

A review study of bidalaka: in eye disorders and it's importance

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Abstract

Shalakyatantra is a branch of *Ayurveda* which deals with diseases and treatment of organs situated above clavicle.[1] As it deals with sense organs it is highly specialized and important. Eye is unarguably most important of the five sense organs. One should make all sincere efforts to protect eyes and treat eye diseases. Sushruta has mentioned 76 eye diseases out of which treatable diseases are treated with systemic as well as local treatment. *Kriyakalpa* is one of the local treatments.

Aacharyas have explained various therapeutic procedures which are formulated with different drugs and different routes of drug administration according to disease. Being local therapeutic procedure, fast action and penetration of drugs through ocular tissue raises importance of *Kriyakalpa* in ocular diseases. *Bidalaka* is one of the important *Kriyakalpa* explained in *Ayurvedic* texts, which is having a vivid utility in many *Netra Rogas*. *Bidalaka* therapy gives tremendous results in acute stage of diseases. According to *Charaka*, *Bidalaka* gives great results in acute eye disease.[2]

Keywords: *Kriyakalpa*; *Bidalaka*; *Lepa*; Eye Diseases; *Ayurvedic* Treatment

1. Introduction

Ayurveda is a science of human well-being in physical, social as well as mental aspect. *Kriyakalpa* has gained tremendous importance to cure the disease as well as maintain the vision. As far as sense organs are concerned Eye stays at the top due to its irreplaceable function. Hence to treat eye disease and preserve the vision, one should always work on priority. *Kriyakalpa* is a combined word of two distinct concepts which are *Kriya* which means therapeutic procedure and *Kalpa* which means medicinal formulation.

The action of *Kriyakalpa* can be correlated with *Panchkarma*. *Panchkarma* is used for *sharir parimarjan* that is detoxification of body and settle *tridosha*. *Kriyakalpa* acts similarly locally. It settles the raised level of *doshas* and improves health of eyes. Before *kriyakalpa* whole body *shodhana* with the help of *Panchkarma* is important, that enhances the action and absorption of the Drug. [2]

There are 7 numbers of *Kriyakalpas* in *Netra Vigyan* explained by different *Acharya's*. Sushruta mentioned 5 types of *kriyakalpa*. [3] Sharangdhara added two *kriyakalpa* into it named *Bidalaka* and *Pindi*. [4]

According to *Aacharya Sushruta* - *Tarpan*, *Putpaka*, *Ashchyotana*, *seka/parisheka*, *Anjan*

According to *Aacharya Sharangdhar*- 5+ *Bidalaka* and *Pindi*

Bidalaka is nothing but the modified form of '*Lepa Kalpana*' and firstly introduced by '*Sharangadhara* [4].

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Aims and objectives

- To provide detailed description of *Bidalaka* given in *Ayurvedic Samhitas*
- To mention the drugs that can be applied in the form of *Bidalaka* in various ocular disorders.
- To understand the mode of action of *Bidalaka Karma*.

2. Material and methods

Various literatures about *Kriyakalpa* from various *Samhitas* and published material.

2.1. Bidalaka

2.1.1. Paribhasha [5]

‘Bidalako bahirlepo netre pakshnavivartite ‘

Bidal means cat's eye. In this *kriyakalpa* paste of medicine is applied over eyelids and periorbital area except eyelashes. Eye looks like cat's eye hence called *Bidalaka*.

2.1.2. Matra [6]

‘Tasya matra paridnyeya mukhlepa vidhanvat’

- *Matra of Bidalaka* is same as *mukhlepa* (face pack) as
 - *Kanishtha matra- 1/4 angula*
 - *Madhyam matra- 1/3 angula*
 - *Uttam matra- 1/2 angula*

2.1.3. According to A.F.I.

(part 1, second revised English edition, pg. no-483)

- *1 Angula- 1.95cm i.e. 19.5 mm. Average measurement of 1 angula*
- *So, the lowest thickness of Bidalaka was taken as equal to 5.0mm*
- *Likewise medium thickness 6.5mm and maximum thickness 10 mm.*

2.1.4. Dharan kala

- It should be removed before it gets dried.
- If dried, it loses its property and spoils skin. [7]

2.2. Indications [2]

‘Utpannamatre tarune netraroge Bidalaka /

Karyo dahopdehashrushofragnivaran || ‘

- Acute stage of eye diseases
- Burning
- Discharge
- Watering
- Swelling
- Redness

2.2.1. Contraindication

At night and

after applying *Bidalaka* – Speaking, laughing, crying, day sleeping,

exposure to sunlight - rain - wind is contraindicated.

2.3. Procedure

2.3.1. Purvakarma [8]

- Before all *kriyakalpas*, whole body detoxification should be done (*Sarvadaihi shodhan - Vamanadi*) The medicinal paste should be neither too thick nor too thin. It should be semisolid.
- For application - Patient should be comfortably lying down in supine position or in sitting position.
- *Mrudu Snehan – Swedan* should be done as it relaxes the patient and increases local vasodilatation for better drug absorption.

2.3.2. Pradhan karma [5]

- The paste used for Bidalaka should be lukewarm. (Sukoshna)
- Patient is asked to close the eyes.
- Then the paste is applied over closed eye in circular manner avoiding eyelashes
- Caution should be taken that the paste should not get into the eyes.
- Patient is asked to close the eyes throughout the procedure.
- The thickness of Bidalaka should be according to the stage severity of disease and aggravation of Doshas.

2.3.3. Paschatkarma

- As soon as the Bidalaka starts to get dry it should be wiped out with cotton and luke warm water.
- Wiping should be done before lepa gets dried.
- The Lepa should be removed gently and eyes should be cleaned properly with the help of a cleaned cotton swab dipped in luke warm water.
- The Patient is advised to take some rest and use goggles for some time.
- The patient is asked to avoid exposure to dust, fire, sunlight and day sleep, excessive talk, sorrow and anger.

Table 1 Various kriyakalpa yoga according to various Acharya

Sr. no.	References	content	indication
1		<i>Yasti, Gairika, Saindhava, Darvi and tarkshya with water</i>	<i>Sarvanetra roga, Adhimantha, Anyatovata.</i>
2	<i>Sharangadhar Samhita [9,17]</i>	<i>Rasanjan, Pathya leaves of Vishva, kumari, vacha, haridra, nimba</i>	-
3.		<i>Madhuyashti, geru, saindhanamak, daruharidra, rasanjan with water</i>	<i>sarvanetraroga</i>
4.		<i>Rasanjanlepa, haritaki-sunthi-tejpan lepa, vacha-haridra-nimba lepa, sunthi-geru lepa,</i>	<i>sarvanetraroga</i>
3		<i>Burnt ashes of Saindhava and Lodhra, Madhuchista</i>	<i>Sadhya netra ruja</i>
4		<i>Pulp of fruits of Nimba is kept in an iron vessel and rubbed with an iron mortar till the paste becomes thick</i>	<i>Netra badha</i>
5		<i>Marich is made into paste with juice of kesharajal (BHRIGRAJA)</i>	<i>Arma</i>
6		<i>Manshila, Ela, Nata, Saindhava and Madhu</i>	<i>Anjannamika</i>
7		<i>Saindhavadi Lepa- Saindhav, Daruharidra, Gairik, pathya, Rasanjan</i>	<i>Akshiroga</i>
8		<i>Lodhra Haritaki Bidalaka-Ghrit Bhrishta Shavarak Lodhra, Ghrit Bhrishta Haritaki.</i>	<i>Abhishyanda</i>
9	<i>Bhaishajya Ratnavali [11,18,]</i>	<i>Gairikadi Lepa-Giri mrutta, Chandan, nagar, kharika, vacha</i>	

10		<i>Bhumyamalakadi Lepa- Bhumyamalaki,Saindhav,Ghruhavari,Tamra</i>	
11		<i>Shunthi,Nimba Dala,Saindhav</i>	<i>Kaphaj netra roga,Shoth,kandu</i>
12		<i>Durvadi Lepa- Durva,Yava,Gairika,Sariva with Ghrit</i>	<i>Ruja Roga</i>
13		<i>Payasyadi Lepa- Payasya,Sariva patra,Manjishtha,Madhuk with Ajakshir</i>	
14		<i>Mariachi Lepa- Marich,Bhibhitak with Haridra swaras</i>	<i>Arma</i>
15		<i>Chandan,Ananta, Manjishtha</i>	<i>Pittaj Abhishanda, Pittaj Netra roga (ch)</i>
16	<i>Yogratnakar [12]</i>	<i>Padmak,Yashti,Jatamanshi,Kaliyaka</i>	<i>Pittaj Abhishanda, Pittaj Netra roga (ch)</i>
17		<i>Chandan,Madhuk ,Lodhra,Jatipushpa,Gairik</i>	<i>Pittaj Abhishanda, Daha,Toda</i>
18		<i>Rasanjan,Pathya,Tender leave of Vishva</i>	<i>kaphaj Abhishanda,</i>
19		<i>Vacha,haridra,Vishva,Nagar,Gairik</i>	<i>Kaphaj Abhishanda,</i>
20	<i>Charak Samhita [10]</i>	<i>Nagar,Saindhav,Ghrit</i>	<i>Vataj Netra roga,</i>
21		<i>Madhu,Saindhav,gairik</i>	<i>Vataj Netra roga</i>
22		<i>Ghrit bhrishta haritaki</i>	<i>Netra Ruja</i>
23		<i>Gairik,Saindhav,Musta,Gorochana</i>	<i>Kaphaj Netra Roga</i>
24		<i>Priyangu,Manshila with Madhu</i>	<i>Kaphaj Netra Roga</i>
25	<i>Astang Sangraha [13]</i>	<i>Saindhav,Shuthi,Devdaru ,Punarnava,Haritaki</i>	<i>Shopha</i>
26		<i>Chandan,Marich,Patra,Ela, Swarna Gairik,Tagar,Rasanjan,Lavan</i>	<i>Abhishyanda</i>
27		<i>Darvi,Tuttha,,Haritaki</i>	<i>Vata-pittaj Abhishyanda</i>
28		<i>Haritaki,Nagar,Rasanjan,Swarna Gairik</i>	<i>Kaphaj Abhishyanda</i>
29		<i>Kushta,Misi,Pippali,Chandan,Utpala</i>	<i>Vedana</i>
30		<i>Musta,Agaru,Chandan with Madhu</i>	<i>Shool,Daha,</i>

2.4. Factors affecting the Absorption

Various biological, physiochemical factors can affect the absorption rate.

2.4.1. Biological factors

- Skin Condition: Diseased skin affects penetration as the intact skin is barrier through various layers of skins are not equally permeable.
- Skin age: Skin age inversely proportional to the absorption.
- Blood Supply: Mrudu Snehan Swedan favors the absorption as it causes local vasodilatation and results in increased circulation, helps in absorption.

2.4.2. Physiochemical factors

- Skin hydration- as it increases skin permeability favors absorption.
- Temperature- Permeability increase ten times with the increase in temperature.
- Drug concentration - By Absorption is directly proportional to the concentration.
- Tissue contacts time - is directly proportional to absorption rate in response.

3. Result

As the *Bidalaka* is external application of medicated paste / Lepa. Over the eyelids periorbital area mode of action follows the transdermal pathway for absorption. Various factors affecting the absorption are discussed above. Also, according to *Ayurveda* these drugs are acts according to the *Ras - Veerya - Vipaka- Guna- Prabhav* of the drug used to prepare the paste. o, the drugs taken systemically undergo metabolization where the local administration of medicines skips these roots and directly acts on the targeted organ.

4. Discussion

Local therapeutics act faster and are more effective than systemic medicines. *Bidalaka* mainly acts in active stage of disease. As *Bidalaka* is applied in the form of paste over skin of periorbital area, skin permeability of drug should be taken into mind.

4.1. Temperature and permeability [14]

The skin permeability can be changed by changing temperature. With increase in temperature and vascularity, absorption of drug increases. In *Bidalaka*, prior massage and *mrudu swedana* increases temperature and vascularization of the skin area. Medicinal paste for *Bidalaka* should be *sukhoshna* i.e. warm which gives soothing effect and enhances drug permeability.

4.2. Skin thickness and permeability [15]

Absorption of drug has regional variation at different body sites. Skin thickness takes a large part in skin permeability. Periorbital skin and skin over lids are thinnest of all over body. Hence paste applied over this skin gets absorbed more rapidly than any other part of body.

4.3. Water and lipid permeability [16]

Paste for the procedure is made either water or *ghrita* according to *dravya* solubility. Water and lipid permeability of skin enhances the drug permeability more. The epidermis layer of skin is selectively permeable for lipid and water content. Water soluble contents are absorbed through skin by a passive diffusion process. Drugs absorbed through physiological membranes finally enter the capillaries and blood stream and acts on target tissue.

4.4. Tissue contacts time

The *Bidalaka* is kept on skin for about 15-20 minutes depending on weather. It is wiped out before it gets dried. While in *Ashchyotana*, *seka* or other drop formulation drug tissue contact time is comparatively less. This explains the use of *Bidalaka* in acute stage of disease to lower symptoms like burning, swelling, redness. The drug mixed in *Bidalaka* posses their property and acts with their fundamentals for e.g. *yashtyadi lepa Bidalaka* predominantly acts on *rakta and pitta* its action is *pitta and daha shamaka*.

4.5. Bidalaka for cosmetology

As *Bidalaka* is one of the types of *Lepa Kalpana* it can nourish the skin and also increase its elasticity thus preventing ageing and wrinkling below the eyes. It can also be used in eye skin tag occurring with the increasing age.

4.6. According to Ayurveda

As it is said *Srotomaya Purusha* the whole body consist of *Sukshma Srotasa* or whole body is porous. Through these pores or channels the minute particles of drug applied in form of *Bidalaka* penetrates into the skin. At this stage the *Upshoshana Guna of Vata Dosha* contributes in the penetration and absorption of the drug. *Bhrajaka Pitta* present in skin is responsible for metabolism of the drug applied over the skin. *Bidalaka* when mixed with *Ghrita* can reach into the deeper tissues of the eye as *Ghrita* is both hydrophilic and lipophilic in nature. *Bidalaka* mixed with *Madhu* can also reaches the deeper tissue because of its *Sukshma Guna* and its *Yogvahi* property.

5. Conclusion

Drugs taken systemically goes under digestion while drugs applied locally directly gets absorbed through blood stream and acts on target tissue. This makes *kriyakalpa* selective line of treatment over systemic one. Oral drugs need to face various barriers like blood aqueous barrier, blood-vitreous barrier, blood-retinal barrier etc while local therapy provides higher concentration in less time. In *kriyakalpa*, potency of drugs can be increased by altering temperature, concentration, tissue contact time and way of application while in systemic drug delivery one should treat according to *Pachaka* pitta and *jatharagni*. *Bidalaka* is useful to control acute symptoms and instant relief. It is user friendly and economic. Patient can carry on the treatment at home if once demonstrated. The side effects are comparatively less or negligible as there is no actual contact with ocular structures like conjunctiva or cornea. Thus, *Bidalaka* treatment can be used widely in various eye diseases. It gives excellent result in acute symptoms seen in *Abhishyanda vyadhi*

Compliance with ethical standards

Disclosure of conflict of interest

No conflict-of-interest to be disclosed.

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