



Review Article

A CLINICO-PHARMACOLOGICAL ASPECT OF KWATHA KALPANA IN ENT DISORDERS

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*Nidana Panchak,**Tridosha.***ABSTRACT**

Ayurveda is split into many branches. The branch which deal with the drug and use within the style of medicine for the treatment of diseases is thought as *Bhaishajya Kalpana* (Ayurvedic Pharmaceuticals). *Bhaishajya Kalpana* endorses the five fundamental dosage form, namely *Swaras* (juice), *Kalka* (paste), *Kwatha* (decoction), *Hima* (cold infusion), *Phant* (hot infusion). This is often the real source of success for physicians. Among them, *Kwatha Kalpana* (decoction types of medicine) is that the most vital and widely used dosage form in Ayurvedic pharmaceutical. *Shalakyatantra* (treatment of disorder above clavicle) is one in all *Ashtanga Ayurveda* (eight clinical branches of Ayurveda), coping with the study of diseases occurring above the *Jatru* (part of body above the clavicle), which has *Shiras* (head), *Karna* (ear), *Nasa* (nose), *Netra* (eyes) and *Mukha* (mouth) and their management. *Shalakyatantra* is primarily concerned with preserving and restoring the health of the *Indriyas* (senses). In modern science ear, nose and throat are studied collectively within the specialized field called otolaryngology or upper tract diseases which is colloquially referred to as ENT. The monotonous mechanical life style, faulty food habits, restless schedule, stress, overpopulation, overcrowding of vehicle leading to the sound and air pollution, junk food habits is causing hazardous effects of receptor. Ayurvedic system of drug enunciates more of preventive measures which are lacking in contemporary science. Identifying the *Nidana* (etiology) and avoiding it forms the key role in preventing most of the ENT disorders. Hence, it's is highly essential to spot and treat the common ENT disorder seen in clinical practice with Ayurvedic measures specially *Kwath Kalpana*. In present article a clinic-pharmacological aspect of the *Kwath Kalpana* is discussed with reference to ENT diseases.

INTRODUCTION

Shalakyatantra is one of the *Ashtanga Ayurveda*, which deals with the study of diseases that arise on the *Jatru* (part of the body above the collarbone), which has *Shiras* (head), *Karna* (ears), *Nasa* (nose), *Netra* (eyes) and *Mukha* (mouth) and its processing. *Shalakyatantra* is primarily concerned with preserving and restoring the health of the *Indriyas* (senses).

It's is amazing to determine the wisdom of ancient Indians to own noticed the requirement of a separate branch for the study of ear, nose and throat and described under *Shalakyatantra*.^[1] In facts this branch involves head, eye and dental diseases also. By definition, it deals with disorder of organs above the clavicle or collar bone (*Urdhwa jatrugata roga*). As these are vital organs (*Uttamaanga*), the branch also called *Uttamanga Chikista*. *Nimi* has been pioneer in popularizing this branch, hence, it's also called *Nimitantra*. In modern science ear, nose and throat are studied collectively within the specialized field called Otolaryngology or upper tract diseases which is colloquially called ENT. *Indriyas* are the media through which the objects of external environment are perceived and that they also reflect the unhealthiness of the body by features like tiredness, uneasiness etc. *Indriyas* are involved in

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awareness and reaction to the external environment. Hence these are important faculties of our body which are at risk of get afflicted by various factors.

Present lifestyle and environmental pollution are causing hazardous effect on the health of *Indriyas*. The common etiological factors for the ENT disorder are *Rajo Sevana* (dust), *Dhooma Sevana* (smoke), *Sheeta Vayu Sevana* (cold air), *Atapa Sevana* (Sunlight) which became inevitable due to overpopulation, industrialization and pollution.^[2] Hence the incidence of allergic and immune compromised manifestations has become common now a days. Monotonous mechanical lifestyle, wrong eating habits, anxiety schedule, stress and tension etc. have made everyone to be away from the principles of *Swasthavrutta* (preventive and promotive health) and *Yoga*. Hence the majority are getting victim of nutritional and auto immune disorders. Overpopulation, overcrowding of vehicles resulting in sound and air pollution, junk food habits etc. have brought many hazards to human life affecting the sense organs additionally as whole body causing various disease like *Nasashosha* (nasal dryness), *Badharya* (deafness), *Gandahani* (loss of smell), Otagia, Epistaxis, Headache, Hoarseness, Otorrhea, Ozaena, Sinusitis, Tonsillitis, Dental caries, Gingivitis, Bleeding gums etc. our Ayurvedic system contain details explanation of 76 types of eye diseases, 28 types of ear diseases, 31 types of nose disorders, 11 types of disorders of head and 67 types of disorders of mouth including throat, dental etc.

Bhaishajya Kalpana (Ayurvedic Pharmaceutics) endorses the five fundamental dosage forms, namely *Swaras* (juice), *Kalka* (paste), *Kwatha* (decoction), *Hima* (cold infusion) and *Phant* (hot infusion)^[3] among them, *Kwatha Kalpana* (decoction types of medicine) is that the most important and widely used dosage form in Ayurvedic pharmaceutics. This formulation is obtained by boiling Chinese herbs with a very specific proportion of water and reduces the amount to your liking if the heat is appropriate. While formulating on the basis of Ayurvedic principles, it emphasizes various provisions of water volume, drug properties, column intervention and *Prakshepa Dravya* addition (powdered substance addition). Play an important role in developing the effectiveness of the preparation.^[4] Decoctions also form the bottom of assorted Ayurvedic formulation like *Asava* (Fermented preparations), *Arishta* (fermented preparations), *Taila* (oil), *Gutika* (pills) and *Avaleha* (paste) in various pharmaceutical process. It's is used internally for drinking purpose, medicated enemas, and externally for eyewash. *Kwatha Kalpana* is excellent due to its many unique properties such as

easy availability of ingredients, single drug herb decoction, excellent adaptability and better absorption. Assimilation within the body system and retains many of the water-soluble portions present in raw materials.

Kwatha (decoction) is extremely effective and widely used dosage form. This *Kalpana* with its relevancy to modern technology should be implemented to realize increase shelf life, increased potency and greater palatability.

AIM AND OBJECTIVE

- To explore the *Kwatha Kalpana* in ENT diseases described in Ayurvedic classics with clinico-pharmacological aspect.
- To provide further scope for study to explore *Kwatha Kalpana* in ENT diseases in scientific way.

MATERIALS AND METHODS

Research article based on Ayurvedic decoction having clinico-pharmacological role in ENT disorders. Article data and information scattered in different *Ayurved Samhitas*, textbooks, PubMed, research papers, published articles, journals and website.

RESULT AND DISCUSSION

Health is order and disease is disorder. Within the body, there's a relentless interaction between order and disorder. The person has learned to completely aware of the presence of disorder in the body then set near to reestablish order. One understands that order is inherent in disorder which a return to health is thus possible. The inner environment of the body is consistently reacting to the external environment one another and these two are out balance can make disorder. To vary internal environment so as to bring it into balance with external environment, one must often understand how the disease may be process occurs within the soul.

In Ayurveda system of drug, we are able to identify various medicinal preparations mentioned under *Bhaishajya Kalpana*. *Kashaya* (decoctions), *Vati* (pills), *Churna* (powder), *Taila* (oils), and *Asava-Arishta* (fermented preparations) are few examples for them. These drug preparations are often classified into two: primary preparations and secondary preparations. *Panchavidha Kashaya Kalpana* (five aqueous extracts) is taken into account as primary preparations which include five varieties of liquid preparations that are therapeutically effective. These primary preparations are commonly used because the initial dosage forms in treatment and because the base for the various medicinal preparations. Decoction is widely used in the treatment of Ayurveda and is one of the effective dosage forms,

and the expiration date of this formulation is 24 hours. Patient should prepare the decoction on a daily basis.^[5] If we are able to develop novel products from decoctions having long shelf life, that would be convenient for people. However, so as to meet this requirement, potency of the preparation should be same because the traditional formulation. Potency of a medication is critical for its efficacy. When modifying the preparation to an easy-to-use dosage form with appropriate shelf life, active principles or phytochemicals of the drug need to be protected because the traditional preparation.

Decoction in Nasal diseases

In Ayurvedic medicine, allergic rhinitis is described as *Apeenasa* (chronic rhinitis) or *Peenasa* (rhinitis) and the concept of allergy is explained under *Asatmyaja vyadhi* (allergic disorders). Its effects are described in heredity, *Viruddhahara* (unavoidable food) and *Dushivisha* (pollutant or allergen) and *Ritu Sandhi* (seasonal change).^[6] Proper management of allergic rhinitis is an important factor in the effective management of coexisting or complex respiratory diseases such as asthma, sinusitis, sleep apnea.^[7]

Decoction in Karnaroga (Ear) diseases

The most of time decoction use in ear disease are in the form *Karnaprakshalan* (aural toileting). Local application of *Kashaya Dravya* reduces *Kapha Dosha* and most of them act on the skin. Many decoctions having antibacterial, antimicrobial, anti-parasitic and anti-inflammatory properties, so it is also helpful for clearing the ear infections. *Karna Prakshalana* is a technique that makes the ear toileting with various liquid drugs such as fresh juices and oils. The *Sursadi Gana* and *Rajvrikashadi Gana* medicines are considered to be the best for ear cleansing.^[8] Decoction of *Panchkashaya* drugs i.e., *Haritaki* (*Terminalia chebula* Retz.), *Amalaki* (*Phyllanthus emblica* L.), *Manjishtha* (*Rubia cordifolia* L.), *Lodhra* (*Symplocos racemosa* Roxb.) and *Tinduka* (*Diospyros tomentosa* Roxb.) are also useful for *Karna Prakshalana* in conditions like *Karnasrava*.^[9]

Decoction in Shiroroga (Head Disorder)

The most typical types of head disorders such as *Ardhavabhedaka* described in *Shiroroga* (head disease in Ayurveda) in Ayurveda are caused by damage to *Tridosha*. *Ardhavabhedaka* is one of the *Shiroroga* (disorder of head) which might be correlated with migraine having symptoms like paroxysmal unilateral (half cranial) headache sometime related to vertigo, nausea, photophobia and phonophobia. According to *Acharya Sushruta Ardhavabhedaka*, it is caused by the damage of *Tridosha* (*Vata- Pitta- Kapha*).^[10] *Acharya Charaka* stated that the damaged *Vata/ Vata Kapha* was

involved in the manifestation of *Ardhavabhedaka*^[11]. *Acharya Vagbhatta* believed that it occurred because of the damaged *Vata*.^[12] Many decoctions are mentioned in *Ayurvedic Samhita*, especially within the management of *Shiroroga*. This decoction has ingredients having *Ushna Virya* (hot potency) and *Vata Shamaka* (*Vata* subsiding) property which might be beneficial in *Shiroroga* as this disease has dominancy of vitiation of *Vata* and *Kapha Dosha*, dominancy.

Decoction in Mukharoga (Oral Disease)

Mukharogas are 65 in number according to *Acharya Sushruta*. Common *Mukharogas* is *Vataja ostakopa* (Seasonal cracked lips/ chapping of lips), *Pittaja ostakopa* (Herpes Labialis), *Jalarbuda* (Mucocele), *Sheetada- Dantavesta* (Gingivitis), *Paridara* (Generalised gingivitis), *Dantaharsha* (Hyperesthesia), *Chaladanta* (Tooth mobility), *Dantasharkara* (Calculus), *Krimidanta* (Dental caries), *Vataja jihwakantaka* (Fissured tongue), *Tundikeri* (Tonsillitis), *Kantashaluka* (Adenoids), *Gilayu/ Ekavrinda* (granular pharyngitis, Acute pharyngitis), *Mukha paka* (Mouth ulcers), *Puthi asya* (Halitosis). The decoction was used for *Kavala* and *Gandusha*.

General mode of local action of Kavala and Gandusha by using Kwatha Dravya

Kavala and *Gandusha* has many actions locally they are as follows^{[13][14]}

- Increases local defence mechanism.
- Enhancing both mechanical and chemical digestion of food that starts in the mouth.
- Removing of metabolic wastes (urea and uric acid).
- Soothing effect.
- Strengthening of muscles of oral cavity.

The action of *Kavala* or *Gandusha* (holding mouthful of liquid) exerts increased mechanical pressure inside the oral cavity. Therefore, this increased pressure stimulates chemoreceptors and mechanoreceptors (Pressoreceptors) (stretch reflex) that are present in the mouth. Once the pressoreceptors is stimulated, they send signals to salivary nuclei in the brain stem (pons and medulla). As a result, Para sympathetic nervous system activity increases and motor fibres in facial (VII) and glossopharyngeal (IX) nerve trigger dramatically increased output of saliva. The chemical components present in the drug also stimulate the chemical receptors present in the mouth to increase saliva production. An enzyme called lysosome present in saliva is bacteriostatic in action. It will not allow for the growth of pathogenic microorganisms in the oral cavity. Antibody IgA present in saliva also provide

protection against microorganisms. Thus, *Kavala* increases local defence mechanism.

The enzyme salivary amylase present in saliva and lingual lipase secreted by the lingual gland present at the dorsum of the tongue initiates digestion of carbohydrate and fats respectively. *Kavala* increases secretions of these enzymes. Excessive salivation, which mainly contains water, removes metabolic wastes from the oral cavity. Some of *Dravyas* used for *Kavala* like *Panchavalkala* produces soothing effect on lesions like ulcers thus prevents ulcers from physical and chemical injury. The act of *Gandusha* and *Kavala* gives proper exercise to the muscles of cheeks, tongue, lips and soft palate there by increasing the motor functions of these muscles.

General mode of systemic action of *Kavala* and *Gandusha* by using *Kwatha Dravya*

Mucosal layer inferior to the tongue (sublingual) is thin and vascular enough to allow the rapid absorption of the lipid soluble drugs into systemic circulation. A number of the drugs irritates the oral mucosa (by their chemical nature) and increases vascular permeability. Thus, a lively principle of *Dravya* gets absorption in circulation. Most of the *Dravyas* (*Kwatha*) given for *Kavala* are warm (*Sukhoshna*) so raised temperature causes the increased vascular permeability thereby enhancing systemic absorption of medicine.

Dashmoola Kwatha

Mukhshosha (Xerostomia /dry mouth) and *Kanthaghraha* (Vocal cord spasm)^[15]. *Dashamoola* is useful herbal combination of *Laghu panchamoola* i.e., *Gokshura* (*Tribulus terrestris*), *Shalaparni* (*Desmodium gangeticum*), *Prishniparni* (*Uraria picta*), *Kantakari* (*Solanum xanthocarpum*) and *Bruhati* (*Solanum indicum*) and *Bruhat panchamoola* i.e., *Bilva* (*Aegle marmelos*), *Agnimantha* (*Premna integrifolia*), *Shyonak* (*Oroxylum indicum*), *Gambhari* (*Gmelina arborea*) and *Patala* (*Stereospermum suaveolens*). *Laghupanchamoola* indicated for *Vata-Pitta* disorders and *Bruhat panchamoola* is indicated in *Vata-Kapha* disorders. Combination of both *Panchamoola* i.e., *Dashamoola* is indicated in *Vata* predominant *Tridoshaj* disorders. Combination of *Dashamoola* and some other herbs (*Kwathya Dravyas*) along with *Dashamoola* can be the ideal remedy for most disorders, that to by using different *Prakshep Dravyas*, different dosage form and by different mode of administration. *Dashamoola Kwatha* is found most effective on *Amajanya* (diseases originating in the body secondary to disturbances in the process of digestion), *Avrutavatajanya* (occlusion disease), *Santarpanottha* (nourishing disease), *Amapakwashya*

samuttha vyadhis (disease of gastric and intestinal origin).

***Kathphaladi Kwatha-Galghraha*(Throat spasm)^[16]**

Most of the drugs in *Kathphaladi Kwatha* are having *Katu* (pungent taste), *Tikta Rasa* (bitter taste), *Laghu* (lightness), *Ruksha guna* (dryness), *Ushna Veerya* (fiery potency), *Katu Vipaka* (bio-transformed pungent *rasa*) and *Vata Kaphahara* properties.^[17] All the above properties are very useful to remove the *Srotorodha* (obstructions in various channels of the body) and promote the expulsion of Vitiated *Doshas*. *Agni Deepana* action increases food intake and maintains *Samyaka Dhatu Parinama*, which is responsible for increasing body nutrition and immunity. Anti-inflammatory property of ingredients will reduce the inflammatory process in nose. Antibacterial activity arrests the secondary infection and prevents recurrence of the disease.

***Poonarnavadi Kwatha- Mukhpraptashotha* (oral cavity edema)^[18]**

Poonarnavadi Kwatha is an Ayurvedic formulation which is beneficial in the treatment of inflammatory problem. It is highly beneficial in the condition of *Shotha* (edema).

***Mahadrakshadi Kwatha- Mukhapak* (Stomatitis)^[19]**

Draksha (*Vitis vinifera* Linn), *Shwetchandan* (*Santalum album*), *Padmnakat* (*Prunus cerasoides*), *Nagarmotha* (*Cyperus scariosus*), *Kutaki* (*Picrorhiza kurrooa*), *Guduchi* (*Tinospora cordifolia*), *Amala* (*Phyllanthus emblica*), *Sughandabhala* (*Pavonia odorata*), *Khas* (*Chrysopogon zizanioides*), *Lodhra* (*Symplocos racemosa*), *Indrayava* (*Holarrhena antidyenterica*), *Pittapapada* (*Fumaria parviflora*), *Phalsa* (*Grewia asiatica*), *Priyanguphul* (*Aglaia elaeagnoides*), *Yavasak* (*Alathi pseudalhagi*), *Vasamul* (*Hemidesmus indicus*), *Mulethi* (*Glycyrrhiza glabra*), *Paravalpatti* (*Ichnocarpus frutescens*), *Chirayata* (*Swertia chirata*), *Dhaniya* (*Coriandrum sativum*). Ingredients in *Mahadrakshadi Kashayam* pacify *Vata* and *Pitta* Aggravation. It balances acid secretion within the stomach and reduces burning sensation. It supports digestive health and improves strength. It mainly acts on the shoulders, stomach, intestines, liver, head, neck, nose, etc. It acts as antacid, antipyretic, anti-inflammatory (appears in inflammatory bowel disease), carminative, antioxidant, adaptogenic, Alterative (tending to revive health), anti-ulcerogenic, carminative, cholagogue (promotes the discharge of bile), depurative (purifies blood), digestive stimulant, haematinic (increases hemoglobin levels), mild laxative, tonic.

Nidhigdhikadi Kwatha- Peenasa (Rhinitis)^[20]

Kanthakari (Solanum xanthocaroum), Sunthi (Zingiber officinale), Guduchi (Tinospora cordifolia), Pimpali (Piper longum).

Phytoconstituent found in *Kanthakari* is mainly solasonine. The whole plant generally contains coumarins, scopoline, scopoletin, esculin and esculetin. Carpesterol, glucoalkaloid solanocarpine, solamines, solasodine, solamargine, stigma sterol and campesterol are special phytoconstituent substances obtained from fruit extracts. The seeds contain solanocarpine and essential amino acids. These phytoconstituent helps in obtaining actions like anti-inflammatory, antibacterial, antimicrobial, analgesic, stimulant, appetizer, carminative, cardio stimulant, expectorant, demulcent and aphrodisiac. The antimicrobial, antibacterial and anti-inflammatory actions of *Kanthakari* help to act against different allergens. Hence it can effectively be used in allergic reactions.

Thorough chemical examination of ginger revealed that ginger contains more than 450 compounds. The major composition of ginger rhizomes is carbohydrates (50–70%), lipids (3–8%), terpenes, phenolic compounds, amino acids, raw fiber, ash, protein, phytosterols, vitamins, and minerals. Volatile terpenoidal constituents of *Zingiber officinale* include zingiberene, β -bisabolene, α -farnesene, α -curcumene, and β -sesquiphellandrene. Phenolic compounds include gingerol, paradols, and shogaol. Gingerols and shagols are responsible for spiciness of ginger. These gingerols and shogaol are found in higher quantities of up to 20–25%. Other compounds related to gingerol or shogaol (1–10%), which have been reported in the rhizome of ginger, include 6paradol, 1dehydrogingerdione, 6gingerdione and 10gingerdione, 4gingerdiol, 6gingerdiol, 8gingerdiol and 10gingerdiol. The characteristic odor and flavor of ginger are because a combination of volatile oils like shogaols and gingerols.^[21] Ginger is one of the components of *Nidhigdhikadi Kwatha* which also possess significant bioavailability enhancement activity. It's a strong effect on mucous membrane of the gastrointestinal tract. It regulates intestinal function and promotes absorption. Ginger when utilized in the dose of 10–30mg/kg body weight acts as bioenhancer. Pharmacological studies show that it dramatically enhanced the bioavailability of varied medicines especially antibiotics like amoxicillin, azithromycin, erythromycin, cephalixin, cefadroxil, and cloxacillin.^[22]

Seasonal allergies don't seem to be only culprits that keep people from enjoying the bloom of spring or the coolness of fall, but they'll be painful

and miserable altogether, sometimes even triggering mood disorders. The pollen and mold trigger an increase proinflammatory leukotrienes and prostanoids within the mucus membranes, and ushers in a military of mast cells and eosinophils. These players begin battle by degranulation and cytokine release, which necessitate more reinforcements. Clinically, the host of this battle experiences a runny, itchy nose, sneezing, watery eyes, congestion, fatigue, and sometimes a light fever. *Guduchi (Tinospora cordifolia)* a less well-known botanical that's immensely useful in managing the symptoms related to seasonal allergies is *Tinospora cordifolia*, referred to as *Guduchi*. Commonly utilized in Ayurvedic medicine, this plant possesses a formidable array of therapeutic properties including anti-diabetic, anti-periodic, anti-spasmodic, anti-inflammatory, anti-arthritis, anti-oxidant, anti-allergic, anti-microbial, anti-osteoporotic, anti-stress, anti-leprotic, anti-malarial, hepatoprotective, immunomodulatory and anti-neoplastic activities. These activities are possible for a variety of biological compounds including alkaloids, diterpenoid lactones, glycosides, steroids, sesquiterpenoids, phenols, aliphatic compounds and polysaccharides. A highly activated immune response is liable for most of the symptoms related to seasonal allergies and plenty of the compounds found in *Guduchi* have immunomodulatory effects. More specifically, they need been reported to spice up the phagocytic activity of macrophages, influence cytokine production, and activate immune effector cells, enhancing the immune response.

Pimpali (Piper longum) Piperine is that the major and active constituent of long pepper. The piperine content is 3–5% (on dry weight basis) in *Piper longum*. The fruit of *Piper longum* contains an oversized number of alkaloids and related compounds, the foremost abundant of which is piperine, methyl piperine, iperonaline, piperettine, pellitorine, piperlongumine, piperlonguminine, asarinine, piperundecalidine, refractomide A, pipericide, piperderidine, longamide and tetrahydropiperine, terahydro piperlongumine, dehydropiperonaline piperidine, pregumidiene, brachystamide, brachystamide-A, brachystine, terahydropiperlongumine, and trimethoxy cinnamoylpiperidine. Lignans Sesamin, pulvuatilol, fargesin, and others have also been isolated from the fruit of *Piper longum*. Volatile oil of the fruit *Piper longum* could be a complex mixture. Major components of oil are caryophyllene and pentadecane (both about 17.8%) and bisabolene (11%) together with volatile piperine. The other ingredients include thujine, terpinoline, pycymene, p-

methoxy acetophenone, and dihydrocarveol.^[23] Ayurvedic system of medication prescribes *Nidhigdhiyadi Kwatha* for the management of tastelessness (*Arochaka*) disturbed digestion (*Agnimandya* and *Amadosa*), diseases of nose (*Peenasa*) and upper respiratory tract (*Gala* and *Swasa Roga, Kasa*). *Nidhigdhiyadi Kwatha* acts primarily by its effect on stomach, liver, and pancreas. In the stomach, it increases the production of digestive juices and thereby stimulates digestion. The liver stimulates the function of the gallbladder to act as the gallbladder and increase the production of bile salts. *Nidhigdhiyadi Kwatha* also affects the functioning of the pancreas. In short, *Nidhigdhiyadi Kwatha* affects overall digestive system together with its curative effects on respiratory, urinary, immunity, skin, and metabolic systems of our body. Ayurvedic prescription aimed at reviving the disturbed *Tridoshas Vata, Pitta, Kapha*. It calms increased *Vata* and *Kappa*, increases *Pita*. It's pungent (*Katu*) taste, hot (*Ushna*) potency, light (*Laghu*) and dry (*Ruksha*) quality, and digestive (*Amapachaka*) therapeutic effect.^[24]

Trayodashanga Kwatha- Peenasa (Rhinitis)^[25]

Acharya Vagbhatta said *Peenasa (Dushta Pratishtyaya)* should be treated like *Yakshma*. Therefore, *Trayodashanga Kwatha* was selected here, which is described in *Bhaishajya Ratnavali* in the context of *Rajayakshma*. *Trayodashanga Kwatha* includes *Dashamula, Shunthi, Pippali* and *Dhanyaka*. Most of the ingredients in this *Yoga* have *Katu, Tikta, Kashaya Rasa, Laghu, Ruksha, Tikshna Guna, Katu Vipaka, Ushna Veerya, Deepana, Pachana, Shothahara, Sroto Shodhana, Kaphaghna, Jwarahara, Vatanulomana, Shulaprashamana* attributes. It also has antimicrobial, anti-inflammatory and immunostimulatory property^[26] *Dashamoola* is additionally accepted as *Shothahara Kashaya* by *Acharya Charak*. Hence *Trayodashanga Kwatha* will be used to manage *Dushta Pratishtyaya*. Because of these properties, it causes *Sampraprti Vighatana* and treats the disease. Again, sinusitis, inflammation of the sinus mucosa and *Acharya Charaka* has accepted *Dashamula* in *Shothahara Kashaya*. During this context *Trayodashanga Kwatha* is additionally indicated in *Pratishtyaya*. Here *Madhu* (honey) was selected as *Sahapana* of *Trayodashanga Kwatha*. *Acharya Sharangadhara* advised *Sahapana* on *Madhu* at *Kashaya* in *Vata Kaphaja Vikara*. Also, by the virtue of *Laghu, Ruksha Guna, Katu Vipaka, Tridoshashamaka, Lekhanakaraka, Chhedana, Yogavahi, and Sukshmamarganusari* properties.^[27] *Madhu* directly acts on the *Vikrita Kapha* besides being a vehicle for the *Aushadhi Dravya*. Most of the ingredients in *Trayodashanga Kwatha* are *Katu, Tikta Rasa Pradhan*.

There are *Laghu, Ruksha, Tikshna Guna Pradhana* and *Ushna Veerya, Katu Vipaka. Vatanulomana, Shothahara* and *Srotoshodhana* attributes. All these attributes are very useful for removing *Srotorodha* and facilitating the expulsion of damaged *Kapha* from the sinuses. *Trayodashanga Kwathas Deepana* and *Pachana* attributes trigger *Amapachana*. Proper formation of *Sara Dhatus* by *Amapachana* and *Dhatvagnideepana (Samyaka)* increases *Vyadhikshamatva* (immunity). Attributes such as *Vedana-sthapana, Kasahara, and Kanthya* provide symptom relief. The anti-inflammatory properties of the ingredients reduce the inflammatory process within the nose and paranasal sinuses. Antibacterial activity suppresses secondary infections and prevents the recurrence of the disease.

Pathyadi Kwatha- *Karnashool* (otalgia), *Suryaavarta* (tension type of headache), *Ardhambhedak* (migraine).^[28]

This formulation may be a multidrug combination and is indicated specially in *Shiroroga* in *Shrangdhara Samhita*.^[29] It contains 67% *Dravya*, including *Ushna Virya* (hot effect) and *Madhura Vipaka* (only after digestion effect), 43% of the drug is *Tridoshaghna* (three *Dosha* calming). So, by all virtues cited above, it normalizes the vitiated *Vata-Kapha Dosha*. Additionally, *Pathyadi* decoction contains drugs like as *Guduchi [Tinospora cordifolia (willd.)], Nimba [Azadiracta indica Linn.], and Haridra [Curcuma longa Linn.]* possessing *Raktaprasadaka* (blood purifier) property which will normalize vitiated *Rakta Dhātu* (oxygen carrying capacity of blood). Drugs like *Guduchi [Tinospora cordifolia]* and *Amalaki [Embelica officinalis Gaertn]* have the *Dipana* attribute. These drugs will normalize *Ama* (by product toxins after digestion), as *Ama* gets decreased it should subside *Ajirna* (Indigestion). It's reported that almost all of the drugs of *Pathyadi* decoction also possess analgesic, anti-inflammatory, a nervine tonic property which could have helped to reduce pain.

CONCLUSION

With all above facts it can be concluded that Ayurveda possesses quality approach towards alternative management of ENT disorders by using decoction in the form of oral drugs, topical drugs as well as cleaning procedures. The clinico-pharmacological action of decoction in ENT diseases are being revalidated through various in vitro and clinical studies. These limitations must be addressed in forthcoming studies to increase reliability and validity of Ayurvedic management of ENT disorder by using decoction.

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