] The conventional management approach includes dialysis and renal transplantation involving high costs and complexity, so that due to finances, very few patients are able to get adequate treatment of the kidney. Therefore, it is necessary to explore safe and cost-effective treatments. *Punarnava* (*Boerhavia diffusa* Linn. Fam-Nyctaginaceae) used as *Ekala dravya* in the treatment of kidney disease on the basis of its antitoxic and rejuvenation properties.

पुनार्नावस्यार्धपलनवस्यपिष्टमपिबेधः पयसाऽर्धमासम्
मासद्वयंतत्रिगुणंसमावाजीर्णोऽपिभूयः पुनर्नवः स्यात्^[2]

Ayurveda works on the *Dosha*, *Dhatu*, and *Mala* samyta principle. "*Dhatu samya kriya chokta tantrasyaasya prayojnam*".^[3] In *Ayurveda* kidney is called *Vrakka*.

रक्तमेदःप्रसादाद्वृक्को^[4] Origin of *Vrakka* is from *Rakta* and *Meda dhatu*. In *Ayurveda* toxins of urine is called *Mala*. According to *Ayurvedic* principle of treatment, our aim is to treat *Rakta*, *meda* and *mala*.



Punarnava have various properties mentioned various *samhitas*. The drug profile of *punarnava* is given below-

Table no 1: *Punarnava* drug profile.^[5]

Ayurvedic properties	Activity	Pharmacological activity in Ayurveda	Pharmacological activity in modern
. <i>Dosha</i>	<i>Tridoshar</i>	-	-
<i>Guna</i>	<i>Laghu, Ruksha</i>	<i>Medhar</i>	Balanced Lipid Profile
<i>Rasa</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Raktshodhak, Raktvardhak</i>	Blood Purifier, Increased Hb%
<i>Vipak</i>	<i>Madur</i>	<i>Raktshodhak, Raktvardhak</i>	Blood Purifier, Increased Hb%
<i>Virya</i>	<i>Ushna</i>	<i>Medhar</i>	Balanced Lipid Profile
<i>Karma</i>	<i>Anuloman,</i>	<i>Shothhar</i>	Reduced Odema
<i>Satmyikarna</i>	<i>Rasayan, Vishaghna</i>	-	Rejuvenation
<i>Gana</i>	<i>Vayasthapana</i>	-	Rejuvenation

Pharmacology activity^[6]

Punarnava (*Boerhavia diffusa*) has attracted lot of attention due to its prevalent uses in *Ayurvedic* system of medicine. It is widely used in jaundice, hepatitis, odema, oligurea, anemia, inflammation, eye disease etc. Pharmacologists and clinicians have investigated '*Punarnava*' for all these activities. Some important pharmacology studies are given below-

- Hepatoprotective-** In some study *punarnava* shows hepatoprotective activity. It slightly lower the increased SGOT, SGPT in rats. The extract of *punarnava* did not show toxicity on oral dose. The study also showed that administration of aqueous form of *punarnava* had more hepatoprotective activity than the powder form.
- Diuretic-** The effect of extract of red and white varieties of the plant was studied on diuresis and renal enzymes. Both the varieties exhibited diuretic activity in toads. White varieties showed comparatively high activity, it stimulated the activity of kidney d-amino acid oxidase. *Punarnava* decoction showed good diuretic activity in rats. The diuretic action of the plant was shown to be due to β -ecdysone isolated from the root.
- Anti-inflammatory-** The aqueous and acetone extract of the root showed significant anti-inflammatory activity against carageenan-induced odema and formaldehyde-induced arthritis in albino rats. The effect of root extract was studied on acute pyelonephritis in rats. It reduced the inflammation changes as well as the abscess formation in the kidney. It also reduced the bacterial count in the urine samples of infected animals.
- Antistress and Immunomodulation-** The plant extract reversed the stress-induced elevation in the levels of Glucose, Cholesterol, SGPT, BUN and reduction in Triglycerides. The alkaloidal fraction from the root was studied for its effect on cellular and humoral immunity function in mice. The study revealed that the alkaloidal fraction exhibited in-vivo immunostimulatory activity without an in-vitro effect in mice.

- Antifertility-** The ethanolic extract of root provided to pregnant albino female rats during the entire period of gestation did not show any teratogenic effect and no foetal abnormality.
- Radioprotective-** In a study on the plant in radiation-induced haemopoietic injury in albino mice. The study indicated that the plant had selective effect on the erythroid compartment.
- Antimicrobial-** The alcoholic extract of root showed antimicrobial activity against *Staphylococcus aureus* whereas aqueous extract was active against *Escherichia coli* and antifungal activity against 3 keratinophilic fungi.
- Anthelmintic-** The aqueous extract of leaf showed nematicidal activity against second stage juveniles of *Meloidogyne incognita* chitwood.
- Anti-viral-** The aqueous extract of root was reported to contain an agent with characteristics of protein and which showed broad spectrum potent antiviral activity against tubular, spherical and potato virus X in different plant host virus combinations. The aqueous extract of leaves inhibited potato virus Y infection on chilli plants.

CONCLUSION

By the all counts and with proven results, it is no wonder that the advantage of using *Ayurvedic* medicine in Chronic Kidney Disease is very useful. In most patients, the kidney damage can be either partly or fully reversed, the frequency of dialysis can be reduced or no need. Thus *Ayurvedic* medicine has the potential for an important therapeutic contribution in all the stages of this condition.^[7] In difficult condition where conventional treatment is beyond the financial capacities of common man, this therapy (use of *Punarnava*) is hopeful, cheap and promising for Chronic Kidney Disease patients. The treatment approach use of *Punarnava* is a safe and effective in case of Chronic Kidney Disease.

REFERENCES

1. Jose, M.L., Carlos, M.S., Ana, B.R., and Francisco, J.L. Common Pathophysiological Mechanisms of Chronic kidney disease: Therapeutic Perspectives Pharmacology and Therapeutics, 2010; 128: 61-81.
2. Gupta kaviraj atrideva astang hridaya edited with vidhyotini hindi commentary reprint 2019, chaukhamba sansthana Varanasi p.g. 825, uttar tantra.
3. shashtri kashinath and chaturvedi gorakhnath charak samhita edited with vidyotini hindi commentary reprint-2014, chaukhamba sanskriti sansthana varansi part 1, p.g 28, sutra sthan.
4. shashtri ambikadatta sushruta samhita edited with ayurveda tattva sandipika, reprint 2011. chaukhamba Sanskrit sansthana, Varanasi part 1, p.g. 42sharira sthana.
5. Sharma priyavat dravyaguna vijnana reprint 2019, chaukhamba Sanskrit sansthana, Varanasi vol.2, p.g. 630, chapter 8 mutrladi varga.
6. Indian medicinal plants vol.4, editors-A.K. Gupta, Madhu Sharma, Neeraj tendon, Indian council of medical research, V. Ramalingaswami bhawan, ansari nagar, new delhi, India.
7. Patel, M.V., Gupta, S.N., and Patel, N.G. Effect of Ayurvedic treatment on 100 patients of chronic renal failure other then Diabetic Nephropathy. Ayu., 2011; 32(Suppl 4): 483-486.