

An Exploratory Clinical Trial of Lodhradi Arka Eye Drops in Simple Allergic Conjunctivitis (Vataja Abhishyanda)

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Abstract: *Background: Simple allergic conjunctivitis is an IgE-mediated ocular surface disorder that is common worldwide and often recurs. Conventional treatment relies on antihistamines, mast cell stabilizers, lubricants and corticosteroids, and prolonged use of some of these raises safety concerns. In Ayurveda the condition is comparable to Vataja Abhishyanda.*

Objective: To evaluate the efficacy of Lodhradi Arka eye drops, a sterile aqueous distillate (Arka) of Lodhra bark and Nimba leaf, in simple allergic conjunctivitis.

Methods: In this single-group exploratory clinical study, 60 patients aged 18-50 years were enrolled by purposive sampling and 55 completed follow-up. One drop was instilled in each eye three times daily for 7 days, with assessments on Day 0, Day 8 and Day 15. Itching, watering, foreign body sensation, photophobia and hyperemia were graded 0-3, and before-after scores were compared with the Wilcoxon matched-pairs signed-ranks test.

Results: All five symptoms improved significantly in both eyes ($p < 0.0001$). Mean relief was greatest for hyperemia (86.52% right, 78.29% left) and itching (81.16% right, 77.79% left), followed by watering. Foreign body sensation and photophobia improved less (about 41-48%). Overall relief was 63.15%, and no adverse effects were reported.

Conclusion: Lodhradi Arka eye drops gave appreciable symptomatic relief and were well tolerated. Because the study had no control group, controlled trials are needed to confirm these findings.

Keywords: Lodhradi Arka, Arka Kalpana, Simple allergic conjunctivitis, Vataja Abhishyanda, Lodhra, Nimba, Shalakya Tantra, Ayurvedic eye drops

I. INTRODUCTION

Shalakya Tantra is the branch of Ayurveda that deals with diseases above the clavicle, including those of the eye. Simple allergic conjunctivitis is among the most frequently encountered disorders of the ocular surface. It results from a Type I hypersensitivity reaction to airborne allergens such as dust, pollen, smoke, animal dander and mold spores. Allergen contact triggers IgE-mediated mast cell degranulation and the release of histamine, prostaglandins and leukotrienes. The result is itching, redness, watering, foreign body sensation, burning, mild lid swelling, photophobia and occasional mucoid discharge.¹

The disease is usually benign and self-limiting, but recurrent episodes impair visual comfort, work and study, and quality of life. Its prevalence is reported to reach up to 40% of the general population, with onset typically before the age of 20,² and it frequently coexists with allergic rhinitis and asthma.

Ayurvedic texts describe Abhishyanda as a Sarvagata Netra Roga and, according to Acharya Sushruta, the primary disease (Moola Roga) from which many other eye conditions arise³. It has four types: Vataja, Pittaja, Kaphaja and Raktaja. Vataja Abhishyanda is marked by Toda (pricking pain), Sangharsha (foreign body sensation), Parushyata



(roughness), *Shishirashruta* (watery discharge) and mild congestion.⁴ These features closely match simple allergic conjunctivitis, which provides the rationale for *Ayurvedic* management.

Topical eye drops are the preferred route for ocular surface disease because they act at the site of pathology with minimal systemic exposure. The conventional management of allergic conjunctivitis involves antihistamine, corticosteroids, mast cell stabilizer.⁵ *Arka Kalpana*, and uses of *Arka* in *Netraroga* described in the *Arkaprakasha Samhita*,⁶ yields a clear, light aqueous distillate that suits ophthalmic use. The present study tested a sterile *Arka* formulation made from *Lodhra* (*Symplocos racemosa* Roxb.) and *Nimba* (*Azadirachta indica*).

II. AIM AND OBJECTIVES

Aim: To study the efficacy of *Lodhradi Arka* eye drops in simple allergic conjunctivitis.

The objectives were to review simple allergic conjunctivitis in modern literature and *Abhishyanda* in Ayurvedic literature, to review *Lodhradi Arka* eye drops, and to assess their clinical efficacy.

III. MATERIALS AND METHODS

3.1 Study design and setting

This was an exploratory, single-group clinical study of patients attending the OPD and IPD of the *Shalakya Tantra* department. Sixty patients were recruited by purposive sampling after written informed consent, and 55 completed follow-up. Five were withdrawn. Treatment lasted 7 days, with follow-up on Day 8 and Day 15. The total study duration was 18 months.

3.2 Preparation of *Lodhradi Arka* eye drops⁷

Lodhra bark (*twak*) and fresh *Nimba* leaves (*patra*) were procured from the market and authenticated.

Lodhra Arka: coarsely powdered bark was soaked overnight in four times its quantity of lukewarm distilled water, then distilled on a medium flame in an *Arka Yantra*, with the vapour condensed and collected in sterile glass bottles.

Nimba Arka: leaves were washed, rinsed with distilled water, crushed, soaked in lukewarm distilled water for 2 hours and distilled the same way.

Under aseptic conditions the two *Arkas* were mixed 1:1 and filled into sterile, Preservative added and stored airtight ophthalmic dropper bottles.

3.3 Selection criteria

Inclusion Criteria: At least three of itching, watering, foreign body sensation, photophobia and hyperemia, and age 18–50 years of either sex.

Exclusion Criteria: Congenital eye abnormalities, ophthalmic surgery within the previous month, active ocular infection and monocular vision.

Withdrawal Criteria: Refusal to continue, worsening of symptoms or severe adverse effects.

3.4 Intervention and assessment

One drop was instilled into each eye three times daily for 7 days. Patients were assessed on Day 0, Day 8 and Day 15 using a case record form, a torch and a slit lamp. Each of the five parameters was graded 0 (absent), 1 (mild), 2 (moderate) or 3 (severe) using predefined criteria. As mentioned in below table.

Table No 1. Scoring Pattern of Assessment Parameter⁸

Sr. No	Sign and symptoms	Criteria	Grade
1	Itching	Absent	0
		Mild (Occasional itching, without tendency to scratch or rub the eyes)	1
		Moderate (Frequent itching with tendency to scratch or rub the eyes)	2
		Severe (Continuous itching, frequently rubbing the eyes)	3



2	Waterying of eyes	Absent	0
		Mild (Occasional, no complaints of discomfort)	1
		Moderate (Frequent, felt as discomfort)	2
		Severe (Persistent and frequently accompanied by swabbing of the eye)	3
3	Foreign body sensation	Absent	0
		Mild	1
		Moderate	2
		Severe	3
4	Photophobia	Absent	0
		Mild (Occasionally photophobic)	1
		Moderate (Continuously photophobic)	2
		Severe (Eye responds with blepharospasm on exposure to light)	3
5	Hyperemia	Absent	0
		Mild (Slightly dilated blood vessels, pink in color)	1
		Moderate (More apparent vessel dilatation, vessel color is more intense, involves most of vessel bed)	2
		Severe (Numerous and obvious dilated blood vessels, color deep red)	3

3.5 Statistical analysis

Before-treatment (BT) and after-treatment (AT) scores were compared using the Wilcoxon matched-pairs signed-ranks test, since the data were paired and non-parametric. A p-value below 0.05 was considered significant. The null hypothesis (H_0) was no difference in signs and symptoms before and after treatment, and the alternative (H_1) was significant improvement.

IV. RESULTS

4.1 Demographic profile

Of the 55 patients, 29 (52.73%) were male and 26 (47.27%) female. Most were aged 35–50 years (26; 47.27%), followed by 25–35 years (21; 38.18%) and 18–25 years (8; 14.54%). Students formed the largest occupational group (22; 40%), followed by housewives (12; 21.82%), job holders (11; 20%), business persons (6; 10.91%) and workers (4; 7.27%). Involvement was bilateral in 52 patients (94.55%), right eye only in 2 (3.63%) and left eye only in 1 (1.82%). Under Ayurvedic examination, *Jivha* was *Niram* in 51 (92.73%), *Druk* was *Upanetra* in 33 (60%), and *Akruti* was *Madhyam* in 52 (94.55%).



4.2 Change in symptom scores

Table 1 gives the mean grades before and after treatment. All five symptoms improved significantly in both eyes (Wilcoxon $p < 0.0001$ for every comparison), so H_1 was accepted and H_0 rejected for all ten comparisons.

Table 2. Mean symptom grades before (BT) and after (AT) treatment (n = 55)

Symptom	Right eye (BT → AT)	Left eye (BT → AT)	p-value
Itching	2.509 → 0.473	2.455 → 0.545	< 0.0001
Watering of eyes	2.400 → 0.945	2.455 → 0.800	< 0.0001
Foreign body sensation	2.455 → 1.455	2.291 → 1.200	< 0.0001
Photophobia	2.291 → 1.327	2.364 → 1.291	< 0.0001
Hyperemia	2.364 → 1.291	2.345 → 0.509	< 0.0001

4.3 Percentage relief

Table 3. Percentage relief of symptoms after treatment

Symptom	Right eye	Left eye
Itching	81.16%	77.79%
Watering of eyes	60.61%	67.41%
Foreign body sensation	40.74%	47.62%
Photophobia	42.06%	45.38%
Hyperemia	86.52%	78.29%
Total relief	62.80%	63.51%
Overall relief (both eyes)	63.15%	

Hyperemia showed the greatest relief, followed by itching and watering. Foreign body sensation and photophobia showed moderate relief, although the change was still statistically significant. No adverse effects were reported during treatment or on follow-up.

V. DISCUSSION

The sample was typical of allergic conjunctivitis. Younger and middle-aged adults, students and bilateral presentation predominated, consistent with the strong role of environmental exposure and with the reported onset in early life.

The improvement in itching, watering and hyperemia is plausibly explained by the properties of the two ingredients. Classical sources describe *Lodhra* as Kashaya in taste and cooling (*Sheeta Virya*), with *Shothahara* (anti-inflammatory), *Ropana* (healing) and *Raktastambhaka* (haemostatic) actions.⁹ *Nimba* is *Tikta-Kashaya*, cooling, anti-pruritic and *Chakshushya* (beneficial to the eye).¹¹ Together they are proposed to reduce conjunctival inflammation, vascular congestion and edema. Watering is largely reflex tearing from surface irritation, so it should fall as irritation



settles. In Ayurvedic terms, *Vataja Abhishyanda* is explained by *Vata* vitiation, *Srotovaigunya* in the ocular channels and *Rukshata* (dryness) with *Khara Guna*. The cooling, moistening and soothing *Arka* is thought to counter this. Foreign body sensation and photophobia improved less (about 41–48%). The authors suggest that the aqueous base may not stabilise the tear film well, and that a lipid base could perform better for these symptoms. The fact that the drops helped redness and itching most closely matches the symptoms most directly tied to mast-cell-driven inflammation of the conjunctiva.

VI. CONCLUSION

Lodhradi Arka eye drops, one drop three times daily for 7 days, produced significant improvement in itching, watering, foreign body sensation, photophobia and hyperemia in simple allergic conjunctivitis, with an overall relief of 63.15% and no reported adverse effects. The formulation may be considered a safe, effective and economical option, with the strongest effect on hyperemia and itching, moderate effect on watering and photophobia.

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