



PREPARATION AND EXPERIMENTAL STUDY (IN VITRO) OF PURANDAR VATI

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(Published Online: November 2023)

Open Access

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Article Received: 09/10/2023 - Peer Reviewed: 25/10/2023 - Accepted for Publication: 10/11/2023.



ABSTRACT

Objective To prepare and evaluate the antimicrobial effect of *Purandar vati* (An Ayurvedic traditional formulation) against some of the bacterial stains. **Method**, *Purandar vati* was prepared using the classical reference of *Bhaishajyaratnavali. Parada* (Mercury) and Gandhaara (sulphur) were purified and then triturated to form *Kajjali*. Then raw drugs of Triphala and *trikatu* were converted into powder form, and all the ingredients were mixed and triturated with the help of *aja dughdha* (goat milk) and tablets were formed. The final product of *Purandara vati* was dried and stored. Antimicrobial activity of *Purandar vati* against streptococcus pneumonia and morxella catarrahlis bacteria was evaluated using the agar cup diffusion method. **Result**: *Purandar vati* shows a significant antibacterial spectrum against streptococcus pneumonia and morxella catarrahlis. **Conclusion**: This study shows that *Purandara vati* has antimicrobial potency and it can be clinically used for infectious respiratory disorders.

Keywords: *Purandar vati* , antimicrobial activity, antibacterial activity, respiratory disorders .

INTRODUCTION

Since the Evaluation of life, diseases have also evolved to destroy it. The need of Soothing the life is as old as securing the life. The *acharyas* found the path to lighten the sufferings, be it Physically or Mentally in the form of science of Life i.e Ayurveda. The Wondering minds of *Acharyas*, Considering the Various nature of herbal and Mineral resources and Complex nature of Disease resulted Multiple *kalpana* i.e to suit the Patients, *Kala*, Disease and overall. *Purandar vati* is a unique formulation mentioned in *Bhaishajya ratnavali* containing *shuddha Parad* (Purified mercury), *shuddha Gandhak* (purified sulphur), *triphala* and *trikatu* triturated with Goats milk. This *kalpa* is used in respiratory disorders like *kasa* (cough) and *shwasa* (dyspnoea).^[1] Respiratory disorders pose significant health chal-

lenges worldwide, impacting individuals of all ages and leading to substantial morbidity and mortality. People with weakened lungs and immune system are mostly vulnerable to infections of respiratory tract. Pulmonary infections are most commonly viral or bacterial. Recently it has been found that many human pathogenic organisms have developed synthetic drug resistance.^[2] There are several reports on proven antimicrobial activity of ayurvedic plants but limited no of studies on herbomineral formulations. So for the need of hour the present topic was selected for study. For the present study streptococcus pneumoniae and morxella catarrahlis these two bacteria were selected as they are commonly found in infectious condition.

Materials and methods: Ingredients of **Purandar vati** are listed below in Table 1. All the ingredients were purchased from the local market.

INGREDIENTS	SCIENTIFIC NAME	PART USE	QUANTITY
Shuddha Parada	Hydrargyrum	-	30gm
Shuddha Gandhak	Sulphur	-	60gm
Trikatu churna 1)Shunthi 2)Marich 3)Pippali	Zingiber officinale Piper nigrum Piper longum	Root, Fruit, Fruit	30gm
Triphala churna 1)Haritaki 2)Bibhitaki 3)Amalaki	Terminalia chebula Terminalia Billerica Emblica officinalis	Fruit Pericarp Fruit Pericarp Fruit Pericarp	30gm
Ajaa Kshir	Capra aegagrus hircus	Milk	q.s

Method of preparation

1] *Parada Shodhan*(Purification of Mercury)^[3]:

- Ashuddha Parada (impure mercury) was taken in khalva yantra with equal quantity of *Sudha*(lime) and triturated for three days.
- Then, it was filtered with two layered cotton cloth, and Parada was separated.
- Again, mercury was triturated with an equal quantity of *lashuna Kalka* and half the quantity of *Saindhav* till it became black.
- Then, the mixture was carefully washed till *Shuddha Parada* (Purified Mercury) was ob-

tained.

2] *Gandhak Shodhan*(Purification of sulphur)^[4]:

- *Goghruta* (cow ghee) and *ashuddha Gandhak* were taken in an iron vessel and heated till it melted.
- Then it was filtered into a vessel containing cow's milk with the help of cotton cloth and washed with worm water.
- This procedure was repeated three times with different milk each time. After this, *Shuddha Gandhak* (purified sulphur) was obtained.

3] *Kajjali Nirman*^[5]

- 1 Part of *Shuddha Parada* and two parts of *Shuddha Gandhak* were added to *Khalva Yantra*.
- Then it was triturated till it became black powder, and no shiny particles remained.

4] **Trikatu churna Nirman**^[6]: Raw *Shunthi*, *Marich* and *Pippali* drug was finely powdered and then mixed in equal quantity to form a homogenous mixture.

5] **Triphala churna Nirman**^[7]: The raw drugs of *Haritaki*, *Bibhitaki*, and *Amalaki* were finely powdered and then mixed in equal amounts to form homogeneity.

6] **Ajaa Kshir Bhavana**^[8]: Then *Kajjali*, *Trikatu churna* and *Triphala churna* are mixed together and triturate with *Ajaa Kshir* (goat milk).

7] **Vati Nirman (Tableting)**^[9]: After completing 1 *Bhavana* (trituration) of *Ajaa kshir*, *Vati* of 250mg was formed with this mixture, dried and stored in an airtight container.

The *Purandar vati*'s antimicrobial activity was assessed in the National facility for Biopharmaceuticals lab in Matunga, Mumbai.

Test organisms

- 1) *Streptococcus pneumoniae* (MTCC 655)
- 2) *Moraxella catarrhalis* (ATCC 25238)

Antimicrobial activity was done using Agar cup diffusion method.

1. The test organism was grown in Mueller Hinton broth, providing incubation period of 48hr and then used for the study,
2. The optical density of the bacterial culture was adjusted using 0.5 McFarland standards (10 cfu/ml) and the cell suspension was mixed to homogeneity to give a final density of 1 x 10 CFU/ml then taken ahead for checking the antimicrobial activity using agar cup diffusion method.
3. Each plate contained three samples. 0.1ml volume of each sample was loaded into the wells and the plate was incubated at room temperature for 30°C for 48hr.

Result

In the present study *Purandara vati* was tested for its antimicrobial Activity against *Streptococcus pneumoniae* and *Moraxella catarrhalis* along with the standard drug *Chloramphenicol* and distilled water.

Sr no	Sample	Zone of inhibition (mm)	
		<i>Streptococcus pneumoniae</i>	<i>Moraxella catarrhalis</i>
1	<i>Purandar vati</i>	20	22
2	Distilled water	-	-
3	<i>Chloramphenicol</i>	21	27

DISCUSSION

Vati Kalpana is one of the most elegant and efficient dosage forms of ayurvedic pharmaceuticals.

Purandar vati is mentioned in *Bhaishajya ratnavali* indicated for *kasa*, *shwasa* and *Agnivardhana*. The contents of *Purandara vati* are *Kajjali*, *Triphala*, *Trikatu* along with the *Bhavana dravya Ajaa kshir* and consumed with *Aadrak swaras*.

kajjali enhances drug properties. *Trikatu* is *ushna*, *Tikshna*, *kaphaghna* and act as a *kasahara* and *shwasahar*. *Triphala* is *kaphaghna* and *dipan*. *Ajaa kshir* is *laghu*, *ushna*, *kasahar* and *shwasahar*.

Aadrak is *ushna*, *kaphaghna*, *vataghna*, *kasahar* and *shwasahar*.

results show that *Purandar vati* possess strong antimicrobial activity against *Streptococcus pneumoniae* and *Moraxella catarrhalis*.

CONCLUSION

Results and findings suggest that *Purandar vati* has excellent potential as an antimicrobial activity against *Streptococcus pneumoniae* and *Moraxella catarrhalis*, and it can be used to treat infectious respiratory disorders.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Kadambari A. Tupe & Ashvini Y. Deshmukh: Preparation and Experimental Study (In Vitro) of Purandar Vati. International Ayurvedic Medical Journal {online} 2023 {cited November 2023} Available from: http://www.iamj.in/posts/images/upload/2659_2662.pdf