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Evidence Based Mechanistic Reasoning for Balancing Three Humors through Siddha Clinical Practices for a Healthy Lifestyle

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Abstract: The strength of the Siddha Medicine lies in its holistic approach -- the physical, mental, social and spiritual well-being by adapting simple lifestyle practices (postures, breathing exercises, meditation, etc.). Dietary regimens are relevant to six tastes, usage of safe and effective plant based drugs and drugs of mineral and animal origin. Siddhars have recommended certain basic lifestyle guidelines, preventive measures that help to prevent diseases and they include observation of certain regimen as mentioned in preventive measures (Pini anukavithi ozhukam) that help to prevent diseases. Treatment procedures in Siddha help in normalizing the altered vital life factors (Mukkuttram i.e. Vatham, pitham and kabam). In this study we discuss therapeutic purgation (Viresanam), therapeutic oil bath (ennai muzhukku), therapeutic application Collyrium/medicated eyeliner (kalikkam or mai), therapeutic Nasal drops (nasiyam). These treatment methods are easily adaptable as a preventive measures for a disease - free life and balances three vital factors. These guidelines when strictly followed ensure longevity. These simple preventive measures have scientific value and it is discussed in this review.

Keywords: Siddha Medicine, Pini anukha vithi ozhukam, Ennai kuzhiyal, Viresanam, Anjanam, Nasiyam

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Introduction

Siddha Medicine is one of the AYUSH systems of traditional medicinal practices followed in India through decades. This system is more customary

in South India and very popular among Tamil people even outside the country. The name "Siddha" itself explains its origin of medicinal

practices from Sages called “Siddhars” meaning “perfected” or “Holy immortals”. One of the definitions for Siddha medicine is “defeat the death” meaning that which ensures prevention against death. The first and foremost objective of Siddha medicine is to endow a disease-free life to people by teaching them healthy daily routines rather than treating a disease after it occurs (Gupta, 2015).

In Siddha system of medicine, it is considered that our human body is made up of Aimpootham (five elements of life) in the form of Vatham, Pitham, and kabamas body constitutions. This is commonly termed as “Thiridosham”(Bodily humors).The disproportion in these bodily humors is the reason for any type of disease manifestation.The balanced proportion of thiridoshams are said to be responsible for the characteristic features of an individual that are determined genetically and they also influenced by the environmental changes during their lifetime.“Vathavaayuvaipadaiththu, Piththavan-niyaikaaththu, Saethumaseethamaaithudaiththu” is the quotes of Sage Theraiyar explaining the functions of thiridosham (Shanmugavelu, 2009). According to this phrase, vatham may be associated with the developmental and growth processes. This also plays a vital role in signaling pathways that controls cell growth and differentiation. As air element is one of the constituent of vatham, it manages the movements in all aspects including the movements of cells, nutrients, and wastes in our system. Pitham is responsible for the protective mechanism and metabolism of our body (Prasher, 2011). This Pitham processes to bring changes in digestive fire, upholding of immunity, metabolism and energy production. At the cellular level, Pitham may regulate the activity of growth factors, enzymes, hormones which are required for the homeostasis and maintenance of basal metabolism. Kabam controls the central nervous and musculoskeletal systems. Also acts to form and maintain the body mass, shape and flexibility. The anabolic processes and co-ordination of gene and protein function may be due to kabam.

Irregular dietary patterns, repressing natural urges, inadequate sleep, and loss of leisure are the reason for the various illnesses, Increased Urbanization, intensive industrialization, and accelerated deforestation all contribute to an increase in psychosomatic disorders (Sharma, 2011). The imbalance of these bodily humors leads to diseased conditions which can be prevented by following our daily routines as per Sage Theraiyar’s “PiniAnuga Vidhi Ozhukam”. In this prose, he emphasized the daily activities including detoxification procedures like EnnaiKuliyal (External Oleation), Viresanam (Therapeutic Purgation), Anjanam (Collyrium), Nasiyam (Nasal Medication) which needs to be followed periodically by everyone to lead a healthy life:

‘Veeru sathur naatkalukor nei mulukkai thavirom’
– Oilbath once every 4 days

‘Adar nangu madhikorukaal bethiurai nugarvom’
– Bethi (viresanam) every 4 months once

‘Theru madhi ondarai kor tharra nasiyam peruvom’ – Nasiyam every 1 1/2 months once

‘Vizhikaluku anjanam moondru naal korukkaliduvom’ – Kalikkam(anjanam) once in every 3 days.

Modification of disorders in regular habits of an individual to control diseases and implementation of ideal lifestyle for prevention is a comprehensive way to tackle the burden caused by the lifestyle disorders. Siddha system of medicine emphasizes on the habitual practices to be followed by an individual in his lifetime to lead a healthy life as “PiniAnuga Vidhi Ozhukkam”. Sage Theraiyar mentions certain principles to be practiced periodically or on daily basis to prevent diseases and lead a healthy life. In this article, we review the periodically habituating procedures like EnnaiKuliyal (External Oleation), Viresanam (Therapeutic Purgation), Anjanam (Collyrium), Nasiyam (Nasal Medication) and the possible mechanism of action including the Siddha concepts over them.

EXTERNAL OLEATION - ENNAI KULIYAL:

Ennai Kuliya is stated as “Oil bath” or “External Oleation”. As per Siddha system, “EnnaiKuliya” is about soothingly applying the oil from head to toe without production of heat, and dripping three drops of oil into each ear and two drops into each nostril. After oil application, the body may be permitted to be soaked for 30 min and then recommended to take a bath in lukewarm water. Literature also highlights the preferable days for oil bath (Ennaimuzhukku) based on genders which mentions Monday, Saturday for males and Tuesday, Friday for females. It is desirable to practice oil bath weekly twice or four days once in above mention days as per their gender (Uthamarayan, 2006).

Benefits of Oil Bath:

According to Pathartha Guna Chintamani, Ennaikuliya prevents the diseases by vitalizing five sense organs (skin, eyes, ears, nose and mouth), and also strengthens the head and joints of the body. It improves hair growth and voice clarity. It promotes blood circulation, and is a best remedy for laziness and anxiety. It offers good skin complexion, In general, EnnaiKuliya rectifies Kapha diseases, Thiridosha diseases, dental problems, and ageusia. The heaviness of the oil reduces vatha, the Coldness of the oil reduces pitha, and hot oil reduces Kapha.

Do's and Don'ts On the day of Oil Bath:

Siddha literature, Therayar Thailavarkka Churukkam, insists do's and don'ts of the day routines and food regimen on the day in which oil bath is taken. Sleeping in day time, exposure to heavy sunlight and cold breeze, sexual encounter should be avoided on the day of oil bath. Food regimen is given in Table 1 (Rathinam, 2022).

Siddha concepts on EnnaiKuliya:

Siddha emphasizes the selection of oil used for oil bath based on the person's body constitution or their disease condition. As far as preventive care, the oil should be chosen based on their body constitution (Thaegi). For Vatha constitution,

medicated oil like Chukkuthyala, Veppampattai Thyla, Kurunthottithyla, etc. should be used. For Piththa constitution, Asana vilwathyThyla, KeezhanelliThyla, VettivaerThyla, KulirthamaraiThyla, etc. could be used. For Kaba constitution, SemmulliThyla, ArakkuThyla, Aswaganthabalalakshathy Thyla, etc. need to be used. Using the above-mentioned oils as per their requirement, enhances the individual's health status (Table 1) by improving their immunity (Kandhasamy, 2011).

Possible Mechanism of Action:

Absorption of oil most probably starts at the surface of the skin. Although there is absorption through the hair follicles, they make up a small fraction of epidermis. Absorption through Sweat gland and sebaceous gland seem to be minimal. The quantity of medicated oil that enters the hair follicles and glands increases when the oil is rubbed on the surface. Additionally, rubbing pushes some material through the stratum corneum without allowing it to diffuse and disperse molecules. Hence, the mortar-brick concept is applied in this mechanism. The way that epithelium is structured is similar to how bricks are placed when building a wall. The oil used during an oil bath permeates these intercellular spaces between epithelial cells and gradually penetrates deeper and deeper.

While taking oilbath, oil penetrates via sebaceous gland which plays a major role in regulating homeostasis. Ghee and Sesame oil are the common base material used for the preparation of medicated oils. These base materials are rich in Vitamin E and antioxidants help to prevent aging and promote a healthy complexion for the skin. Commonly used sesame oil is a polyunsaturated fatty acid that contains large amounts of linoleic acid which maintains blood pressure and insulin sensitivity in the body (Zouboulis, 2003; Picardo *et al.*, 2015).

THERAPEUTIC PURGATION – VIRESANAM:

Viresanam is one of the modes of Siddha as detoxification or to treat disorders of the body.

Table 1: Food regimen on the day of oil bath

Foods to be taken	Foods to be avoided
➤ Greens- Alternanthera versicolor, purple amaranthus, solanum trilobatum	➤ Sespania grandiflora
➤ Greengram, pigeonpea, black gram	➤ Bengal gram, Horse gram
➤ Pepper, cumin seeds, fenugreek, cardamomum	➤ Mustard, fennel, sesame seeds
➤ Tender ridgegourd, snakegourd, brinjal, beans and drumstick	➤ Bitter gourd, cluster bean, ash gourd, onion. Colocasia Tuber (taro)
➤ Embilica officinalis	➤ Coconut, tobacco
➤ Meat of rabbit, goat, rain quail, small fish and lake fish, butter milk, cow milk and ghee	➤ Meat of crab, chicken, sheep, pig, wild cow

Viresanam, known as “Therapeutic purgation”, is a purification process that is commonly used to treat vatha disorders and metabolic disorders like obesity and diabetes mellitus. Viresanam aims to eliminate excessive VathaThodam from the body to maintain the state of health for a longer duration. Vitiating Thodam is the basic factor in the manifestation and progress of any disease. On eliminating vitiated Thodam from the body, the disease could be prevented or already established diseases can be treated in the most effective manner.

In classic texts, it has been clearly mentioned that these procedures, especially Viresanam, can act as a curative, preventive, and health-promoting measure. This may be brought about by subtle changes at the cellular level by modulating physiological, biochemical, and immunological activities at the molecular level. In Siddha system of medicine, the drugs used for Viresanam is commonly administered in the form of oil, powder, tablet, decoction, mezhugu and kuzhambu. Few examples in each form of drug used for Viresanam is shown in Table 2 (Chaturvedi *et al.*, 2016).

Viresanam– Procedure for therapy:

The procedure of Viresanam is performed in three steps:

Step 1: The preparatory procedures is performed before the main therapy. In this period, internal medicine needs to be given to maintain udal agni (use of appetizers and digestives drugs) followed by oilbath.

Step 2: Main procedure, which means administration of Viresanam drug as per the disease, udalvanmai (strength), and Theganilai (body constitution) of the patient.

Step 3: Postoperative procedures in which the patient is advised to take specific dietary regimens for 3-7 days depending upon the number of bowel evacuated after administering Viresanam drug.

Siddha concepts on Viresanam:

According to Siddha literature, it is believed that hypo-functioning of Agni (digestive fire) leads to the production of Amam which can combine with other biological entities and induces various pathological conditions (Yadav, 2020). Viresanam enhances and stabilises the digestive fire which in turn eliminates the stagnant Amam. This paves a way to pursue a disease-free life and hence, this therapeutic purgation therapy is known for its preventive care and detoxification of the body.

Possible Mechanism of Viresanam:

Viresanam allows the biological system to return to hemostasis, to rejuvenate rapidly, and also

Table 2: Examples for viresanam

S. No.	FORM OF DRUG	DRUG NAME
1	Oil	Siddhathi oil, Merugulli oil
2	Chooranam	Nilavagai chooranam
3	Kuligai	Meganatha kuligai
4	Kudineer	Triphala decoction
5	Mezhugu	Navauppu mezhugu
6	Kuzhambu	Agasthiyar kuzhambu, Gowsikar kuzhambu

facilitates the desired pharmacologic therapeutic effects of medicine and eliminates the waste products from the human body. Altered gut flora is associated with the pathogenesis of both intestinal and extra-intestinal disorders. Intestinal disorders include inflammatory bowel disease, irritable bowel syndrome and coeliac disease, while extra intestinal disorders include allergy, asthma, metabolic syndrome, cardiovascular disease and obesity.

During the purgative process, cellular fluid drains into the interstitial fluid, which drains into the vascular compartment, from where it drains into the GIT for elimination. As a result, purgation is supposed to alter the biochemical activities of the body while modulating the fluid compartments. Purgation reduces *Escherichia coli* colonization and encourages the stability of gut flora (Peterson *et al.*, 2016).

NASAL INSTILLATION – NASIYAM:

Nasiyam also known as Nasal Instillation, is the process by which the drug is administered through nostrils through which thiridosham is balanced in its normal level. This procedure is specially meant to neutralize vitiated kabam. Nasiyam medicines enter the brain through the nose and act on higher brain centers that regulate various neurological, endocrine, and circulatory activities, having local and systemic effects.

Nasiyam – Procedure:

The medicine is administered through nose either in the form of ghee, oil powder, liquid or smoke. It is particularly useful in the treatment of disease occurring in the organs. It works on whole body by improving the functioning of the endocrine glands and nervous system.

- Initially wash-down the surface of nostrils and face with hot water.
- Next instillation of drops into the nasal cavity.
- Left it and wait for 10 min.
- After the absorption of medicated oils again wash the nostrils with hot water.

Siddha concept on Nasiyam:

As the nose is the organ of earth element, it has kabam dominance. Hence, the nasal drops balance Kabam. Even other humors balanced by specific medication along with Kabam. As it also used to balance thiridosham, the medicated oil used for nasiyam is chosen based on the three humors.

Example of Nasiyam medicines for vatham balance - Chukku thylam

Example of Nasiyam medicines for pitham balance - Santhanathi thylam

Example of Nasiyam medicines for kabam balance – Peenisa thylam, Notchi Thylam

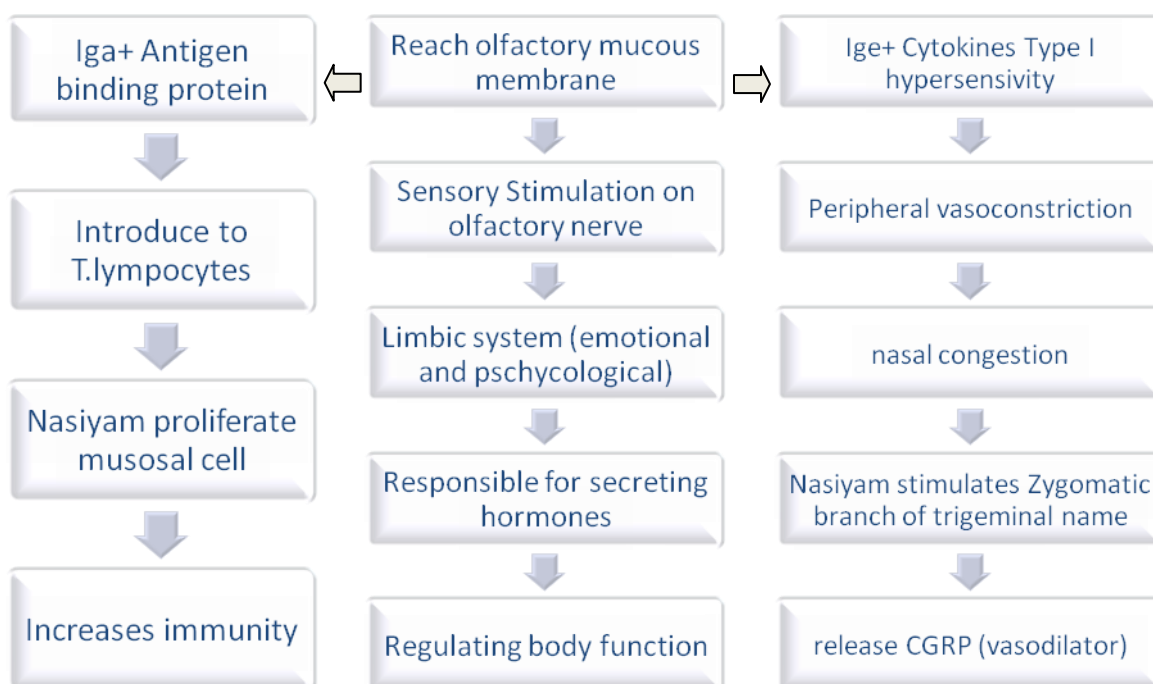


Fig. 1: Mechanism of action – Nasiyam.

Possible Mechanism of Nasiyam:

The olfactory and trigeminal nerves are chemoreceptors connected to higher centers of brain and thus may regulate the body's behavior, emotions, circadian rhythm, etc. Intranasal route has favorable approach for delivery of drugs to the brain. The nose is the gateways to the head, they act as a direct access to our minds and consciousness as it carries vital life force. Prana in our breath and is then circulated throughout our body and plays role to communicate to our self and so nasiyam technique is used to stimulate unconscious level in coma patients. Although this technique improves imbalance in three humors namely, vatham, pitham and kabam and also it decreases the kabam in specific (Uthamarayan, 2006).

The experimental stimulation of olfactory nerves causes stimulation in higher centers of brain i.e. limbic system consisting mainly Hypothalamus, Amygdaloidal complex, Epithalamus, and Basal ganglia. The olfactory nerve is phylogenetically closely related to brain, however, it is known that these nerves are connected with limbic system of the brain

including hypothalamus. This limbic system and hypothalamus are having control over endocrine secretions. It is considered that the stimulation of the olfactory nerves causes stimulation in certain cells of hypothalamus and amygdaloid complex.

Elevated levels of neutralizing IgA at the mucosal surfaces are associated with a high level of protection following intranasal immunizations. The significance of IgA-mediated nasal immunity holds a tremendous potential to mount protection against respiratory pathogens. IgA plays a crucial role in modulating mucosal immunity and conserving homeostasis. Contrary to other immunoglobulins, IgA mediates the clearance of toxins and pathogens from the mucosal tissue by immune exclusion, receptor blockade, and steric hindrance (Fig. 1).

COLLYRIUM – ANJANAM:

Anjanam or Collyrium is a technique for applying medication to the eye's mucous membrane. Medicines used as Anjanam are in the form of paste to be applied to the inner edge of the eyelids or drops to be directly administered. It helps with cataracts, certain types of fever, fits,

and headaches while also enhancing eyesight acuity.

Anjanam – Application method:

The procedures for Anjanam involves:

- It should be applied in the morning (8 am) and evening (5 pm).
- To avoid the unease of the patient the procedure should be explained to them.
- The patient is advised to lie in supine position on a comfortable bed.
- Main Procedure- Physician, with help of his left hand index fingers, patient's eye lids are drawn apart without any pressure.
- Anjanam should be taken on the applicator and it is applied with right hand over the Palpabral conjunctiva starting from the inner canthus (inner angle of eye) to outer canthus(outer angle of eye) and vice versa. This process should be repeated twice or thrice. After the application, patient is advised to close his eyes and roll the eye ball in all directions for proper spread of Anjanam.
- After 5 to 10 min the eyes are washed with suitable kashayam or with luke warm water. After irrigation, the lids are drawn apart, and carefully inspected for drug precipitants. If any present they should be removed gently with dry cotton wool.

Siddha Concept – Anjanam:

Eye is the organ of fire element. As there is derangement in the fire element, normal physiology of eye functions will be disturbed. This is due to vitiated Kabam, which affects the fire element. Hence, Anjanam when instilled in the eyes, it reduces the vitiated kabam. Thus it restores the normal functioning of eyes.

Mechanism of action:

The drug permeation is influenced by various layers of the cornea, conjunctiva, and sclera. The cornea, the anterior most layer of the eye, is a mechanical barrier which limits the entry of

exogenous substances into the eye and protects the ocular tissues. Each layer offers a different polarity and a potential rate-limiting structure for drug permeation. The corneal epithelium is lipoidal in nature and contains 90% of the total cells in the cornea and poses a significant resistance for permeation of topically administered hydrophilic drugs. Furthermore, superficial corneal epithelial cells are joined to one another by desmosomes and are surrounded by ribbon-like tight junctional complexes (zonula occludens). Presence of these tight junctional complexes retards paracellular drug permeation from the tear film into intercellular spaces of the epithelium as well as inner layers of the cornea. Following oral or intravenous dosing, drugs can easily enter into the choroid due to its high vasculature compared to retinal capillaries.

Two types of transporter systems are of interest in ocular drug delivery: efflux transporters and influx transporters. Widely studied efflux transporters belong to the ATP binding cassette superfamily, whereas influx transporters belong to the solute carrier (SLC) superfamily. Efflux transporters lower bioavailability by effluxing the molecules out of the cell membrane and cytoplasm. Colloidal dosage forms have been widely studied and employed in the field of ocular drug delivery. Advantages of colloidal dosage forms include sustained and controlled release of the drug at the targeted site, reduced frequency of administration, ability to overcome blood–ocular barriers, and efflux-related issues associated with the parent drug. Further, these carriers can also bypass or overcome various stability-related problems of drug molecules, e.g., proteins and peptides.

Contraindication for Anjanam:

The application of Anjanam is prohibited in the following conditions:

- Persons suffering fatigue,
- After consumption of alcohol,
- Fear,

- Fever,
- Headache.

If in these conditions applied, Anjanam may cause redness of eyes, discomfort, feeling of darkness in front of eyes or dusky feel, discharge, pain, and congestion, swelling and inflammation would get increased. It may affect the vision also (Shanmugavelu, 2009).

Conclusion

It can be concluded that in Siddha those medical practices are absorbed through the nasal mucosa, eyes, skin, and ears and act on significant parts of the body that regulate neurological, endocrine, and circulatory functions as well as exhibiting a healthy status. These methods show that the body gets more substantial and more resilient to the exhaustion brought on by current stressful modern life. This article assists us in recognizing the significance of the Siddha traditional practices and how important it is to live a healthy life.

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