



Review Article

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A CRITICAL REVIEW ON PUSHKARMOOLADI YOGA IN SHWASA ROGA

Khobragade Swapnil¹, Upadhyay Prem Shanker^{2*}

¹ PG Scholar, Department Kaumarbhritya/Balroga, Faculty of Ayurveda, Institute of Medical Sciences, BHU, Varanasi, U.P., India

² Associate Professor, Department of Kaumarbhritya/Balaroga, Faculty of Ayurveda, Institute of Medical Science, BHU Varanasi, U.P., India

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*Corresponding author

E-mail: psupadhyay08@gmail.com

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Abstract

Shwasa is a disease of *Pranavaha srotas*. It is clinically correlated with bronchial asthma. Symptoms of *Shwasa* are nearly similar to Bronchial Asthma, a chronic inflammatory disorder of the airways. *Pushkarmooladi yoga* is described in *Yoga Ratnakara* and *Bhaishjya Ratnavali*. This yoga contains *Pushkarmoola*, *Pippali*, *Dhanvayasa*, *Karkatshringi* and *Ativisha*. This study was conducted to know the efficacy of *Pushkarmoola diyoga* in *Shwasa* (Bronchial Asthma). The literary review was performed by a collection of material related to the clinical efficacy of *Pushkarmooladiyoga* with the help of several essential *Ayurvedic* and Modern textbooks, Research papers and journals. *Pushkarmooladi yoga* shows bronchodilator property by relaxation of bronchial smooth muscles and antimicrobial activity against various gram +ve and gram-ve bacteria, which are responsible for *Shwasa* and have antioxidant properties due to the presence of the particular phenolic compound in its ingredients.

Keywords: *Shwasa*, Bronchial Asthma, *Pranavaha Srotodushti*, Antimicrobial activity.

INTRODUCTION

Bronchial asthma is an inflammatory disease of the airway. It leads to recurrent episodes of wheezing, breathlessness, chest tightness, and cough, particularly at night or early morning. Asthma is a non-communicable disease with significant public health consequences in children and adults, including high morbidity and mortality in severe cases.¹ Bronchial asthma is characterized by paroxysmal dyspnoea accompanied by wheezing resulting from narrowing bronchial airways by muscle spasms, mucosal swelling, or viscous secretion. As per *Ayurveda*, *Shwasa* is mainly caused by *Vata* and *Kapha doshas*. There are five types of *Shwasaroga*, *Tamak Shwasa* is one of the types of *Shwasa roga*, it is mentioned as *Yaapya Vyadhi*.²

NIRUKTI OF SHWASA ROGA: '*Shwasitam Vayu iti Shwasah*.³

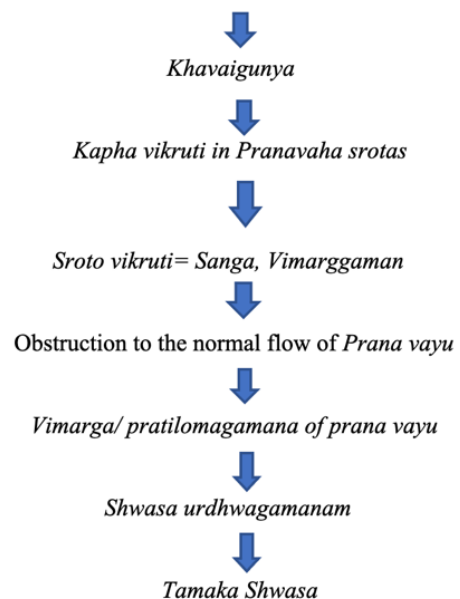
Inhalation and exhalation of air mean *Shwasa*.

'*Shwasati Anenaiti Shwasah*'⁴– The process of the exchange of air is *Shwasa*. *Acharya Charaka* explains that *Tamaka Shwasa* gets aggravated when exposed to a cloudy atmosphere, cold water, cold weather, and wind blowing from the eastern direction. In *Tamak Shwasa*, the direction of *Udana Vayu* changes, i.e. the normal *Anulomanagati* of *Udana Vayu* becomes *Pratiloma*, *Sirasa* get obstructed because of this patient get difficulty in respiration.

NIDANA/HETU(Etiology): *Vata Vardhak Aahara- Vihara* may cause *Dhatu Kshaya* and *Vata Propoka*.⁵ *Kapha Vardhak Aahara-Vihara* causes *Agnimandhya* result in production of *Ama*. The *Ama* having similar *Gunaas Kapha* causes *Kapha Prakopa*.

SAMPRAPTI (Pathogenesis)⁶: In *Shwasa udana yavu* get obstructed, i.e. the normal *Anulomanagati of Udana Vayu* becomes *Pratiloma*, *Sirasa* get blocked because of this. Then patients have difficulty in respiration, i.e. dyspnoea.

Apathya Vihara as exposure to the *raja, dhuma, aghata*, etc.



Samprapti Ghataka

Hetu: Vata kapha vardhaka Aahara Vihara	Adhistana: Uras
Dosha: Vata-Kapha	Sanchar Sthana: Ura kantha
Dushya: Rasa Dhatu	Vyakt Sthana: Urasa
Agni: Jatharagni, Rasadhatvagni	Rogamarga: Aabhyantara
Strotas: Prana-Udaka-Annayaha strotasa	Srotodushti prakar- a) Sanga b) Vimarggramana
Udbhav Shtana: Pitta Sthana (Amashaya)	Sadhyasadhatva: Yapya

Purva Roopa (Prodromal symptoms of Shwasa): Anaha, Adhmana, Arati, Bhaktdwesa, Hritpeeda, Kantha gurutwa, Parshwa shola, Prana vilomata, Shankhatoda and Uroguruta.

Roopa (Symptoms): Ghurghurkam (Wheezing), Shwasa krichrata (Dyspnoea), Shyanasyasa Shwasapeedita (Dyspnoea increases in lying position), Peenas (Coryza), Kasa (Cough), Kantodhwansa (Throat irritation), Lalat Sweda (Sweating in the forehead), Ateevteevravega shwasa (increase rate of respiration), Prana prapeedana (Tightness in the chest).

Sadhya-Asadhyata: According to Charaka, it is yapyavyadhi, i.e., difficult to cure. If it is in Navavastha then it is Sadhya.⁸ Tamaka Shwasa is curable in a strong person when the Shwasa symptoms are not fully manifested⁹ According to Vagbhata, it is Yapya, but if it is treated in the beginning and the patient is strong (balina), then Shwasa is Sadhya¹⁰.

Observation

Most of the ingredients of pushkarmooladi yoga show a pharmacological property of Ushna Virya, Katu-Tikta rasa, Laghu Guna and Vata kapha har property. All the ingredients of

Pushkarmooladi yoga have the quality to normalize prakupita Vata kapha dosha. The drug Pushkarmooladi yoga produce a significant relaxation of bronchioles. Shwasa roga is caused by the sang and vimarggaman of strotas and kapha prakopa, Ushna Virya, Katu, Tikta rasa, and Shwasa hara property of ingredients act at this instance. The Pushkarmooladi prove an effective medicine for treatment to reduce Vata kapha predominant Shwasa.

Ingredients of Pushkarmooladi yoga shows antimicrobial activity against certain gram +ve and gram-ve bacteria, which are causing recurrent respiratory infection, which is responsible for predisposing factor Shwasa roga. Pushkarmooladi yoga offers excellent antimicrobial activity against many bacteria causing RTI and helps in reducing the severity of Shwasa.

The Phytochemical study shows that Pushkarmooladi yoga has many Phytochemical-like phenolic compounds and natural steroids, which prevent the release of free radicals and act as an antioxidant, in this way helps in reducing the severity of Shwasa. It also shows bronchodilator and expectorant property. By these property Pushkarmooladi yoga help in breaking the pathogenesis of Shwasa roga.

Table 1: Pharmacological Property of Pushkarmoola (Inula racemosa)

Rasa	Guna	Virya	Vipaka	Dosik action	Use/Action
Katu, Tikta ¹¹	Laghu	Ushna	Katu	Kapha hara	Shwasa, kasa, Hikka, Parshwashoola, Aruchi
Katu, Tikta ¹²	Snigdha	Ushna	Katu	Vata Kapha Shamaka	Shwasa, Kasa, Hikka, Parshwashoola, Aruchi, Jwara
Tikta, Katu ¹³	-	Ushna	-	Vata Kapha hara	Shwasa, Kasa, Hikka, Shotha, Adhmana

Table 2: Pharmacological Property of Pippali (Piper longum)

Rasa	Guna	Virya	Vipaka	Dosik action	Use/Action
Katu ¹⁴	-	Anushna Shita	Madhura	Vata, Kapha Shamaka	Amatar (Charak Samhita chikitsa, Deepan, Pachana).
Katu ¹⁵	Laghu, Snigha	Anushna, Shita	Madhura	Vata, Kapha Shamaka	Shwasa, Kasa.
Katu ¹⁶	Tikshna	Ushna	Madhura	Vata, Kapha Shamaka	Shwasa, Kasa, Deepana, Pachana and Rasayana
Katu ¹⁷	Snigdha	Ushna	Madhura	Vata, Kapha Shamaka	Shwasa, kasa, Deepana

Table 3: Pharmacological Property of Dhanvayasa (Fagonia cretica)

Rasa	Guna	Virya	Vipaka	Dosik action	Use/ Action
Tikta ¹⁸	-	Shita	-	Kapha hara	Jwara, Mutrajanan, Vranropak
Tikta, Kashaya ¹⁹	Laghu	Shita	Madhura	Kapha Pitta hara	Kasa, Jwara, Vaman, Medohar
Tikta ²⁰	-	Shita	Madhura	-	Dahavinashak, Visham jwara, Chardi, Mohvinashka

Table 4: Pharmacological Property of Karkatshringi (Pistacia integerrima)

Rasa	Guna	Virya	Vipaka	Dosik action	Use/ Action
Kashaya, Tikta ²¹	Ruksha	Ushna	Katu	Kapha Vata Shamaka	Shwasa, Kasa, Hikka, Jwara
Kashaya, Tikta ²²	Laghu	Ushna	Katu	Kapha Vata Shamaka	Shwasa, Kasa, Jwara, Hikka
All rasa except Lavana ²³	Laghu	-	-	Tridosha Shamaka	Kasa

Table 5: Pharmacological Property of Ativisha (Aconitum heterophyllum)

Rasa	Guna	Virya	Vipaka	Dosik action	Use/ Action
Katu, Tikta ²⁴	-	Ushna	Katu	Kapha Pitta Shamaka	Kasa, Jwara, Aamvisha, Krimi
Tikta ²⁵	Laghu	Ushna	Katu	Kapha Pitta Shamaka	Kasa, Jwara, Aamvisha, Krimi
Katu ²⁶ , Tikta	Laghu	Ushna	Katu	Kapha Pitta Shamaka	Kasa, Jwara, Aamvisha, Krimi

Table 6: Antimicrobial Activity of Pushkarmoola (*Inula racemosa*)

Name of Bacteria	In Vivo or in Vitro	Result
<i>S. aureus, E. coli</i> ²⁷	In vitro	<i>Inula racemosa</i> has antimicrobial properties against listed bacteria
Gram +ve, gram -ve <i>Staphylococcus aureus, Serratia Marcescens, E. coli, Shigella dysenteriae, S. typhi, p. aeruginosa</i> ²⁸	In vitro	The aqueous extract of this plant seed has antimicrobial activity.
<i>S. aureus, E. coli, S. aureus</i> ²⁹	In vitro	<i>Inula racemosa</i> has antibacterial properties against both gram +ve and gram. -ve

Table 7: Antimicrobial Activity of Pippali (*Piper longum*)

Name of Bacteria	In Vivo or in Vitro	Result
<i>S. alba, E. coli, B. megaterium, Aspergillus aeruginosa</i> ³⁰	In vitro	In vitro study proves antibacterial property of <i>piper longum</i>
<i>S. pyogenes, K. pneumoniae, S. aureus</i> ³¹	In vitro	<i>Piper longum</i> has antimicrobial properties against <i>E. histolytica</i>
<i>K. pneumoniae, Pseudomonas aeruginosa, Staphylococcus aureus</i> ³²	In vitro	The plant is effective against the listed bacteria.

Table 8: Antimicrobial Activity of Karkatshringi (*Pistacia integerrima*)

Name of Bacteria	In Vivo or in Vitro	Result
<i>Staphylococcus aureus, E. coli, Pseudomonas aeruginosa</i> ³³	In Vitro	<i>Pistacia integerrima</i> shows antimicrobial activity in different concentrations.
<i>Staphylococcus aureus, Salmonella typhi, B. subtilis, Pseudomonas, aeruginosa, E. faecalis</i> ³⁴	In Vitro	<i>Pistacia integerrima</i> shows antimicrobial activity in different concentrations.
<i>B. subtilis, S. aureus, Pseudomonas pickettii</i> ³⁵	In Vitro	Ethyl acetate fraction of <i>Pistacia integerrima</i> shows antimicrobial inhibition against bacteria.

Table 9: Antimicrobial Activity of Dhanvyasa (*Fagonia cretica*)

Name of Bacteria	In Vivo or in Vitro	Result
Gram +ve, gram -ve, <i>E. coli, Staphylococcus aureus, Streptococcus pyogenes</i> and fungal stain <i>Candida albicans</i> ³⁶	In vitro	The Gram +ve bacteria & gram -ve bacteria both are susceptible.
<i>S. aureus, E. coli, K. pneumonia, Enterobacter aerogenes, Bordetella Bronchiseptica</i> ³⁷	In vitro	Antimicrobial action against listed bacteria.
Gram +ve, Gram -ve, <i>E. coli, S. aureus Staphylococcus epidermidis Pseudomonas aeruginosa, Bacillus Subtilis</i> ³⁸	In Vitro	The Gram +ve bacteria & gram-ve bacteria both are susceptible.

Table 10: Antimicrobial Activity of Ativisha (*Aconitum heterophyllum*)

Name of Bacteria	In Vivo or in Vitro	Result
<i>Streptococcus aureus, B. bronchiseptica, B. subtilis, P. putida and X. campestris antimicrobial activity</i> ³⁹	In vitro	<i>Aconitum hererophyllum</i> shows antibacterial activity
<i>B. cereus, S. aureus, Pseudomonas aeruginosa, Salmonella typhi, Serratia marcescens, E. coli, K. pneumonia</i> ⁴⁰	In vitro	<i>Aconitum hererophyllum</i> has antibacterial properties against both grams. +ve and gram-ve bacteria
<i>Staphylococcus aureus, Bacillus subtilis, Candida albicans and Aspergillus flavus</i> ⁴¹	In vitro	<i>Aconitum hererophyllum</i> is having antibacterial against listed bacteria

Table 11: Phytochemical Studies of Ingredients of Pushkarmoola yoga

Drugs Name	Phytochemical constituents
<i>Pushkarmoola (Inula racemosa)</i> ⁴²	Alantolactone, Isoalantolactone, Inulinolide, Dihydroisoalanto lactone, B- sitosterol, D-mannitol, Dihydroxynunolide, Neoalantolactone, in-uronile
<i>Pippali (Piper longum)</i> ⁴³	Piperine, Tannin, Piplartine, Piperonaline, n-hexaadecane, n-heptadecane
<i>Karkatshring (Pistacia integerrima)</i> ⁴⁴	Tannin, Resin, Essential oil, Pistaciencoic acid, Pistacin oil acid B, B- sitosterol and Masticadienoic acid
<i>Dhanvyasa (Fagonia cretica)</i> ⁴⁵	Tannin, Saponin, Steroid, Alkaloids, and Glycosides
<i>Ativisha (Aconitum heterophyllum)</i> ⁴⁶	Atisine, Atidine, Tanic acid, Aconitic acid, B-sitosterol, Heterophyllcene, Heterophylline, Isoatisine

CONCLUSION

The pharmacological properties of drugs help break down the pathogenesis of *Shwasa roga*. Every ingredient shows antibacterial property up to some extent against certain Gram +ve and Gram-ve bacteria causing recurrent respiratory tract infection and is responsible for *Shwasa*. The phytochemical property offers

that *pushakarmooladi yoga* causes certain phenolic compounds and natural steroid, acting as an antioxidant, anti-inflammatory and bronchodilator. Based on the pharmacological property, antimicrobial study, phytochemical study, bronchodilator and expectorant property, it is concluded as *Pushkarmooladi yoga* seem to be an effective and safe formation of treatment *Shwasa raga*.

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