



Case Study

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PUNARNAVA BIDALAKA IN MANAGEMENT OF BLEPHARITIS: A CASE STUDY

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ABSTRACT

Acharya Sushruta has explained 21 vartmaroga (eyelid disorders) in Sushruta Samhita. Blepharitis is an eyelid disorder defined as inflammation of lid margins and is common worldwide. It accounts for 45% of all ophthalmic diseases. Blepharitis has two major types anterior and posterior Blepharitis. Seborrheic Blepharitis is a subtype of anterior Blepharitis. In modern sciences, various antibiotic and steroidal ointments are provided as treatment for Blepharitis, which has its limitations and side effects. Bidalaka is a kriyakalpa (Ayurvedic therapy) advised for treating eyelid disorders due to its direct action and longer contact time with targeted tissues. Punarnava is preferred as a drug of choice for bidalaka in treating inflammation, itching, scaling and redness in Blepharitis with its anti-inflammatory, anti-edematous, anti-tumour, anti-allergic, and anti-bacterial properties. A 27-year-old female patient was diagnosed with Seborrheic blepharitis and is treated with Punarnava bidalaka, where the results prove to be significantly influential based on its clinical assessment.

Keywords: Case report, Blepharitis, Bidalaka, Punarnava, Rotenoids, Anti-inflammatory activity

INTRODUCTION

A total of 21 vartmarogas have been described by Acharya Sushruta, according to dosha adhishtana. ¹ Blepharitis is an eyelid disorder which can be considered a vartmaroga (vartma-eyelid; roga- disorder).

Blepharitis is defined as inflammation of lid margins with complaints of painless oedema, itching, foreign body sensation and discharge in chronic conditions. It has two major types based on its cause and position anterior and posterior blepharitis. Anterior Blepharitis includes Seborrheic and Staphylococcal Blepharitis, and posterior Blepharitis includes acute and chronic Meibomitis. ²

According to Acharya Charaka, in the acute stage of ophthalmic diseases, i.e., amavastha, bidalaka is extremely useful among all other kriyakalpa. ³ Bidalaka is defined as the application of medicinal paste over eyelids excluding lid margins. This gives an appearance like cat eyes (bidalaka), thus called bidalaka. ⁴ It takes care of inflammation, redness, burning sensation and discharge-like symptoms.

Punarnava (*Boerhavia diffusa*), also known as spreading Hogwood, has a potential anti-inflammatory effect with its chemical constituent Boeravinones which are groups of Rotenoid compounds. ⁵ Anti-inflammatory activity of Punarnava is evaluated in this study.

Study rationale: This study aims to find a solution to treating blepharitis for a longer time instead of providing temporary effects and avoiding recurrence with Ayurvedic procedures as an alternative to the repeated steroidal application as symptomatic treatment.

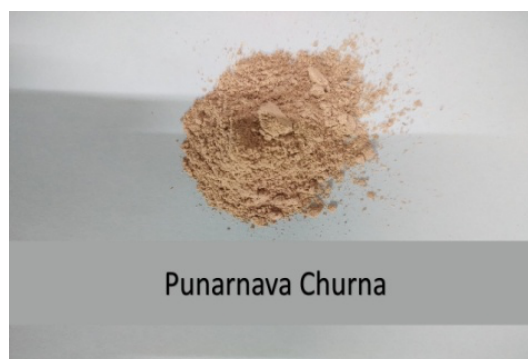
MATERIALS AND METHODS

Case History: A 27-year-old female patient visited the Ophthalmology outpatient department on the 10th of October 2022 with complaints of itching, inflammation and redness of both eyelids for 1-2 months. As per the history given by the patient, she also has complaints of dry scalp and has been taking treatment at private clinics for the same but has had mild relief in her symptoms.

The patient was treated with Punarnava bidalaka once a day in the evenings for 10 days after taking written informed consent at the OPD. Routine follow-up was carried out, and regression in the symptoms was noted.

Materials used for the procedure

Contents: Punarnava churna (Punarnava- *Boerhavia diffusa*) and distilled water at a lukewarm temperature.



Punarnava Churna



Table 1: Observations

Before treatment (Day 0)	After treatment (Day 10)

Table 2: Signs and symptoms of follow up

Signs and symptoms	Day 0	Day 5	Day 10
Inflammation	Present	Mild inflammation	Absent
Itching	Profuse	Absent	Absent
Redness	Present (Mild)	Absent	Absent
Scales over lid margin (Dandruff)	Present	Few scales	No scales

DISCUSSION

In modern sciences, Blepharitis is treated by maintaining lid hygiene and topical instillation of antibiotic and steroid eye drops. Bidalaka acts through per-cutaneous absorption, which involves the passive diffusion of substances through the skin. The diffusional routes to penetrate normal intact skin involve appendageal and epidermal routes. The appendageal route involves transport through sweat glands and hair follicles. Epidermal route may take either transcellular- intra or inter-cellular pathways.⁶

It is proven to be the best kriyakalpa for eyelid disorders as it acts by its absorption through romakupa (hair roots), sweda vahini (sweat glands) and sira mukha (blood capillaries) when applied in a direction against the hair follicles.⁶

In Sushruta Samhita, vartmagata roga has been mentioned, among which, Blepharitis can be compared with vartmabandhaka having similar symptoms like lid inflammation, itching and foreign body sensation.

Punarnava has the active ingredient Boeravinone B of the rotenoids category, which inhibits increased serum aminotransferase activity similar to hydrocortisone, thus showing anti-inflammatory action in treating blepharitis. This also reduces the oxidative stress of the organ. Boeravinone B has the property to minimise the mRNA expression of pro-inflammatory cytokines. The water-insoluble alcoholic extract of different parts of Punarnava has been studied for its anti-inflammatory activity against Carageen-induced oedema in rats and diuretic activity.⁷ The methanol extracts of leaves also have significant in vitro antimicrobial activity.⁸

Punarnava contains many retinoids, phenolic compounds, glycosides and specific acids.⁹ Hentriacontane is a retinoid in Punarnava known for its anti-inflammatory, anti-edematous, and anti-tumour activities. Docosahexaenoic acid in Punarnava shows promising results in treating itching and dryness of the ocular surface. Ursolic acid is a pentacyclic triterpenoid carboxylic acid in Punarnava that has anti-inflammatory, anti-allergic, anti-ulcer and anti-tumour properties. Beta-sitosterol is a bio-active phytosterol (rotenoid) naturally available in the plant membrane of *Boerhavia diffusa* and is known for antioxidant, anti-inflammatory and analgesic activities. Flavonoids are abundant antioxidants found in nature. Quercetin is a type of flavonoid biosynthesized in Punarnava known for anti-inflammatory, anti-

Preparation of Bidalaka: Punarnava paste was prepared by mixing sufficient water in Punarnava churna.

Local examination of eyelids

Local examination of eyelids was done under a slit lamp biomicroscope. Scales over both upper eyelids were noted, along with mild congestion and inflammation of lid margins.

After 10 days, i.e., on 20th Oct. 2022, a marked decrease in the state of inflammation and redness of both eyelids is observed.

The patient notified a noticeable relief in itching on the 4th day of treatment.

Procedure of application

Poorva Karma

- Wash hands with water.
- Clean both the eyes and the surroundings with wet gauze pieces.

Pradhan Karma

- The patient is given a supine position with closed eyes.
- Punarnava paste is applied under aseptic precautions around both eyes and eyelids except lid margins.
- According to Acharya Charaka, the thickness of bidalaka should equal one-third of the thumb's thickness.

Paschat Karma

- Lepa is cleaned out with a gauze piece before it dries up.
- The patient is asked to wash and clean the face with lukewarm water.



OBSERVATIONS AND RESULTS

Signs and symptoms were assessed, along with photographs taken before and after the treatment.

allergic and immune regulatory properties on the ocular surface. Kaempferol (flavonoid) is established for the treatment of neovascularisation of the ocular surface. Thus, *Boerhavia diffusa* acts through the above chemical constituents in treating Blepharitis.

CONCLUSION

The patient is suffering from Seborrheic Blepharitis, which is treated with Punarnava bidalaka and maintenance of lid hygiene. Bidalaka helps retain the medicine over the eyelid for longer and controls absorption through the lids because of its thick consistency. Also, eyelid skin has a thinner stratum corneum, which could be a reason for higher drug penetration through eyelid skin. The worldwide prevalence of seborrheic dermatitis is around 5%, but the prevalence of its variant, dandruff, is closer to 50%. It is a lifelong condition that flares up from time to time. Thus, treating it with bidalaka instead of topical and steroidal instillation for every recurrence appears to be a considerable therapy. The objective of this study was to treat Blepharitis with Ayurvedic management considering minimal side effects. Effective results were achieved through this case study, thus attaining the aim of this case study.

Further scope of the study

A study can be done on a larger population for longer, as this has fewer to no side effects. Recurrence of Blepharitis can be avoided by treating the root cause, which is seborrheic dermatitis of the scalp, thus resulting in treating Blepharitis as well. Further study can be done on treating Blepharitis using other kriyakalpas than bidalaka.

REFERENCES

1. Sharma AR. Vartmagatarogvidnyaniya Adhyaya, Chapter 3, Uttartantra, Shlok no 5-8. In: Sharma AP, editor. Sushruta Samhita of Maharshi Sushruta. Varanasi, New Delhi, Delhi: Chaukhamba Surbharati Prakashan; 2019. p. 21
2. Khurana AK. Disorders of Eyelid. In: Comprehensive Ophthalmology. 7th ed. New Delhi, Delhi: Jaypee Brothers Medical Publishers; 2019. p. 380–1.
3. Shukla AV. Tripathi R. Trimarmiyachikitsa Adhyaya, Adhyaya 26, Shlok no. 231. In: Sharma AP, editor. Charaka Samhita. Delhi, Delhi: Chaukhamba Sanskrit Pratisthan; 2014. p. 645
4. Tripathi B. Uttar khand, Adhyaya 13, Shlok no. 30. In Sharangdhara Samhita. 2012th ed. Varanasi, Uttar Pradesh: Chaukhamba Surbharati Prakashan; p. 280.
5. P.K PK, Priyadharshini A, Muthukumaran S. A review on rotenoids: Purification, characterization and its biological applications. Mini-Reviews in Medicinal Chemistry. 2021;21(13):1734–46.
6. Sivasankari N, B SN, Viswam A, Namboodiri GK. Pindi and Bidalaka - A Review. J Ayurveda Integr Med Sci [Internet]. 2021Nov.7 [cited 2022Nov.27];6(5):210 -214. Available from: <https://www.jaims.in/jaims/article/view/1373>
7. Sudha Madhuri A, Kalasker V. Evaluation of the anti-inflammatory effect of aqueous extract of *Boerhavia diffusa* leaves in rats. International Journal of Research in Health Sciences. 2014 Apr 30;2(2):517–9.
8. Agrawal B, Das S, Pandey A. *Boerhaavia Diffusa* Linn.: A review of its phytochemical and pharmacological profile. Asian Journal of Applied Sciences. 2011;4(7):663–84.
9. Bairwa K, Jachak SM. Anti-inflammatory potential of a lipid-based formulation of a rotenoid-rich fraction prepared from *Boerhavia diffusa*. Pharmaceutical Biology. 2015 Apr 13;53(8):1231–8.

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