



**AYURVEDIC MEDICATED EYE DROPS (*BILVADI ASCHYOTANA*) –
A REVIEW**

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ABSTRACT

Among the four methods (eye drops, eye ointment, gel, ocuserts) of delivering ocular pharmacotherapeutics, Eye Drops is the most commonly employed mode of administration. Eye Drops is the simplest and most convenient method of topical application, especially for day time use. Eye drops may be in the form of aqueous solutions (drugs totally dissolved) or aqueous suspensions (drug is present as small particles kept suspended in the aqueous medium) or oily solutions. Application in the form of eye drops makes the drug available for immediate action but it is quickly diluted by tear within about a minute. *Shalakya Tantra* is one among the branches of *Ayurveda* which deals with ailments above the neck. *Aschyotana* is one of the unique and local therapeutic procedure for the eye disorders for which ancient *Ayurveda Acharyas* have described in detail the advantages and procedure. The present lifestyle and occupational hazards helps us in realizing the role of ancient *Ayurvedic* therapies and most importantly in protection and preservation of the vision through continuous research.

Keywords *Ayurveda, Aschyotana, Eye drops, Eye, Shalakya tantra*

INTRODUCTION: Eye drops are the saline-containing drops used as an ocular route to administer. Depending on the condition being treated, they may contain steroids, antihistamines, sympathomimetics, beta receptor blockers, parasympathomimetics, parasympatholytics, prostaglandins, nonsteroidal anti-inflammatory drugs (NSAIDs), antibiotics, antifungal,

or topical anesthetics. Eye drops sometimes do not have medications in them and are only lubricating and tear-replacing solutions. [1]Topical eye medications are governed by the same controls as medications administered by other routes. [2] Health care practitioners should be aware of the implications of using eye medications for the preservation of sight during the healing process.

The instillation of eye drops and ointment is an important skill for many health care practitioners. All ophthalmic medications may cause side effects that vary in intensity and severity. Allergic reactions are most commonly reported by patients in practice. [3] Instilling eye drops may have various effects on the ocular surface. Eye drops typically contain an active ingredient in a vehicle and an antiseptic. [4] According to the literature, topical therapy has been reported as effective in treating the conjunctiva, cornea, anterior chamber, and iris. [5] This means administration implies that the eye drops should be on the surface of the eye only for a short time. [6]

The eyes are usually treated by topical therapy, but sometimes systemic therapy is required (eg, posterior segment therapy). The blood-ocular barriers can restrain absorption of less lipophilic drugs; however, any inflammation caused will increase blood flow, which will initially allow greater drug concentrations to reach the site. [7] Further drug penetration is limited because the eye starts to heal and these barriers become more effective. Increasing the dose in this situation – in order to obtain sufficiently high therapeutic drug concentrations in the eye could result in high concentrations in the blood, which could cause significant side effects. [8]

Improper administration of eye drops is often of a variety of unintentional non-compliance and underreported [9]. Unawareness is not only from patients but also from eye care providers especially in busy clinical practices [10]. Approximately 80% of patients instill their own eye drops by themselves and mostly, no delivery aids are adopted [11]. One of the studies indicates that only 19.7% patients managed to successfully instill eye drops into conjunctiva sac on first attempt. [12]

In ophthalmology, both local (eye drops, as well as subconjunctival and intravitreal applications) and systemic treatment approaches are used. Before the administration of eye drops, a complete medical checkup, including details of allergies and systemic diseases, should be carried out to detect probable risk factors (eg, bronchial asthma). [13]

Kriyakalpas or topical ocular therapeutics is the uniqueness of *Ayurvedic* ophthalmology which includes *parisheka/seka*, *aschyotana*, and *tarpana*. [14]

Aschyotana is considered as the first line of treatment for all the *netra rogas*. In this procedure, the drug is topically delivered into cul-de-sac to achieve greater availability and local quicker action. [15]

In *Ayurveda*, for this procedure, *Acharyas* has described the use of *snigdha* and *madhura rasatmaka dravya* in *vatapitta janya vyadhi*. [16] By this, instilled medicine will penetrate into the *akshikosha srotas*, *shira srotas*, *ghrana srotas*, and *mukha srotas* of the *urdhvanga bhaga* and remove the mala present there. [17] Allergic conjunctivitis is the most common type of eye allergy. It has a prevalence rate of 5-22% in general population. In *Ayurveda* probably it can be correlated with *Vataja Abhishyanda* which is one among the *Sarvagata Netra Rogas*. [18]

The drug having *Vata Shamaka* property might be helpful for treating the disease *Vataja Abhishyanda* (Simple Allergic Conjunctivitis). This study was carried out to evaluate the effects of *Bilvadi Aschyotana* that is mentioned in the management of *Vataja abhishyanda* by Chakradutta. Ingredients of the *Bilvadi Aschyotana* are *Bilva*, *Agnimantha*, *Shyonaka (Aralu)*, *Patala*, *Gambhari*,

Eranda, Brihati, Tarkari (Agnimantha) and Madhu Shigru. Even Acharya Vagbhata has opined about Bilvadi

Ashchyotana in the management of Vataja Abhishyanda [19]

Table 1: Ingredients of Bilvadi Aschysotana Drops

Name	Rasa	Guna	Veerya	Vipaka	Dosha-karma
Bilva	Kshaya, tikta	Laghu, ruksha	Ushna	Katu	Shothahara, vedanasthapana
Shyonak	Madhura, tikta, kshaya	Laghu, ruksha	Ushna	Katu	Shothahara, vednasthapana
Patala	Tikta, kshaya	Laghu, ruksha	Ushna	Katu	Shothahara, vednasthapana, doshopashamana
Agnimantha	Tikta, katu, kshaya, Madhura	Laghu, Ruksha	Ushna	Katu	Shothahara, vednasthapana
Gambhari	Tikta, kshaya, madhura	Guru	Ushna	Katu	Shothahara, vednasthapana
Eranda	Madhura	Snigdha, tikshna, sukshma	Ushna	Madhura	Shothahara, vednasthapana
Brihati	Katu, tikta	Laghu, ruksha, tikshna	Ushna	Katu	Vatashamaka, Vranaropana
Shobhanjan	Katu, tikta	Laghu, ruksha, tikshna	Ushna	Katu	Shothahara, vednasthapana, shulaprashmana, chakshushya

Preparation of Eye Drops

Eye Drops formulation is most common form of local drug use in ophthalmic practice because standard dose of the eye drops is maintained and patients can easily carry it with them and instill it whenever required by them. As facility for the sterile packing of the Eye Drops was not available at Institute pharmacy, preparation of the eye drops was done at Sudanshu Herbs Mehatpur Distt. Una H.P., under all aseptic conditions.

Procedure

300gm coarse powder of all the contents were taken in a big pan and 4.8 liters of water was added. Then the pan was kept

on the furnace and heated constantly at moderate heat. Stirring was continued throughout the process with a view to prevent sticking of the powder to the bottom of the pan. When the decoction quantity was reduced to 1.2 liters it was filtered into another pan. The residue was discarded and then the filtered material was re-filtered by 2.0 microns glass filter followed by 0.2 microns nylon filter and Whatman's double filter paper. Flow Filtered solution was filled in sterile glass bottles under Laminar Air in aseptic conditions. Keeping all aseptic measures in view sterilization was done with autoclave.

In this way the medicine was totally preservative and made pyrogen free.

Method of Administration of Bilvadi Eye Drops

Hands should be washed well before use and the outer cap needs to be removed. Then the head should be tilted back by pulling the lower lid of the eye down to form a Pocket. Holding the container between the thumb and middle finger of the other hand; the container should be turned upside down near to the eye, without touching the eye. Enough pressure should be applied on the top of the container to release drop and put one drop each in both eyes. Then the eyes should be closed for one to two minutes. If the drop is missed, one more drop should be administered and then the outer cap should be replaced on the container without touching the applicator tip with the fingers.

Storage of Bilvadi Eye Drops

Drops should be kept out of reach from children and stored in a cool, dry place, away from direct light and heat.

Advantages of the eye drops

Eye drops should be used exactly as directed by doctor. Doses should be followed regularly and if missed in between, should apply the missed dose as soon as possible. It is important to continue using eye drops for a further instructed time. If symptoms do not improve within a few days or if they become worse, the concerned doctor should be consulted. Hygiene and cleanliness should be given due importance. Precautions should be taken to avoid the dust and smoke to come in contact with ocular surface. As infection causes the eyes to become more sensitive to sunlight, dark glasses should be worn to prevent this. The medicine should be used within the month from packing.

DISCUSSION

One of the most simple and therapeutic modes of therapy are lubricating eye drops intended to relieve the symptoms of dry eyes due to decreased blink rates. A study indicates that higher viscosity eye drops may be more beneficial than balanced salt solutions. Although the higher viscosity drops did not vary blink rates, they normalized the inter blink interval and relieved ocular discomfort more efficiently than balanced salt solutions following computer use. Unfortunately, these more viscous eye drops also cause a decrease in overall visual acuity. Common artificial tears are carboxy methyl cellulose and hydroxyl propyl cellulose. They contain water, salts and polymers but lack the proteins found in natural tears. Possible adverse effects of carboxymethyl cellulose and other similar lubricants include eye pain, irritation, continued redness, or vision changes. Use should be discontinued if any of them occur. Those of hydroxypropyl cellulose include hyperemia, photophobia and stickiness of eyelashes, discomfort, and irritation. Long term use of preservatives present in some lubricating drops tears may harm the eye. [16]

This study focused on the effectiveness of the *Ayurvedic* method of treatment known as *aschyotana* or the medicated eye drops for the eye disorders that can be self applied or taken help at the *shalakya* opds at *Ayurvedic* hospitals under the guidance of a *Shalakya* expert. This is affordable, easy to administer and applicable for all ages.

CONCLUSION:

The eyes are our body's most highly developed sensory organs. In fact, a far larger part of the brain is dedicated to vision than to hearing, taste, touch, or smell combined. We tend to take eyesight for granted; yet when vision problems develop, most of us will do

everything in our power to restore our eyesight back to normal. Therapies and medications opined by *Ayurveda Acharyas* and practiced since centuries help not only for the management of eye disorders but also play a vital role in the preservation of the eye sight. *Aschyotana* is one such therapeutic procedure which can be adopted in the management of conjunctivitis, specially allergic conjunctivitis and also for its prevention. Bilvadi aschyotana (eye drops) opined by Ayurveda acharyas shows its effectiveness in vataja abhishyanda.

REFERENCES

1. Wikipedia contributors. (2020, April 30). Eye drop. In *Wikipedia, The Free Encyclopedia*.
2. Marsden J, Shaw M. correct administration of topical eye treatment. *Nursing Standard*; 2003. 9: 17, 42-44 .
3. Watkinson, Sue & Seewoodhary, Ramesh. (2008). Administering eye medications. *Nursing standard (Royal College of Nursing (Great Britain): 1987)*. 22. 42-8. 10.7748/ns2008.01.22.18.42.c6310.
4. Honda, R., Toshida, H., Suto, C., Fujimaki, T., Kimura, T., Ohta, T., & Murakami, A. (2011). Effect of long-term treatment with eyedrops for glaucoma on conjunctival bacterial flora. *Infection and drug resistance, 4*, 191–196. <https://doi.org/10.2147/IDR.S24250>
5. Järvinen K, Järvinen T, Urtti A. Ocular absorption following topical delivery. *Adv Drug Deliv Rev.* 1995;16(1):3–19.
6. Scruggs J, Wallace T, Hanna C. Route of absorption of drug and ointment after application to the eye. *Ann Ophthalmol.* 1978;10(3):267–271.
7. Hornof M, Toropainen E, Urtti A. Cell culture models of the ocular barriers. *Eur J Pharm Biopharm.* 2005;60(2):207–225.
8. Urtti A, Salminen L. Minimizing systemic absorption of topically administered ophthalmic drugs. *Surv Ophthalmol.* 1993;37(6):435–456.
9. Gupta R., Patil B., Shah B. M., Bali S. J., Mishra S. K., Dada T. Evaluating eye drop instillation technique in glaucoma patients. *Journal of Glaucoma.* 2012;21(3):189–192. doi: 10.1097/IJG.0b013e31820bd2e1.
10. Tsai J. C., McClure C. A., Ramos S. E., Schlundt D. G., Pichert J. W. Compliance barriers in glaucoma: a systematic classification. *Journal of Glaucoma.* 2003;12(5):393–398. doi: 10.1097/00061198-200310000-00001.
11. Kass M. A., Hodapp E., Gordon M., Kolker A. E., Goldberg I. Part I. Patient administration of eyedrops: interview. *Annals of Ophthalmology.* 1982;14(8):775–779.
12. Gao, X., Yang, Q., Huang, W., Chen, T., Zuo, C., Li, X., Gao, W., & Xiao, H. (2018). Evaluating Eye Drop Instillation Technique and Its Determinants in Glaucoma Patients. *Journal of ophthalmology, 2018*, 1376020.
13. Farkouh, A., Frigo, P., & Czejka, M. (2016). Systemic side effects of eye drops: a pharmacokinetic perspective. *Clinical ophthalmology (Auckland, N.Z.), 10*, 2433–2441.
14. Shashi Prakash Gupta, DB Vaghela A clinical study on *Triphaladi* compound and *Shunthyadi* eye drop in the management of computer vision syndrome. 2018 ;11 (1): 46-50
15. Swati.S.Suvarna, Rathi.S, S.M.Pasha. Shatavari Ghrita Aschyotana in Computer Vision Syndrome A Pilot Study. *International Journal of Ayurveda and Pharma Research.* 2018;6(8):7-14.
16. Mulik et al, Conceptual study of Goghrita Eye drops (Aschyotana) in Computer Vision Syndrome. *Asian Journal of*

Multidisciplinary Studies, 1(3) October, 2013

17. Udani, J., Vaghela, D. B., Rajagopala, M., & Matalia, P. D. (2012). A comparative study of Bilvadi Yoga Ashchyotana and eye drops in Vataja Abhishyanda (Simple Allergic Conjunctivitis). *Ayu*, 33(1), 97–101.

18. Vipin: A Pilot Study On The Effect of Bilvadi Ashchyotana In The Manage-

ment of Vataja Abhishyanda W.S.R. To Simple Allergic Conjunctivitis International Ayurvedic medical Journal {online} 2016

19. Astanga Hridaya of Vagbhata: Edited with the Vidyotini hindi Commentary by Kaviraj Atridev Gupta. Uttara Tantra16/11

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