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REVIEW ARTICLE OPEN ACCESS

THERAPEUTIC POTENTIAL OF *GUDADYAVALEHA* IN THE MANAGEMENT OF BRONCHIAL ASTHMA: A REVIEW

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ABSTRACT:

Asthma is a chronic disease, characterized by reversible airway obstruction, airway inflammation and hyper-reactivity. No ideal preventive measure has yet been found. *Gudadyavaleha* is an *Ayurvedic* polyherbal formulation which is explained in the context of *shwasa (Dysponea) Prakaran* in *Vaidya Chintamani*.This review was carried out to get thorough idea related to its composition, method of preparation, Properties of each ingredient in the preparation and its mode of action and therapeutic uses. *Guda* (Jaggery), *Dadima phala twak* (*Punica granatum*), *Draksha* (*Vitis vinifera*), *Pippali* (*Piper longum Linn*.), *Sunthi* (*Zingiber officinale*), *Matulunga* (*Citrus medica*), *Madhu* (Honey) are the ingredients of *Gudadyavaleha*. This review examines the potential role of *Gudadyavaleha* in asthma management, exploring its pharmacological properties, mechanisms of action, and existing evidence from both traditional knowledge and contemporary research and evidence supporting the anti-asthmatic potential. On the basis of the therapeutic actions of drugs in the formulation and present evidences it can be suggested that *Gudayavaleha* has therapeutic potential in the management of *shwas roga* (bronchial asthma).

Keywords: *Ayurveda*, Bronchial Asthma, *Gudadyavaleha*, *Shwas*

INTRODUCTION

Asthma is a chronic inflammatory condition of the air passages, characterized by repeated instances of airflow blockage due to edema, bronchospasm, and increased mucus production. There is a wide range in the frequency and severity of the symptoms, but uncontrolled asthma and acute exacerbations can lead to respiratory failure and death.[1] The etiology of asthma is multifactorial; genetic, epigenetic, developmental and environmental factors play a role, as do the interactions between them.[2]

Disease Prevalence

Recent data indicates that approximately 14% of children worldwide exhibit symptoms of asthma, with notable regional disparities in India regarding childhood asthma prevalence.[3] In severe cases of bronchial asthma, modern research recommends anti-allergic, bronchodilators, steroids, O_2 supplementation, and assistive breathing. While these interventions alleviate bronchial asthma episodes, they often lead to increased reliance on medication over time, creating a cycle of dependency. Bronchial asthma is having similarities with the *Tamaka Shwas* (EA-4.5) which is described as *Yapya* (Palliable) [4]and *Kastasadhya*[5] (to be accomplished with difficulty or toilsome), so longer period of time is required for its treatment.

Taking into account the significant burden of asthma, it is crucially important to find preventive measures. Strategies targeting asthma prevention can be primary (e.g. infants at high risk for asthma) or secondary, dealing with children who have developed allergic sensitization or the first manifestations of allergic diseases (e.g. eczema or wheezing).[6]

Although lots of formulations available to manage and treat the disease *Shwasa Roga* in *Ayurveda*, but there is always need to develop such formulation those will be economical and safe for long term use in the patients of *Shwasa Roga*. "*Gudadyavaleha*" should be economical and easily available so anyone can use for a longer period to get rid from the disease.

Material & Methods

Data for literature review was collected through *Ayurveda Samhitas* (classical texts), *Nighantus* (lexicons), *Ayurvedic* Formulary of India (AFI), and *Ayurvedic* Pharmacopoeia of India (API). The contemporary review was done from modern textbooks and peer-reviewed scientific research journals on PubMed, Scopus, Elsevier, and other relevant databases. Keywords used for database analysis were "*Shwas*," "*Ayurveda*," "*Tamak Shwas*", "*Gudadyavaleha*", "Bronchial Asthma", "*Guda", "Dadim", "Draksha", "Pippali", "Matulunga", "Madhu*", "Research studies" terminologies of "each drug" "botanical" and other specific Latin or Sanskrit names of specific Millets. database, and research published in scientific journals. Further, each ingredient was evaluated for their *Ayurvedic* property (pharmacodynamic attributes) related to the probable mode of action in bronchial asthma.

Method of Preparation of *Gudadyavaleha*

First of all, make a fine powder of *Guda*, *Dadima phala twak*, *Draksha*, *Pippali*, *Sunthi*. After that fine powder of drugs mixed with *matulung swaras*, *Madhu* and then administered.[7]

Results

Gudadyavaleha is a compound herbal *avaleha* formulation containing 5 herbs and *Guda* (Jaggery) and *Madhu* (Honey) as shown in Table No.-1. The method of preparation of *Gudayavaleha* is well explained in *Vaidya Chintamani*.[8] The therapeutic dose of *Gudadyavaleha* is mentioned as 12g/day advised with warm milk or warm water as adjuvant.

The *rasa* (taste), *guna* (attribute), *veerya* (potency), *vipaka* (bio transform), and *doshaghnata* (effect on *doshas*) of *Gudadyavaleha* are well depicted in Table 1. Out of 5 herbs in *Gudadyavaleha*, there is a predominance of *Madhura* (sweet), *Kashaya* (astringent) *Rasa*, whereas *Katu* (pungent), and *Amla Rasa* (sour taste) was found in minor percentage. However, *Lavana Rasa* (salt) was absent in all herbs of *Gudadyavaleha* [Figure 1]. Among *Guna* (attribute) of *Gudadyavaleha* herbs, majority herbs are *Snigdha* (unctous), *Guru* (heavy to digest) *Laghu* (easy to digest), *Mridu* (weak) in nature [Figure 2]. In terms of *Veerya* (potency) of herbs of *Gudadyavaleha* majority are *Ushna Veerya* (hot potency) [Figure 3]. The overall *Vipaka* (biotransformative phase of *Rasa*) of *Gudyavaleha* herbs is majorly *Madhura* (sweet) in *Vipaka* (biotransformative phase of *Rasa*). However, only one herb is found to be *Amla* (sour) *Vipaka* (biotransformative phase of Rasa) in nature and 1 drug is found to be *Katu Vipaka* [Figure 4].

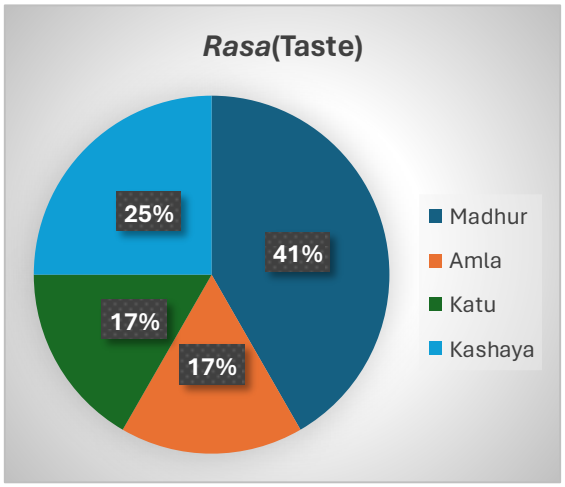

Figure 1: Predominance of Rasa (Taste) in Herbal Ingredients of Gudadyavaleh

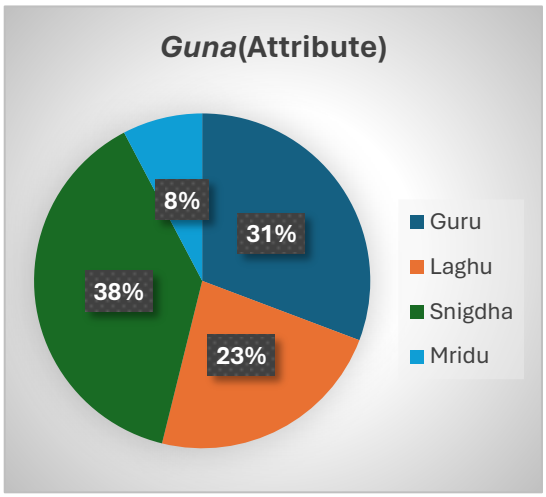

Figure 2: Predominance of Guna (Attribute) in Herbal Ingredients of Gudadyavaleh

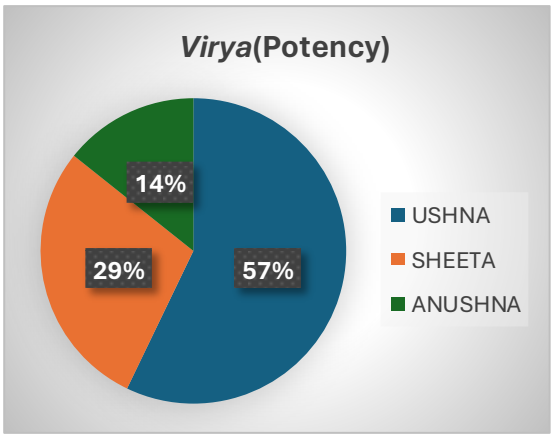

Figure 3: Predominance of Virya (Potency) in Herbal Ingredients of Gudadyavaleh

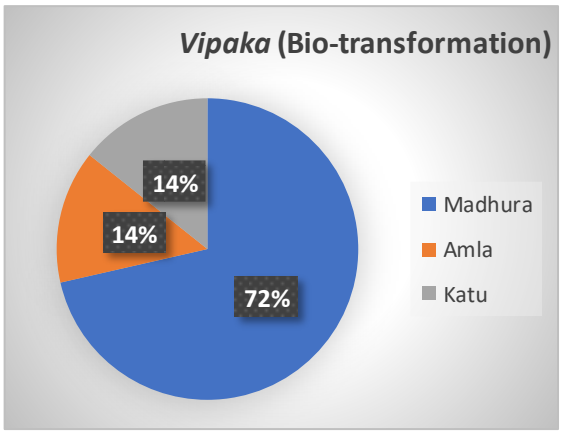

Figure 4: Predominance of Vipaka(Bio-transformation) in Herbal Ingredients of Gudadyavaleh

Table 1: Pharmacodynamic attributes of *Gudadyavaleh* [9]

S. N.	Dravya (Plant)	Quantity	Rasa (Taste)	Guna (Attribute)	Virya (Potency)	Vipaka (Biotransformation)	Karma (Action)
1.	***Guda* (Jaggery)**	1 Part	*Madhura* (sweet)	*Guru* (heaviness) *Snigdha* (unctuousness)	*Ushna* (hotness)	*Madhura* (sweet)	-
2.	***Dadima phala twak*** *(Punica granatum Peel)*	1 Part	*Madhura* (sweet) *Amla* (sour) *Kashaya* (astringent)	*Laghu* (lightness), Snigdha (unctuousness)	*Anushna*	*Madhura* (sweet)	*Tridoshhara*, *Hridya* (cardiotonic), *Sukrala* (semenogague) ,*Grahi* (absorptive)
3.	***Draksha* (*Vitis vinifera)***	1 Part	*Madhura* (sweet)	*Snigdha* (unctuousness) *Guru (heaviness) Mridu (softness)*	Sheeta (coldness)	*Madhura* (sweet)	*Vatapittahara*
4.	***Pippali***	1 Part	*Katu*	*Laghu*	*Ushna*	*Katu*	*Vata* and

	(Piper longum)		(*pungent*)	*(lightness) Ruksha (dryness)*	*(hotness)*	(pungent)	*kaphahara*
5.	***Sunthi*** *(Zingiber officinale)*	1 Part	*Katu (pungent)*	*Guru (heaviness) Snigdh (unctuousness)*	*Ushna* (hotness)	*Madhura* (sweet)	*Vatakaphahara*
6.	***Matulunga*** *(Citrus medica)*	Q.S.	*Amla* (sour) *Madhura* (sweet)	*Laghu (lightness) Snigdha (unctuousness)*	*Ushna* (hotness)	*Amla* (sour)	*Vatakaphadosa hara*
7.	***Madhu (****Honey****)***	Q.S.	*Madhura* (sweet) *Kashaya* (astringent)	*Guru, (heaviness) Ruksha (dryness)*	*Sheeta* (coldness)	*Madhura* (sweet)	*Kaphaghna, Raktapittanashaka Shwasa, Kasa, Pittaraktavikara, Trishna, Krimi, Prameha, Atisara, Daha*

Table No. -2 Evidences of Pharmacological Action of Drugs

S.N.	Plant Name	Botanical Name	Useful Part	Chemical Composition	Pharmacological Action
1.	*Guda*	*Saccharum officinarum*	Whole	Calcium, magnesium, potassium, phosphorus, sodium, iron, manganese, zinc, copper and chloride, vitamin A, vitamin B1, vitamin B2, vitamin B5, vitamin B6, vitamin C, vitamin D2, vitamin E1[10]	Anti-oxidant [11] Anti-Inflammatory Effect [12] Immunomodulatory [13] Lung Protective Effect [14] Anti -Allergic Effect [15]
2.	*Dadima phala twak*	*Punica granatum Linn*.	Pericarp	Punicalin, punicalagine, punicalagine, grantine B, gallic acid, granatine A,	Anti-Asthmatic Activity [17]Anti-Histaminic Activity [18]

				ellagic acid, sitosterol, ursolic acid [16]	Anti-inflammatory[19] Bronchodilator Activity [20] Effect on Lung Function [21]
3.	*Draksha* [22]	*Vitis vinifera*	Fruit	Catechin, epicatechin, betasitosterol, ergosterol, jasmonic acid, glucose, fructose, galactose, mannose, arabinose, rhamnose, tannic acid, mallic acids	Anti-asthmatic [23]
4.	*Pippali*	*Piper longum*	Fruit	Pipperin, Pippalartin, pipperleguminin, sterols, glycosides, aromatic oil, piperlongumine, piplartine and dihydrostigmasterol, sesamin and pipalestrol.	Mast cell Stabilization property [24] Immunomodulatory, Antiasthamatic [25] Bioavailability Enhancers [26]
5.	*Sunthi*	*Zingiber officinale*	Rhizome	Sesquiterpene hydrocarbons (50% or more), sesquiterpene alcohols, monoterpenoids and associated compounds, esters of acetic and caprylic acids and a trace of phenol.[27]	Anti-inflammatory and antioxidant effect[28] Bronchodilator Activity [29]
6.	*Matulunga*	*Citrus medica*	Fruit	flavanones (naringin, narirutin, hesperidin, etc.), flavones (limocitrol 3-*alpha*-l-arabinopyranosyl-(1->3)-galactoside, scutellarein 4'-methyl ether 7-glucoside, vitexin, diosmin, etc.), polymethoxyflavones (nobiletin, tangeretin, 5-demethylnobiletin, etc.), anthocyanins (cyanidin 3-glucoside, cyanidin 3-(6''-malonyl) glucoside, and	Anti-inflammatory[30] Anti-oxidant[31]

				peonidin 3-(6''-malonyl) glucoside), flavonols (quercetin, rutin, and kaempferol, etc.), and phenolic acids, such as caffeic acid, chlorogenic acid, salicylic acid, gallic acid, benzoic acid, *trans*-cinnamic acid, *p*-coumaric acid, and *trans*-ferulic acid.	
7.	*Madhu*				Inhalation of honey reduces airway inflammation and chronic asthma[32] Immunomodulatory effect[33] Anti-inflammatory Effect[34] Anti-oxidant Activity[35]

1.Guda /Jaggery/ *Saccharum officinarum*

Anti- oxidant Effect

Nayaka et al. reported the effect of jaggery on free radical-induced damage of erythrocytes, NIH3T3 fibroblast cells, and DNA damage. In terms of antioxidant capacity, jaggery outperformed in the scavenging experiment (half-maximum effective concentration: 7.81 µg/mL) and reducing assay, exhibiting 70% DNA protecting activity.[36] In preclinical in vivo research has demonstrated the antioxidant properties of jaggery. [37,38]

Anti-Inflammatory Effect

In the carrageenan-induced pleurisy test, the cotton pellet granuloma assay, the peritoneal capillary permeability test in mice, and both, the oral administration of this mixture demonstrated anti-inflammatory activity.[39]

Lung Protective Effect

Jaggery reduced the coal-induced histological lesions and hydroxyproline contents of lungs. These findings along with the preventive action of jaggery on smoke-induced lung lesions suggest the potential of jaggery as protective agent for workers in dusty and smoky environments.[40] Reduction in fibrotic lesions was observed after 8 months of feeding jaggery. These findings support the protective role of jaggery.[41]

Anti -Allergic Effect

Jaggery has anti-allergy qualities that assist to control asthma-related issues and relieve

stress. It also includes iron, which helps to prevent anaemia.[42]

2.Dadima / Punica granatum Linn.

Anti-Asthmatic Activity

A study by Oliveira et al. revealed that the ethanolic extract of *Punica granatum* represents a beneficial biological activity in an in vivo model of asthma.[43]

Anti-Histaminic Activity

Pomegranate encapsulated by microparticles inhibits asthma symptoms, whereas pomegranate flower buds act as anti-histaminic and pomegranate juice represents anti-oxidant properties essential in treating asthma.[44]

Effect on Neutrophils & Eosinophils

Rogerio et al. found that ellagic acid present in *Punica Granatum* reduced the number of eosinophils and neutrophils.[45] Another study also documented that ellagic acid accelerates airway clearance by reducing total leukocytes and eosinophils.[46]

Anti-inflammatory Effect

Pomegranate extract suppresses expression of pro-inflammatory cytokines in human cells by inhibiting nuclear factor (NF)-κB and mitogen-activated protein (MAP) kinase.[47] These findings supported the alternative/complementary use of pomegranate in treatment of lung inflammation.[48]

Effect on Lung Function

Pomegranate extracts significantly improved forced expiratory flow 25-75% (FEF25-75%), FEV1/FVC ratio, and FEV1 in the intervention group. It seems that pomegranate extract can improve lung function parameters and IL-35 expression in mild and moderate allergic asthma.[49]

Anti-oxidant Effect

Methanol extract of pomegranate peel showed the highest antioxidant activity on lipid peroxidation, hydroxyl radical scavenging activity, and human low-density lipoprotein (LDL) oxidation.[50] Pomegranate peel extract has significant antioxidant activity to combat autoxidation-induced pathologies or diseases.[51]

3.Draksha/ Vitis vinifera

Anti- Asthmatic Effect

Vitis vinifera in allergic asthma inhibit cellular response and subsequent production of inflammatory cytokines, inhibition of histamine release, improving lung functioning by counteracting allergen induced bronchial hyper-responsiveness, and blocking the release of inflammatory cellular infiltration into airways, these confirm its use as anti-asthmatic drug.[52]

Anti-Inflammatory Effect

Extract of *Vitis vinifera* decreased carrageenan-induced rat paw oedema in inflammatory exudates with histopathological changes, decreased density of TNF-α immunoreactive cells, inhibited vascular permeability induced by acetic acid and increased nitric oxide production in the rat air pouch. Extracts of *vitis vinifera* restored reduced glutathione level and increased superoxide dismutase activity and active against COX-I and COX-II enzymes inhibition.[53]

4.Pippali / Piper longum

Immunomodulatory activity

Alcohol extract of *Piper longum* when evaluated in mice, resulted in increment of the leukocyte count, bone marrow cellularity, αesterase positive cells and total antibody production. These results suggest that immunomodulatory activity of *Piper longum* may be due to the combined action of humoral and cell-mediated immune responses.[54]

Bioavailability Enhancers

Due to its facile partitioning and increased permeability, piperine has been demonstrated to improve the bioavailability of structurally and therapeutically diverse medicines, potentially through influencing membrane dynamics. [55,56,57]

Anti - asthmatic activity

An extract of the *piper longum* fruits in milk reduced passive cutaneous anaphylaxis in rats and protected guinea pigs against antigen-induced bronchospasm.[58] Extract is active against type I allergic disorder due to its ability to prevent the release of allergic mediators from mast cells.[59] Piper longum fruit extract at the dose of 200 mg/kg, show bronchorelaxation with 83% preventive action in histamine-induced bronchospasm model of Guinea pig. Petroleum ether extract of P. longum possess substantial anti-asthmatic activity.[60]

Anti - inflammatory activity

A marked anti-inflammatory activity of a decoction of Piper longum fruits has been reported using carrageenan induced rat oedema.[61] In another study, it was investigated that chloroform extract of Piper longum inhibited the adhesion of neutrophils to TNF-α stimulated endothelial cells, TNF-α induced expression of nuclear transcription factor-kB (NF-kB), along with the inhibition of ICAM-1, VCAM-1 and E-selectin. The extract further repressed microsomal lipid peroxidation, suggesting that the inhibition of CAM and NF-kB may be mediated through inhibition of free radical generation in the form of lipid peroxidation.[62]

Anti-oxidant Activity

The action of Piper longum extract have been confirmed using isoproterenol induced oxidative stress, Adriamycin induced oxidative stress and in monosodium glutamate induced stress.[63] P. longum extract also produces synergistic anti-oxidant action when administered with other herbs.[64]

5.Sunthi / Zingiber officinale

Anti-Oxidative Effect

6-Shagaol has exhibited the most potent antioxidant and anti-inflammatory properties in Ginger which can be attributed to the presence of alpha, beta unsaturated Ketone moiety. Particularly fresh Ginger methanol extract of drug was found to have better antioxidant action then the n-hexane extract.[65]

Bronchodilator Activity

An animal study reveals that Ginger induced significant and rapid relaxation in the isolated human airway smooth muscle. In guinea pig and human tracheas models, 6-gingerol, 8-gingerol, and 6-shogaol could lead to the rapid relaxation

of precontracted airway smooth muscle. The nebulization of 8-gingerol attenuated airway resistance via a reduction in Ca2+ influx in mice.[66]

Anti-inflammatory Activity

In mice with ovalbumin-induced allergic asthma, ginger reduced allergic airway inflammation and inhibited Th2-mediated immune responses to improve allergic asthma.[67] Ginger's immunosuppressive effects on allergic asthma and Th2 type cytokine protein levels (IL-4 and IL-5) may have contributed to a decrease in serum IgE levels.[68] Ginger is known to inhibit cyclooxygenase-1 and cyclooxygenase-2, which suppresses prostaglandin formation. It also inhibits 5-lipooxygenase, which lowers leukotriene production.[69]

6.*Matulunga/Citrus medica*

Anti-inflammatory activity

Rats that received an oral ethyl acetate extract of Citrus medica (EtCM) peels had a significant reduction in paw oedema caused by carrageenan. Flavonoids and phenolic acids are detected by phytochemical screening in the EtCM.[70] Flavonoids with potent anti-inflammatory properties, including hesperidin, naringin, and apigenin, are abundant in citrus medica.[71]

Antioxidants Effect

Punica granatum extract forms phosphomolybdenum complex, which demonstrates a strong antioxidant ability. Furthermore, a non-enzymatic superoxide producing system (NADH/phenaxine methosulfate) was used to measure the superoxide radical scavenging activity. Citrus medica's antioxidant effectiveness is unquestionably established by the evidence from the in vitro models.[72]

The essential oil of *Citrus limon* (lemon) has demonstrated antioxidant properties, which help prevent lipoperoxidation. Additionally, it has an antinociceptive effect mediated through central inhibitory mechanisms, as observed in naloxone-treated Swiss albino mice [19]. This suggests a role in altering motor coordination. Lemon essential oil also exhibits significant protective effects against oxidative stress in the hippocampus of mice during neurodegenerative diseases [20]. Furthermore, continuous application of lemon essential oil solubilized in grape seed oil may be beneficial in preventing lifestyle-related skin diseases by regulating oxidative stress balance.

7.*Madhu/* Honey

Immunomodulatory effect:

A significant 22-amino acid fragment included in honey bee venom, mast cell degranulating peptide (MCDP) has significant immunological and pharmacological and anti-inflammatory properties, especially at low doses, it also has a significant impact on mast cell degranulation and histamine release.[73]

Anti-inflammatory Effect

Researchers speculate that the antimicrobial qualities of the honey may possibly have a secondary bearing on this result.[74]

Anti-oxidant Activity

The antibacterial properties of the honey may be attributed to its phenolic components.[75]

Discussion

Gudadyavaleha is a polyherbal *Ayurvedic* preparation mainly used for the treatment of *shwasa roga* is described in *Vaidya Chintamani*. The main treatment principle of *shwas* is *vatanulomana*, *kapha vata shaman, ama pachana*, *agnivardhan and srotoshodhan* and use of *kasahara* and *shwasahara* drugs and *naimitik rasayan* (Immuno potentiating drug).

Gudadyavaleha have *madhur, kashaya rasa*, *snigdha* and *guru guna*, *ushna virya* (hot potency) and *madhur vipaka* predominantly; decrease vata and *kapha* dosha. *Sunthi and pippali are Katurasa* drugs having *Deepana, Pachana, Ruchikara, Shodhana*, *Sritansi Vivrunoti* (*Prasaryati Srotansi-Arundatta*), *Kaphaghna* properties.[76] The *virya* (potency) of this drug is *ushna* (hot), while that of *vata* is *sheeta guna* (cold in character). *Ushna virya* is *ashupaki*, pacifies *kapha* and *vata dosha* and promotes *sweda* [77] thus helps in digestion of *ama*, acts as exothermic, & increases basal metabolic rate. Elevated metabolic rate helps in fast destruction of cell debris and clearing the micro channels. As the micro channels are cleared, the *vata* becomes *anuloma*. All the drugs have the quality to normalize or suppress the vitiated *vata* dosha by *ushna virya* (hot potency). *Agnimandya* (diminished digestion power) is corrected by *pippali*. *Strotas* vitiated are *pranavahasrotas*, which are corrected all the drugs as they, Reduce Expiratory dysponea and decrease cough. *Strotodushti* (The mechanism of manifestation of diseases) is *sanga* (occlusion), which relieved *kapha dosha*, there by normalizing *kapha dosha*. The *Virya* (potency) of this drug is Ushna (hot), by the *ushna* (hot) properties of the drug and *shwasahara* properties. They help in Reducing inflammation of the bronchioles.

By virtue of *katu rasa*, *ushna virya*, *laghu tikshna*, and *ruksha* qualities, as well as *ushna virya*, *snigdha guna* of *sita*, the medications may have the ability to alleviate *kapha*. Therefore, the *kapha* alleviating property of drug aid in the breakdown of the *Srotorodha* and the digestion of *ama*. *Ruksha guna* of *madhu* and *pippali* aids in absorbing excess secretion, which in turn aids in clearing obstructions brought on by thick plugs of mucus. Each of these medications reduces expiratory dysponea and removes the vitiated *pranavaha srotas*. *Ushna* (hot) and *shwasahara* qualities of the medicine relieve *sanga* (occlusion) type *srotodusti* (the mechanism of manifestation of disorders). They lessen bronchiole inflammation. As shown in Table No.- 2 all drugs have immune-modulatory, bronchodilator, anti-inflammatory, and mast cell-stabilizing property. These qualities of medications strengthen the respiratory system and lessen bronchial lumen inflammation. These medications reduce the symptoms of

asthma and boost immunity while balancing the vitiated *Pitta, Kapha, and Vata doshas*. Thus, *Gudadyavaleha* is used in *tamaka shwas*. In emergency conditions, *gudadyavaleha* are used with allopathic medicine which give excellent response in management of childhood asthma because these drugs have no relevant side effect.

The primary rationales for the actions are as follows*:*

The *dosha-prashamana* effect (*shunthi, pippali*) influences the two primary Doshas that lead to Samprapti, namely Vata and Kapha.

• *Ama* (free radicals) is digested by (*shunthi, pippali*)- d*eepana-pachana* karma

• The *Vatanulomana* property (*shunthi*, *pippali*) keeps *vata* flowing normally.

• Of all the substances, *shwasa*, *kasa*, and *shothahara prabhava* affect the symptoms.

• *Srotorodha* is eliminated from the *pranavaha* and *rasavaha srotasa* by *srotorodhnivarana prabhava* (s*hunthi*, *maricha*).

- *Paachan* and *ruchikar – Dadim, Draksha*

Conclusions

The present review reveals that the *Gudayavaleha* is indicated in *shwas roga* (bronchial asthma) in *Vaidhya Chintamani*. The therapeutic dose of *Gudadyavaleha* is mentioned as 12g/day advised with warm milk or warm water as adjuvant.The pharmacological, clinical and experimental studies also proved that the ingredients of this formulation possess anti-asthmatic, antioxidant, immunomodulatory, and anti-inflammatory action, lung protective and bronchodilator activity. On the basis of the actions of drug in the formulation and present findings of different studies it can be suggested *gudayavaleha* has the potential to help in the management of *shwas roga* (bronchial asthma), which can be used as an effective drug in place of modern medicine in mild asthma or along with contemporary medicine in Moderate or severe asthma. More scientific data in the form of high-quality research studies is needed to evaluate the efficacy of *Guadayavaleha*.

The present review reveals that the Nishakathakadi kashaya

is indicated, as a Pramehahara (anti-diabetic) in classics.

Modern in vivo and in vitro studies also proved that the

ingredients of this formulation possess anti-diabetic,

antioxidant, immunomodulatory, and anti-inflammatory

action. The present findings prove that the Nishakathakadi

kashaya possesses potential for the management of T1DM

and future clinical studies may provide the evidences.

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