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Pharmacological Action of *Kankasava* in Bronchial Asthma Based on Practical Experience: A Review

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ABSTRACT:

Ayurveda is among the most important systems of Indian medicine, and as we all know, it is a science of life. After much research, observations, experiments, thoughts, trials, and judgements, the ancient sages developed several types of Ayurvedic remedies. Ayurveda provides us with this health expertise. As opposed to many ailments that may be related to contemporary man's lifestyle, asthma is an old sickness. Bronchial Asthma is caused by a combination of factors. The illness is linked to geographical location, environmental, racial, and behavioral and lifestyle variables. *Tamaka Shwasa* is a condition described in Ayurvedic literature that, based on clinical signs, is quite similar to bronchial asthma. According to conventional medical science, there is no treatment for asthma. Ayurvedic medicines have the potential to be a viable and successful therapy option for bronchial asthma. Ayurvedic medications are utilized for illness treatment all around the globe, thus people all around the globe may have trust in them based on scientific proof. The current study was a review to determine the effectiveness of *Kanakasava* on *Tamaka Shwasa* (bronchial asthma). *Kanakasava* is a composition that has been used for thousands of years by Ayurvedic physicians to alleviate the symptoms of *Tamaka Sh*wasa.

Keywords: *Tamaka Shwasa*, Bronchial asthma, *Kanakasava*

INTRODUCTION

Bronchial asthma is a chronic inflammatory condition in the airways, defined by bronchial hyperreactivity and a varying degree of blockage of the airway, which occurs periodically at night or in the earlies' hours as cough, wheezing, dyspnea and shortness.[1] Asthma prevalence has steadily increased in Western countries over the last century, and it is also increasing in developing countries.[2] Recent studies in India found varying prevalence rates ranging from 0.9 to 15.7 percent in various age groups.[3] In the past decade, the occurrences of asthma and asthma-related mortality have increased phenomenally due to

urbanization as well as reduced air quality.[4] Airway obstruction in bronchial asthma is generally induced by four mechanisms: bronchial smooth muscles, airway edema, bronchial plugging, and irreversible lung change.[5] Even though asthma death rates globally have dropped significantly in the last 25 years, there are no current therapy regimes to cure asthma and an increase in prevalence will continue to exacerbate the burden of asthma.[6] 6 Asthma exposure (such as home dust, mites, animal hair, cocks, pollen, or mold) and occupational irritants are common risk factors.[7]

Asthma management is based on the use of drugs that reverse the bronchial blockage and reduce inflammation in the airways. The structural modifications of airway walls, termed as a restructuring process, might result in uncontrolled inflammation which can lead to fixed airflow blockage and worse clinical outcomes.[8] The contemporary therapy now in place comprises preventative drugs like as inhaled and oral steroids, agonists with long-acting β, leukotriene antagonists, theophylline's, and rescue drugs, including oral or parenteral corticosteroids, amongst others. Although anti-asthmatic therapy is adequately adhered to and completed, many patients are not managed or regulated, and drug withdrawal leads to symptoms reemerging within a short period.[9] In view of the possible adverse effects during this therapy, it is important to examine the conventional system of drugs to reverse the inflammatory process and to create long-lasting relief.

Ayurveda Perspective:

In Ayurveda Samhita, diseases characterized by trouble breathing are referred to as *Shwasa Roga*, and *Tamaka Shwasa* is one of five forms of *Shwasa Roga* with symptoms comparable to bronchial asthma.[10] *Tamaka Swasa* is a *Vata-Kapha Dosha* prevalent ailment that affects *Pranavaha Srotas*. *Vata* penetrates the conduits (of vital breath), afflicts the neck and head, and promotes *Kapha* (phlegm) to create *Margavarodha* by causing bronchial constriction.

Signs & Symptoms of Bronchial Asthma:[11]

1) *Ghurghuraka* (wheezing or murmuring sound).
2) Extremely rapid dyspnea that is extremely dangerous to one's life.
3) As a result of acute spasms, the patient develops tremors, coughs, and becomes immobile.
4) The patient faints repeatedly while coughing.
5) As the phlegm does not drain, he becomes more agitated.
6) The patient feels alleviated (of restlessness) for a short period of time after the phlegm is expelled.
7) The patient's throat is obstructed, preventing him from speaking. Allow yourself to express yourself freely.
8) The patient is unable to sleep. He suffers from dyspnea while lying down (for sleep) since Vayu affects the side of his chest in such position. However, he is alleviated of the pain in his sitting posture.
9) The patient develops a preference for hot items.
10) The patient's eyeballs become visible (project outside).
11)Excessive perspiration occurs on his brow, and he becomes agitated;
12)The patient's mouth regularly becomes dry.
13)The patients experience frequent bouts of dyspnea.
14)The attack worsens when clouds arise in the sky, he is exposed to water (Humidity), and cold when the easterly wind blows, and he resorts to *Kapha* aggravating foods and regimens.

Kanakasava is a traditional Ayurvedic formulation from India that contains *Datura (Datura metel)*, *Vasaca (Adhatoda vasica)*, *Dhataki (Woodfordia fruticosa)*, and Grape (*Vitis vinifera*) extracts as major constituents and is used to treat pulmonary diseases such as coughing, difficulty breathing, and asthma.

MATERIALS AND METHODS

Kanakasava is a polyherbal compound described in the *Hikka Shawas Adhayay* of *Bhesjayratnawali*.
Contents of *Kankasava:* (Table 1) [12]

Method of Preparation:[13]

First, dry the *Dhatura*, *Vasa*, and *Kantakari* along with the liquids. Make them distinct. All compounds except *Dhatkipushp*, *Mahuapushp*, and *Draksha* should yawn. For the first 24 hours, fill two large fresh pitchers with water. Keep a pad of husk, straw, coconut, etc. in the bottom of the pitcher to support it in the vacuum house. Fill it with 12-12 litres of water once again. After that, add 5-6 kg of jaggery to each pitcher and well mix them. Put all of the following components in half of each pitcher, mix thoroughly, and write the date on that pitcher after printing the face. Test the concordance after 25 to 30 days. The sound of the pitcher's fermentation will not originate from the exterior of the pitcher. When a blazing matchstick is carried within the pitcher, it should remain lit. If there is an intoxicating environment within the house, the infusion is

ready, and it should be identified as such. When this occurs, thoroughly mix the aforementioned infusion with your hands again, then filter it with a towel and chill it. Wash, clean, and dry the same pitcher, then replace the filtered *Kanakasava* in it and shut the opening.

Pharmacological action of drugs:

1. ***Dhatura***[14] **–** *Jwarnashak, Kusthnashak, Yukka- Pippilika nashak, Vrannashak, Khphghan, Vishanashak, Vatakarka, Kandughan, Krimighan.*
2. ***Vasa***[15] **–** *Kaphghan, Pittaghan, Hridya, Trishna-Sawas-Kasha-Jwar-Chhardi-Parmeha-Kustha-Kshaya Nashak, Swarya.*
3. ***Mahua***[16] **–** *Guru, Bringhankarka, Bala vriddhi-kar, Sukra vriddhi-kar, Vaata-Pittaghan, Trishna-Daha-Raktvikara- Swas-Kshaya Nashak.*
4. ***Pippali***[17] **–** *Deepni, Vrishya, Rasyana, Swas-Kasha-Udara-Jwar nashak, Kustha-Parmeha-Gulma-Arsh-Pliha-Soola nashak*
5. ***Kantkari***[18] **–** *Deepna, Pachan, Kasha-Swas-Jwar-Kapha-Vaat nashak, Peenas-Krimi-Hriddroga nashak*
6. ***Nagakeshra***[19] **–** *Aampachak, Jwar-Kandu-Trisha-Chhardi-Hrilassh nashak, Swedaghan, Durgand nashak, Kusth-Visharp-Visha nashak, Kaph-Pittaghan.*
7. ***Sunthi***[20] **–** *Ruchikarka, Aamvatanashak, Pachni, Kaph-Vaatghan, Viband nashak, Vrishya, Swarya, Swas-Soola-Kasha-Hridh roga nashak.*
8. ***Bharangi***[21] **–** *Ruchikarka, Pachaka, Agnideepaka, Swas-Kasha-Gulma-Sotha nashak, Vaatghan.*
9. ***Talish***[22] **-** *Swas-Kasha har, Kaph-Pittaghan, Aruchi-Gulm-Aam-Agnimandhya-Kshay nashak.*
10. ***Dhataki***[23] **–** *Kattu , Sheet virya, Mridukarka, Trishna-Atishar-Raktpitta-Visha-Krimi-Visharp Nashak.*
11. ***Draksha***[24] **–** *Chakshushya, Bhringhani, Swarya, Vrishya, Trishna-Jwar-Swas-Vatarakt-Kamla-Mutrakrichha-Raktpitta-Daha nashak, Vataghan.*
12. ***Jala***[25] **–** *Shramnashak, Klamhar, Murchha-Pipasa-Tandra-Chhardi-Vibanda nashak, Hridhya, Tarpankarka, Ajeernanashak.*
13. ***Gudda***[26] **–** *Vrishya, Guru, Snigdha, Vataghan, Mutrasodhak.*
14. ***Madhu***[27] **–** *Sheeta, Laghu, Ruksha, Grahi, Vilekhna, Chakshuya, Deepna, Sukhsma-Srotosodhak, Vrishya, Vishad, Kusth-Arsha-Parmeha-Krimi-Trishna-Swas-Hikka-Atisara-Daha-Kshat-Kshaya nasha, Kaph-Pittaghna.*

DISCUSSION

Kankasava's components are mainly *Ushna* and *Teekshan Guna*, which can contribute to bronchodilation and serve as *Sartosodhak* and therefore produce symptomatic relief.

Dhatura includes a number of alkaloids that induce atropine and scopolamine to be released. This plant has provided a variety of pharmacological effects to the scientific area of Indian medicine, such as analgesic and anti-asthmatic properties. *Dhatura Metel* has bronchodilator properties as a result of *Tikta Rasa, Katu Vipaka, Kapha-shamak*, and *Ushna Virya* usage in Bronchial Asthma.

Vasa has mucolytic, expectorant, and bronchodilator properties, hence it is commonly used to treat respiratory problems.[28] It alleviates coughing, fights respiratory infections, and aids in the control of asthma. Because of *Tikta-Kashaya Rasa, Ruksha-Laghu Guna*, and *Katu Vipaka*, it pacifies *Kapha Dosha*.[29]

Mahua flowers work as an expectorant to reduce the thickness of mucus secretions. It exhibits cooling & toxic demulcent properties when used in coughs, colds and bronchitis. They also help to increase mucus secretion, allowing its easy removal from the body. Furthermore, being an antioxidant and inflammatory herb, it helps reduce the severity of inflammation, promoting quick recovery.

Pippali is an excellent asthma treatment due to its decongestant, bronchodilator, and expectorant properties.[30] This is because of the *Kaphaghan* Property. It has *Kaphaghan* properties as a result of *Katu Vipaka, Ushna Virya*, and *Laghu-Teekshan Guna*.

Kantkari is beneficial for the asthmatic patients due to its expectorant property. It helps to clear mucus from the respiratory tract and prevents asthma episodes. *Kantkari* possess *Kaphghan* property as a result of the *Laghu-Ruksha Guna, Katu-Tikta Rasa, Katu Vipaka*, and *Ushna Virya*.

Nagkeshar aids in the reduction of *Kapha* and the removal of excess mucus from the lungs. It has *Kaphghan* properties because of the *Laghu-Ruksha Guna, Katu Vipaka*, and *Ushna Virya*.

Shunthi possesses bronchodilation properties due to its anti-inflammatory activities. It is also associated in breaking down and eliminating mucus. *Shunthi* possesses *Kaphghan* property owing to *Katu Rasa, Ushna Virya, Laghu Guna*, and *Vaat Shamak* property owing to *Snigdh Guna, Madhur Rasa*, and *Ushna Virya*, according to Ayurvedic literature.

Bharangi possesses *Kaphghan* property as a result of its *Katu-Tiktta Rasa, Laghu-Ruksha-Tikshan Guna, Katu Vipaka*, and *Ushna Virya*. Many studies have found that *Bharangi* contains anti-inflammatory and anti-allergic properties, making it effective in the treatment of bronchial asthma.

Talish's expectorant, bronchial sedative, decongestant, antiseptic, and criminative properties make it useful in bronchial asthma. It permeates the phlegm and helps reduce asthmatic attack due to its *Tikshan Guna* and *Ushna Virya* characteristics.

Dhataki, due to *Laghu-Ruksha Guna* and *Katu Vipaka*, it helps to regulate *Kapha* and eliminate extra mucus from the lungs. This alleviates the symptoms of asthma.

Draksha aids in the strengthening of the lungs. With the aid of this medicine, you may easily obtain *Kapha* or phlegm expectoration. *Draksha* is a prominent element in ayurvedic preparations used to treat respiratory disorders such as TB, cough, bronchial asthma, and so on.

Gudda has anti-allergic properties, as well as detoxifying and relaxing the respiratory mucus. It is also excellent for constipation, clears the body's toxins and excess mucus. Constipation is the leading cause of respiratory diseases such as asthma.

Honey thins out the accumulated mucus, which makes it easier for the mucus to elimination the respiratory tract. According to the Ayurveda literature, honey is best medicine for the balancing the *Kapha* due to *Ruksha, Tikshan* and *Chhedna Guna*.

Asthma and allergies may be exacerbated by dehydration. The absence of water vaper in the lungs leads the airways to constrict and the lungs of an asthmatic patient to generate mucus. These are the two elements that contribute to an asthmatic episode. As a result, water plays a vital function in asthma.

Katu Vipaka and *Ushna Virya* are the most often utilized drugs in *Kankasav*. Medicines containing *Katu Vipaka* eliminate *Kaphh*, whereas *Ushna Virya* destroys *Vaat* and *Kaph*. Because *Tamak Swas* is caused by *Vaat-Kaph*, this drug lowers *Tamak Swas* by quenching *Vaat* and *Kaph*. Also, because these drugs include Pitta sedative chemicals like *Vasa*, *Mahua*, and *Draksha*, they inhibit Pitta, which is why their usage in the *Bhesajyaratnavali* book is also noted in diseases like *Raktpitta, Urakshat*, and so on.

CONCLUSION

Kankasava has been demonstrated to be quite effective in treating mild to severe bronchial asthma. It effectively manages the severity of symptoms while reducing the likelihood of acute exacerbations. It normalizes asthma because of its bronchodilatation property, and helps to excrete mucus because of the expectorant function. It also helps to avoid the repercussions of sickness. It not only relieves symptoms, but it also contributes in the avoidance of health issues and the loss of life. It acts as a life-giving elixir in asthmatic patients with no side effects. It also strengthens the body and strengthens the immune system without having any bad side effects.

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Table 1: Contents of *Kankasava*

S. No.	Ingredient	Latin Name	Ratio	*Rasa*	*Guna*	*Virya*	*Vipaka*
1.	*Dhatura*	*Dhatura Metel* Linn.	4 parts	*Madhura, Tikta, Kashya*	*Guru*	*Ushna*	*Katu*
2.	*Vasa*	*Adhatoda Vasica* Ness.	4 parts	*Tikta, Kashya*	*Laghu, Ruksha*	*Sheet*	*Katu*
3.	*Mahua*	*Madhuca Longifilia* (Koen).	2 parts	*Madhura, Kashya*	*Guru, Snigdha*	*Sheet*	*Madhura*
4.	*Pippali*	*Piper Longum* Linn.	2 parts	*Katu*	*Laghu, Snigdha, Tikshan*	*Ushna*	*Madhura*
5.	*Kantkari*	*Solanum Xanthocarpum*	2 parts	*Katu, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*
6.	*Nagkeshra*	*Mesua Ferrea*	2 parts	*Madhura, Tikta, Kashya*	*Laghu, Ruksha*	*Ushna*	*Katu*
7.	*Shunthi*	*Zingiber Officinalis* Rose.	2 parts	*Katu, Tikta*	*Laghu, Snigdh*	*Ushna*	*Madhura*
8.	*Bharangi*	*Clerodendrum Serrata* Linn.	2 parst	*Katu, Tikta*	*Laghu, Ruksha, Tikshan*	*Ushna*	*Katu*
9.	*Talish*	*Abies Webbiana* Lindl.	2 parts	*Madhura, Tikta,*	*Laghu, Tikshan, Snigdh*	*Ushna*	*Katu*
10.	*Dhataki*	*Woodfordia Fruticosa* (L.) Kruz	16 parts	*Kashaya*	*Laghu, Ruksha*	*Sheet*	*Katu*
11.	*Draksha*	*Vitis Vinifera* Linn.	20 parts	*Madhura, Kashaya*	*Guru*	*Sheet*	*Madhura*
12.	*Jala*	Water	512 parts	*Avyakta*	*Laghu*	*Sheet*	-
13.	*Gudda*	Jaggery	100 parts	*Madhur*	*Guru, Snigdh*	-	-
14.	*Madhu*	Honey	50 parts	*Madhur, Kashaya*	*Laghu, Ruksha, Vilekhana*	*Sheet*	-