



Literature Review on *Kalikkam* (Ophthalmic Application)- Siddha System of Medicine

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ABSTRACT:

Through the development of science and technology, more non-invasive methods of treatment are made available to the general public. The Siddha system of medicine also has non-invasive methods that are less known to the public and even less practiced in the Siddha community. According to Siddha literature, eye diseases are classified into 96 types. Various forms of medicine are prescribed for treating eye diseases. *Kalikkam* (medicated eye drops) is one of the external forms of medicine that is applied to the eyes. This review documents the various preparations of *kalikkam*, the efficacy of *kalikkam*, methods of application, dosage form, and effect of *kalikkam* in treating delirium, sinusitis, fever, jaundice, and poisonous conditions. *Copper sulphate* (*Thurusu*), *Piper nigrum* (*Milagu*), *Tamarindus indicus* (*Pazham puli*), *Terminalia chebula* (*Kadukai*), and calamine (*Thutham*) were commonly used ingredients in *kalikkam* preparations. Most (40%) of the preparations were smoothed out with breast milk. This study highlights the value of Siddha medicines in the management of various emergency situations, and it will serve as a valuable reference for ophthalmic practises and clinical studies in the future.

1. Introduction

The Siddha system of medicine has a distinctive approach to taking care of specific ailments and also builds up the immune system of the person being treated against all diseases. In Siddha, medicines are classified into *Agamarunthugal* (internal medicines) and *Puramarunthugal* (external medicines). External medicines or external therapies are as important as internal medicines in the management of health and disease. In several instances, only the procedures without any drugs are sufficient, and these procedures are already systematized. Siddhars have described the characteristic features of a healthy eye and methods of maintaining them. They have also suggested ways to treat the eye diseases. Eye care and treatment have been given marked

importance in the Siddha system of medicine. As per the Siddha text, eye diseases are classified into 96 types.

1. Diseases of Cornea (*Karuvizhi*)- 45
2. Diseases of Sclera (*velvizhi*) - 20
3. Diseases of Eyelid (*Imai*) - 16
4. Diseases of lateral canthus (*Kadaikan*)-15

Siddhars also provide a solution to treating eye diseases that includes surgical and non-surgical procedures. *Kalikkam* (eye drops) and *anjanam* (Collyrium) fall under the category of non-surgical procedures. Out of 32 external forms, *Kalikkam* is one of the external forms of medicine that is applied in eyes for curing diseases. It is



defined as a method of ophthalmic liquid application (eye drops). Ophthalmic drops are prepared either as fresh juice or a pouch of dry powders soaked in breast milk (or) honey, and then the liquid juice is extracted, which is then instilled into the eyes. Eye drops also obtained by dissolving medicated pills in honey, breast milk, plant juice. *We reviewed the ophthalmic formulations found in several Siddha literatures in order to apply them to clinical practice and to shed light on various research directions.*

2. Literature evidence on Kalikkam

Sages *Agasthiyar* and *Nagamuni* have described ninety-six types of eye diseases and have also suggested both preventive and curative ophthalmic applications.



Preventive aspect:

Prophylactic eye drops are to be used every third day. The preventive ophthalmic application improves

- Vision and sharpens the sense organs
- To control infection in and around the eyes
- To remove blockage in the lacrimal glands
- To avoid conjunctivitis
- To prevent watering and dryness

Curative aspect:

Eye drops (*kalikkam*) have been the main route of administration in unconscious patients and in systemic diseases like jaundice due to the instant absorption of medication through the mucous membrane, which is easily accepted by the brain.

Ophthalmic applications are not recommended on

- Rainy days, after an oil bath, during menstruation

Avoid the following activities during ophthalmic application:

- Consumption of alcohol, direct exposure to sunlight, direct exposure to fire, a furnace, or an oven Day sleep; physical exertion Overindulgence in sex

3. Formulations for various eye diseases

3.1 Izhikan

Preparation: 1

Piper nigrum (*Milagu*) is triturated with the juice of *Desmodium triflorum* (*Sirupulladi*), then fried into ash and mixed with butter. Applied to the eye for treating *ilikan*.

3.2 Blindness

Preparation: 1

powdered and filtered the heated brick, which is triturated with butter, honey, and sesame oil. Then apply it to the eyes.

Preparation: 2

Piper nigrum (*Milagu*) is rubbed with 10 drops of *Momordica charantia* (*Paagarkakai*) juice for 10 times and then instilled into the eyes.

3.3 Kankaasam

Preparation: 1

Half a litre of sesame oil; 200 (counting) flowers of *Leucas aspera* (*Thumbai*). Everyone is placed in a glass bowl and exposed to sunlight for ten days. After filtering, it is stored in a closed container. Two drops are applied to the eyes in the morning and the evening. It will be used to headaches as well.



Preparation: 2

Heliotropium indicum (Thelkodukilai) and *Tabernaemontana divaricata* (Nandhiyaavattai poo) are crushed with a cloth and instilled into the eyes.

Preparation: 3

Tabernaemontana divaricata (Nandhiyaavattai poo) petals are pouched with a clean cotton cloth and soaked in breast milk for 3 hours, then instilled into the eyes. dose: 2 drops, duration: 1 week

3.4 Epiphora

Vellaisaaranaivaer is triturated with honey and apply in eyes.

3.5 Epiphora and Kanaruvaruppu

Crocus sativus (kungumapoo) is triturated with breast milk and instilled into the eyes.

3.6 Maalaikan (night blindness)

Preparation; 1

Night blindness is treated by an ocular application of the juice obtained from crushing the leaves of *Leucas aspera* (Thumbai). The only diet advised is cooked rice and warm water throughout this ophthalmology procedure. It is imperative to absolutely refrain from consuming tobacco and tamarind.

Preparation: 2

Azadirachta indica (vaepilai) karkam is applied to the hen's bile (Kozhipithu) and heated with umi after being pulverised and instilled into the eyes.

Preparation: 3

Terminalia arjuna (Maruthampattai) and *Cuminum cyminum* (Narseeragam) were crushed and instilled into the eyes.

3.7 Ophthalmalgia

Preparation: 1

Leucas aspera (Thulasiilai), *Melochia corchorifolia* (Punnaaku ilai), and *Tamarindus indica* (Puliyamarathu ilai) are all taken in the form of powder and pouches on a cloth and then soaked in *Tamarindus indica* (pazhampuli) juice, which cures ophthalmia.

Preparation: 2

Melochiacor chorifolia (Punnakku), *Trichodesma indica* (Kavizhilthumbai), *Tamarindus indica* (pazhampuli), Alum (padigaram), and the leaves of *Cassia tora* (thagarai) are collected and applied to the eye for treating ophthalmia.

Preparation: 3

A sanitised cloth-made bag containing salt powder. After being submerged in rice water for 48 hours (*two naazhikai*), it gets inserted into the eyes. Three droplets are the dosage.

3.8 Kanamaram (Ophthalmia neonatorum)

Terminalia chebula (kadukai) pieces are placed in the sun after being pouched in a cloth and immersed in castor oil. After that, the eyes are introduced with the preparation.

3.9 Presbyopia

Preparation: 1

Candy sugar (Karkandu) is formed into a pouch, soaked in pomegranate juice, and then inserted into the eyes.

Preparation: 2

The resin of *Azadirachta indica* (vaepampisin) is triturated with the juice of *Alangium capitulum* (azhinjil pasha saaru) and applied to the eyes.



Preparation:3

Calamine (thutham), copper sulphate (thurusu), and *Alternanthera sessilis* (ponnangaani vaer) are triturated and rolled into tablets along with the juice of *Tamarindus indica* (puliylilai), lime, and *Borassus flabelliformis* (panaimattai). after that the eyes were moistened and massaged with sembira juice.

4. Formulations for other conditions

4.1 Eye drops for controlling fever

Lime juice is used to triturate equal amounts of dried *Zingiber officinale* (chukka), *Piper longum* (thipili), *Thalictrum foliolosum* (peetharogani), and *Piper nigrum* (milagu) and shape them into tablets. To reduce fever, the tablet was smeared with breast milk and introduced into the eye.

4.2 Delirium

Preparation: 1

Ferula asafoetida (Perungaayam) Borax (Vengaaram), yellow arsenic trisulfide (Thaalagam), and rock salt (Inthuppu) are all triturated with *Luffa acutangula* (peipeerkku) and rolled into pills. The pill is rubbed with *Ferula asafetida* (perungaayam) and dropped into the eyes.

Preparation: 2

Savukkaram is fried in neemseed oil, and when it is fried, water is poured into it. Medicine is then taken from the water and used in the eyes.

Preparation: 3

Cinnaar (saathilingam) Borax (vengaram): 9 grammes *Piper nigrum* (vaalmilagu) *Piper longum* (arisithippili) *Quercus infectoria* (maasikai): 9 grammes; all are grinded with lime juice and rolled into finger-length tablets. Dried and kept in a container. While using the tablet, it is rubbed with breast milk, the juice of *Piper betle*, and the juice of *Vitex negundo* (notchi) and dropped into the eyes.

4.3 Jaundice

Seeds of *Ricinus communis* grinded with breast milk and dropped into the eyes.

4.4 Sinusitis

Zingiber officinale (chukku), rocksalt (indhuppu), three myrobalans, *Embelica officinalis* (nelli), *Acorus calamus* (vasambu), *Barringtonia acutangula* (samuthrapazham), *Piper nigrum* (milagu), and dry *zingiber officinale* (chukku) a similar amount of the aforementioned medications is triturated with lime juice and then formed into tablets. The tablet is given to the eye to cure fever, headaches, and sinusitis after being rubbed with *Piper betle* (vetrilai) juice.

4.5 Poisonous conditions

Ferula asafoetida (Perungaayam) Yellow arsenic trisulfide (Arithaaram), mercury (Paatharasam), rock salt (Inthuppu), and borax (Vengaram) are all triturated with the juice of *Luffa acutangula* (*Paeipeerku*) and rolled into pills. while using the tablet, rubbed with water, and dropped into the eyes.

5.Results and discussion

This *Kalikkam* literature review dealt with the basics of *Kalikkam* and treatment modalities. It is being used for treating eye diseases and other systemic illnesses as well. Sages *Agathiyar* and *Naagamuni* have described *kalikkam* as both preventing and treating diseases. As per the WHO, priority eye diseases are visual impairment, cataracts, childhood blindness, refractive errors (presbyopia), glaucoma, age-related degeneration, and corneal opacities. Ancient Siddhars had the knowledge to find treatments for the above-mentioned eye diseases through the non-invasive *kalikkam* method. The drugs are easily available and made themselves easily available. It can be used by the patients themselves easily, making it acceptable. Not only leaf juices (or) plant extracts, but so many preparations like *kalikkam*-pills, *kalikkam*-oil, and *kalikkam*-kuzhambu are described in Siddha literature.



Of the thirty literatures, 48% of the kalikkam formulations contained copper sulphate, also known as thurusu. Thirty percent of the formulations included Piper nigrum (milagu), Terminalia chebula (kadukai), Tamarindus indicus (pazhampuli), and Calamine (thutham). In twenty-two percent of the formulations, dry Zingiber officinale (chukku) and conch shell (sangu) were utilised. In 19% of the formulations, Glycyrrhiza glabra (athimathuram) and rock salt (inthuppu) were utilised. Breast milk was used to smooth out 40% of the preparations. A quarter of the formulations were thinned with Trianthea decandra (saanai) juice. The juice of the Piper beetle was used to smooth down 11% of the preparation. To smooth down 7% of the methods of preparation, Tabernaemontana divaricata juice (nanthiyaavattai) was used. Cataracts accounted for 55% of the *Kalikkam* preparations listed. Ophthalmalgia was noted in 37% of the preparations. For night blindness, 18% of formulations were mentioned. For various eye disorders, 33% of *Kalikkam* formulations were identified.

6. Conclusion

The traditional system of medicine has many specialties, especially Siddha medicine, which has authoritative, non-invasive methods that are less known to the public and even to practicing physicians. *Kalikkam* is one such specialty where medicated drops are applied to the eyes through special techniques for the management of eye diseases and other clinical conditions such as delirium, controlling fever, sinusitis, jaundice, and poisonous conditions. Through this review, we are able to observe the importance of Siddha medicines in treating emergencies in their own way -the non-invasive *kalikkam* method.

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