



ISSN 2456-3110

Vol 8 · Issue 10

October 2023

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

Vishnukranta (*Evolvulus alsinoides* Linn.) : A Clinical Drug Review

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ABSTRACT

Vishnukranta (*Evolvulus alsinoides* Linn. Convolvulaceae), has been documented in Ayurvedic pharmacopoeias which includes *Samhita* (treatise), *Nighantus* (lexicons), *Chikitsa* (compendia of Ayurveda). This paper provides a collective information regarding *Vishnukranta*, its properties and actions like *Budhi-Medha-Smruti Prada* (i.e., enhances grasping, retention and recall activity), *Cheto Vikarjita* (Drug used for maintenance and treatment of psychological disorders). As a single drug, *Vishnukranta* is indicated in *Jvara* (fever), *Krumi* (worm manifestation), *Vrana* (Ulcer) etc. This review may enrich to documentary research and may provide collective and detailed information about *Vishnukranta* as is presented in *Ayurveda* classical texts.

Key words: *Ayurveda*, *Evolvulus alsinoides*, *Vishnukranta*

INTRODUCTION

Vishnukranta is *Medhya Rasayan*, *Medhya Rasayan* primarily acts on brain and help in neuroleptic activities. *Vishnukranta* is considered as brain tonic, this is also *Krumighna* (antihelmenthic) *Shothahara* (anti-inflammatory) properties.

Dhee, *Dhruti*, *Smruti* in combination is *Medha*. *Vishnukranta* primarily acts on *Dhruti* and *Smruti*. This paper compiles the medicinal properties of *Vishnukranta* and clinical, experimental and Ayurvedic properties studies done related with those properties.

Latin Name : *Evolvulus alsinoides* Linn.

Family : Convolvulaceae

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Submission Date: 12/08/2023

Accepted Date: 18/09/2023

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: 10.21760/jaims.8.10.22

Rasadipanchaka (Ayurvedic pharmacodynamics properties) and Doshagnata

Rasa : *Katu Tikta*

Virya : *Sheeta*

Vipaka : *Katu*

Guna : *Snigdha, Laghu*

Doshagnata : *Tridosahara*

Ayurvedic properties (Actions and therapeutic indications)

Vishnukranta has been indicated as *Budhi-Medha-Smruti Prada* (Intellect and Memory enhancer), *Chetovikara* (Psychological disorder) for *Jvara* (fever), *Vrana* (Ulcer), *Kushtha* (disease of skin), *Krumi* (worm manifestation) and *Karma* like *Dahahara* (burning sensation), *Vishahara* (alleviation of toxins), *Chakshushya* (enhancement of vision), *Unmada-Mada-Bhramaharatva* (mitigation of insanity, intoxication and giddiness) and *Svasa, Kasaharatva* (alleviation of asthma and cough).

Modern view on *Evolvulus alsinoides* (Linn.)

***Vishnukranta* as brain tonic**

Two doses (100 and 200 mg/kg P.o.) of the ethanol extract and ethyl acetate and aqueous fractions were

administered in separate groups of animals. Both doses of all the extracts of EA significantly improved learning and memory in rats. Furthermore, these doses significantly reversed the amnesia induced by scopolamine (0.3mg/kg i.p). Nootropic activity was compared using piracetam as the standard. EA also exhibited potent memory enhancing effects in the step-down and shuttle-box advance paradigms.^[1]

Fig. 1: Vishnukranta



Vishnukranta as memory enhancer

Evolvulus alsinoides at a dose of 200mg/kg p.o. found effective in acute studies was administered 45 min prior to stress regimen for 7 days. EA reduced the stress induced perturbations similar to Panax quinquefolium (PQ)(100mg/kg p.o.), a well-known adaptogen. EA (100mg/kg) administered orally for 3 days in adult male Swiss mice, was effective in decreasing scopolamine induced deficit in passive avoidance test. The improvement in the peripheral stress markers and scopolamine induced dementia by EA in the present study indicates the adaptogenic and anti-amnesic properties of EA.^[2]

Vishnukranta as antioxidant

Ethanollic extracts and water infusion of *E. alsinoides* were tested for their antioxidant activity in the 2, 2'-azinobis-3-ethyl-benzothiazoline-6-sulfonic acid radical cation decolorization assay. Inhibition of lipid peroxidation by plant infusions was carried out using spontaneous lipid peroxidation of rat brain homogenate, and IC50 values were determined. The results from the ABTS assay showed that the ethanollic extract of *Sida cordifolia* was found to be most potent

(IC50 16.07 µg/ml), followed by *Evolvulus alsinoides* (IC50 33.39 µg/ml) and *Cynodon dactylon* (IC50 78.62 µg/ml). The relative antioxidant capacity for the water infusions was observed in the following order: *E. alsinoides* (IC50 172.25 µg/ml)>*C. dactylon* (IC50 273.64 µg/ml)>*S. cordifolia* (IC50 342.82 µg/ml). The results of water infusions of the plants on lipid peroxidation were as follows: *E. alsinoides* (IC50 89.23 µg/ml)>*S. cordifolia* (IC50 126.78 µg/ml)>*C. dactylon* (IC50 608.31 µg/ml).^[3]

Vishnukranta as anticonvulsant

Phytochemical screening of the extract revealed the presence of secondary metabolites such as saponins, tannins and flavonoids. *Evolvulus alsinoides* extract produced a 50 -100% protection of the mice against pentylenetetrazole (PTZ) induced seizure at doses of 100 400mg/kg. The protection of the extract against PTZ induced convulsion suggested that the extract interacts with GABA-ergic neurotransmission. The PTZ test is assumed to identify anticonvulsant drugs effective against myoclonic and absence seizures. *E. alsinoides* significantly attenuated electrically induced seizure in mice.^[4]

Vishnukranta as anti-anxiety

Male Sprague–Dawley rats, weighing 180–200g were immobilized for 150 min once only in acute stress model, whereas in chronic unpredictable stress model rats were subjected to different types of stressors daily for 7 days. Stress exposure has induced gastric ulceration with increase in adrenal gland weight, plasma creatine kinase, and corticosterone level in acute stress and chronic unpredictable stress. However, plasma glucose was increased only in acute stress. Rats were treated with graded doses of crude ethanollic extract of *E. alsinoides* (100, 200 and 400 mg/kg p.o.) for 3 days and subjected to acute stress on 3 day after 45 min of last dose. In chronic unpredictable stress, *E. alsinoides* at a dose of 200 mg/kg p.o. found effective in acute studies was administered 45 min prior to stress regimen for 7 days. *E. alsinoides* reduced the stress induced perturbations similar to Panax quinquefolium (PQ) (100 mg/kg p.o.), a well known adaptogen. *E. alsinoides* (100 mg/kg) administered

orally for 3 days in adult male Swiss mice, was effective in decreasing scopolamine induced deficit in passive avoidance test. Phenolics and flavanoids, isolated from n-BuOH soluble fraction from the ethanol extract of *E. alsinoides* screened for anti-stress activity in acute stress induced biochemical changes in adult male Sprague–Dawley rats. Stress exposure has resulted in significant increase of plasma glucose, adrenal gland weight, plasma creatine kinase, and corticosterone levels. One constituent displayed most promising antistress effect by normalizing hyperglycemia, plasma corticosterone, creatine kinase and adrenal hypertrophy, while other were also effective in normalizing most of these stress parameters.^[5]

Vishnukranta as nootropic

In oral administration of different doses of ethanolic extracts of medicinal plant i.e., Sco + EEA 250 = 2.49 ± 0.29 , Sco + EEA 500 = 2.67 ± 0.36 , Sco + EEA + ECA 250 = 2.61 ± 0.32 and Sco + EEA + ECA 500 = 2.79 ± 0.16 U/mg of protein respectively against the scopolamine induced group Sco (control) = 5.51 ± 0.35 U/mg of protein extracts shows neuroprotective and nootropic activity with reducing AChE level in the brain homogenate of swiss albino mice.^[6]

Vishnukranta as antihypertensive

Profound antihypertensive activity of *Evolvulus alsinoides* herb was exhibited by Methanolic extract in adrenaline induced hypertensive model.^[7]

The antihypertensive effect of methanolic extract of whole herb was apparent in DOCA salt induced hypertensive mice and the study also revealed that its activity was due to ACE inhibitor mechanism of *Evolvulus alsinoides* herb extract as the extract lowered the blood pressure as similar to enalapril without interfering with pulse rate.^[8]

A clinical study done Qamar Alam Khan stated that the test drug *Sankhaholi (Evolvulus alsinoides Linn.)* has substantial efficacy as an antihypertensive drug as demonstrated in patients of essential hypertension.^[9]

Vishnukranta as Sleep inducer

In Clinical study, Shincymol *et al.* proves that Sleeplessness decreased significantly I ($p < 0.01$) in trial group associated complaints like nightmare, bruxism,

headache, body pain decreased significantly ($p < 0.05$) Change in the sleep quality, sleep time, mood after awakening is also seen.^[10]

Moderate doses (200 mg/kg) of the alcoholic extract of *E. alsinoides* caused drowsiness, stupor and less mobility in albino mice; higher doses showed it to neither toxic nor lethal.^[11]

Vishnukranta as antibacterial

E. alsinoides showed moderate activity in all the solvent extracts except water and the maximum inhibition was in the stem extract of chloroform (1270 mm) and the minimum was recorded in the leaf extract of the petroleum ether (5.670.5 mm).^[12]

Safety - Acute toxicity study

An acute toxicity study was conducted in Govt Ayurveda College, Tiruvananthapuram. The study shows that the drug produces no toxic effect in human doses.^[13]

The oral administration of *E. alsinoides* and i.e., EEA 300, EEA 600, EEA 1200, EEA 2000 mg/kg doses showed no moral toxicity effect in LD50, acute and sub-acute toxicity parameters.^[14]

CONCLUSION

It can be concluded from above mentioned facts that *Evolvulus alsinoides* possess various therapeutic effects and it is being used by eminent Ayurveda physicians since ages in various neurological diseases. The herb is capable of producing various pharmacological effects in various brain disorders such as memory enhancement, insanity, epilepsy, nervous debility due to several bioactive constituents. Various in vivo and in vitro studies have been performed proving its abundant pharmacological actions like anti-amnesic, antioxidant, immunity modulation, antimicrobial, neuro protective and many other mentioned above supports the traditional use of this medicinal herb. It has potential as brain tonic and needs to be explored.

ACKNOWLEDGEMENT

The review has been designed as per Ayurveda classic and sources accessible online. We appreciate the

efforts of every author for establishing the useful information.

REFERENCES

- Sethiya NK. Neuropharmacological evaluation of four traditional herbs used as nervine tonic and commonly available as Shankhpushpi in India. J Ayurveda Integr Med. 2019;10:25-31.
- Yadav MK, et al. Neuroprotective activity of Evolvulus alsinoides & Centella asiatica ethanolic extracts in scopolamine-induced amnesia in Swiss albino mice. Open Access Maced J Med Sci. 2019 Apr 15;7(7):1059-1066.
- Agarwal N, Dey CD. Behavioral and lethal effects of alcoholic extracts of Evolvulus alsinoides in albino mice. J Physio Allied Sci. 1997;31:81.
- Abubakar K. Evaluation of the anticonvulsant effect of the methanol extract of Evolvulus alsinoides in mice. Scholars Acad J Pharm. 2013;2(6):436-441.
- Auddy B, et al. Screening of antioxidant activity of three Indian medicinal plants, traditionally used for the management of neurodegenerative diseases. J Ethnopharmacol. 2003;84:131-138.
- Yadav MK, et al. Neuroprotective activity of Evolvulus alsinoides & Centella asiatica ethanolic extracts in scopolamine-induced amnesia in Swiss albino mice. Open Access Maced J Med Sci. 2019 Apr 15;7(7):1059-1066.
- Joshi UH. Evaluation of antihypertensive activity of Evolvulus alsinoides in adrenaline. Int J Pharm Pharm Sci. 2012;4(4):194-198.
- Joshi UH. Investigation of antihypertensive mechanism of Evolvulus alsinoides. J Pharm Res. 2012;5(7):3613-3617.
- Khan QA, et al. Efficacy of Sankhaholi (Evolvulus alsinoides Linn.) in the management of essential hypertension: A randomized standard control clinical study. Int J Pharm Sci Res. 2018;10(7):3467-3473.
- Shincy Mol VV. Clinical evaluation of Vishnukrantha (Evolvulus alsinoides) with milk in insomnia. Thesis submitted to KUHS. 2013.
- Agarwal N, Dey CD. Behavioral and lethal effects of alcoholic extracts of Evolvulus alsinoides in albino mice. J Physio Allied Sci. 1997;31:81.
- Gobalakrishnan R, et al. Screening of wild plant species for antibacterial activity and phytochemical analysis of Tragia involucrata L. J Pharm Anal. 2013;3(6):460-465.
- Dhanya C. Combined effect of roots of Vishnukrantha (Evolvulus alsinoides) and Sahadevi (Vernonia cinera) in Vishada (Depression). Thesis submitted to the University of Kerala. 2010.
- Yadav MK, et al. In vivo toxicity study of ethanolic extracts of Evolvulus alsinoides & Centella asiatica in Swiss albino mice. Open Access Maced J Med Sci. 2019 Apr 15;7(7):1071-1076.

How to cite this article: Shivangi Wagh, Kalpana Dhuri. Vishnukranta (Evolvulus alsinoides Linn.) : A Clinical Drug Review. J Ayurveda Integr Med Sci 2023;10:149-152.

<http://dx.doi.org/10.21760/jaims.8.10.22>

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