



Research Article

IN-VITRO ANTIMICROBIAL ANALYSIS OF THE FUMES ORIGINATES BY *CHANDRODAYA VARTI (AGNIKARMA)* IN CERVICAL CELL PATHOLOGY

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Article info

Article History:

Received: 08-07-2024

Accepted: 26-08-2024

Published: 20-09-2024

KEYWORDS:

Fumigation, Agnikarma, Microorganism, Garbhashaya griva Mukhagata Vrana, Cervical cell pathology.

ABSTRACT

Woman's health is incredibly valuable and crucial component of a healthy country. There are so many diseases that affect quality of life of women, cervical cell pathology is one of them. On the basis of etiopathogenesis, sign, and symptoms and previous scientific studies it can be correlated with *Garbhashaya Griva Mukhagata Vrana*. Here we have proved the antimicrobial activity of *Chandrodaya Varti* by fumes originating from it with the help of in vitro study on different strain of bacteria and fungi and due to antimicrobial properties present in the fumes of *Chandrodaya Varti*. It kills the microorganisms of cervical cell pathology and due to *Sooksham, Laghu, Vishada* properties of fumes it regenerates new cell tissue in *Garbhashaya Griva mukha*. The present study highlights the effect of fumes originating (fumigation) from *Chandrodaya varti* in the management of *Garbhashaya Griva Mukhagata Vrana*.

INTRODUCTION

The word antimicrobial has been derived from the two word 'anti'- (against) and 'microbial' means (microorganisms)^[1]. In Ayurveda texts '*Krimi*' word used for microorganism, (bacteria and fungi). *Krimi* are responsible for formation of *Vrana*^[2] namely *Agantuja* and *Nija* which are interconvertible Thus, the *Vrana* originating in the *Yonimarga* are referred as *Gabhashaya Griva Mukhagata Vrana*.^[3]

Previous scientific studies revealed that the abnormal vaginal flora/microbiome of lower genital tract is a cause of cervical cell pathology^[4]. Due to the anti-microbial properties of fumes of *Chandrodaya Varti*, it eliminates all the symptoms occurring in cervical cell pathology, like lower back ache, dyspareunia, white discharge, contact bleeding etc. Due to fumes originate from *Chandrodaya varti* (fumigation) it destroys the unhealthy tissue in chronic non-healing hyper granulated wounds. It is appropriate for use in *Vrana*

because of its *Ruksha, Laghu, Ushna* and *Vishada Guna* which have contradictory attributes of *Vrana*.^[5] Due to the presence of *Vranaropana* properties in *Chandrodaya varti*, it also pacifies *Vata* and *Kapha dosha*.^[6]

AIM AND OBJECTIVES

In vitro study to assess the antimicrobial activity of *Chandrodaya varti* in different strain of bacteria and fungi.

Pharmaceutical Evaluation

Anti-microbial evaluation activity of *Chandrodaya varti*

Anti-Microbial fumigation study of *Chandrodaya Varti* was conducted on the microbial species *Staphylococcus*, *Salmonella* species, *Pseudomonas aeruginosa*, *Escherichia coli* (E- Coli), *Klebsiella pneumoniae* aerobic organism at "Vasu Research Center (A Div. of Vasu Healthcare Pvt. Ltd.) Makarpura, Vadodara, Gujarat."

MATERIAL AND METHOD

Source of Data: The detail content and references are analysed from available text. Main Samhitas referred are *Charaka, Sushruta, Sharangadhara, Yogaratnakar, Bhavaprakash, Kashayap, Nighantu* and relevant references are taken from books and research articles.

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<https://doi.org/10.47070/ayushdhara.v11i4.1692>

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Previous research data standardized formation of *Varti*, and fumigation through *Agnikarma*. The contents were tested through all safety and quality control method by the Department of *Dravya guna* and *Ras Shastra* Rishikul Campus, Haridwar.

Drug Source

Raw herbal drugs (*Chandrodaya varti*) were procured from the Anamika Pharmacy, Sidcul, Haridwar, and were identified based on their macroscopic characteristics in the Department of *Dravyagun*, Rishikul Campus, Haridwar. The *Shodhan* process of *Manashila (7 Bhavana)* with *Aadraka Swaras* was done at Department of *Rasashastra &*

Bhaishajya Kalpana, Rishikul Campus, Haridwar, and *Shodith Shankh nabi* powder was purchased and preparation of *Chandrodaya varti* was done in Anamika Pharmacy Sidcul Haridwar^[7].

Preparation of Chandrodaya varti

Chandrodaya Varti was prepared as per the reference available in *Sharangdhara Samhita*. *Chandrodaya Varti* comprises of *Maricha, Pippali, Haritaki, Vacha, Kustha, Vibhitaki, Shanknabi, Manshila*. All the ingredients are taken in equal quantity, pounded with *Chagaksheera*, made into *Varti* and dried properly in sunlight, then after that *Chandrodaya Varti* was stored in an air tight container.

Method of In-vitro anti-microbial analysis of the fumes originates by Chandrodaya Varti

Media used

| Media | Make |
|---|-----------|
| Soyabean Casein Digest Medium (SCA) | Hi- media |
| Sabroud Dextrose Agar with chloram phenicol | Hi- media |

Method: By settling plate

Method: Take ready to prepared sterile media plate of soyabean Casein Digest medium (SDA) for total bacterial count and Sabroud Dextrose Agar with Chloramphenicol (SDA) for total fungal count. Labelled them before fumigation. Remove the lid and expose the plate for 30 minutes on specific area. After 30 mins, close the lid of media plates. Incubate SCA plate into Bacteriological incubator at 35°C for 24 hours and SDA plate into biological oxygen demand incubater at 25°C for 48 hours and count the no. of colonies before fumigation. Take sample of

Chandrodaya varti and powdered it. Take approximate 1gm of sample and spread it on Kapoor dani. Now take other two sterile media plates of SCA & SDA, labelled them after fumigation. Place (same area of before fumigation) it near to *Kapoor dani*, remove the lid of plates and switched on the *Kapoor dani* for 30 minutes. After 30 min, close the lid of media plates. Incubate SCA plate into Bacteriological incubator at 35°C for 24 hours and count the no. of colonies after fumigation and measure the percentage reduction.

RESULTS AND OBSERVATION

Table 1: Properties of Chandrodaya varti^[8]

| S.no. | Ingredients | Dosha karma | Properties |
|-------|---------------------|---------------------------------------|---|
| 1. | <i>Maricha</i> | <i>Vata kapha shamak</i> | <i>Krimighan, Shothahar, Vatavikar, Mutrakriccha, Dhwajabhanga</i> |
| 2. | <i>Pippali</i> | <i>Pitta shamak</i> | <i>Shoola prashamana, Vatahar, Krimighan, Raktavardhak, Shukradaurbhalya, Rasayana</i> |
| 3. | <i>Haritaki</i> | <i>Tridosha shamak (Vata shama)</i> | <i>Shothahar, Vranashodhak, Vranaropana, Krimighan, Garbhashaya shothahar, Mutravikar, Rasayana</i> |
| 4. | <i>Vacha</i> | <i>Vata kapha shamak</i> | <i>Krimighan, Shoola prashamana, Garbhashaya Sankochaka, Vatahar, Mutrakriccha, Daurbhalaya</i> |
| 5. | <i>Kushta</i> | <i>Vata kapha shamak</i> | <i>Durgandhanashak, Krimighan, Vatahar, Anulomana, Shoola prashamana, Raktashodhak, Shukrashodhak, Vrishya, Rasayana, Daurbhalaya</i> |
| 6. | <i>Bhibhitaki</i> | <i>Tridosha shamak (Kapha shamak)</i> | <i>Shothahara, Vatahar, Anulomana, Krimighan, Raktasthambhak</i> |
| 7. | <i>Manahshila</i> | <i>Vata kapha shamak</i> | <i>Rasayana, Lekhaniya, Shoshan, Krimighan</i> |
| 8. | <i>Shankhnabhi</i> | <i>Tridosha shamak</i> | <i>Lekhaniya, Balaya</i> |
| 9. | <i>Chagaksheera</i> | <i>Vata pitta shamak</i> | <i>Rasayana, Raktapittahara Vatapittashamak</i> |

According to *Acharayas* the content of *Chandrodaya Varti* have *Krimighana, Vranashodhaka, Vranaropana* properties due to which it has anti-microbial properties. *Garbhashaya Griva mukhagata Vrana* is characterized by symptoms like white discharge with foul smell, pain in back ache, redness, tenderness etc. These are pacified by the fumes originate (fumigation) from *Chandrodaya varti Agnikarma*. Properties of *Chandrodaya Varti* in detail are mentioned in previous research work studies.^[9]

Table 2: Anti microbial evaluation activity of *Chandrodaya varti* against bacterial and fungal

| S.No. | Media | Colony count before fumigation | Colony count after fumigation | % Reduction |
|-------|-----------------|--------------------------------|-------------------------------|-------------|
| 1. | Bacterial count | 102 | 56 | 45.09% |
| 2. | Fungal count | 61 | 36 | 40.98% |

The available data, test sample *Chandrodaya varti* showed both anti-bacterial and anti-fungal effect. Bacterial colony count before fumigation 102 and after fumigation was 56 and fungal count before fumigation was 61 and after was 36 and % reduction of bacteria is 45.09% fungal is 40.98%. The results of in vitro prove that *Chandrodaya varti* has antimicrobial properties.

Observation

1. Bacteria

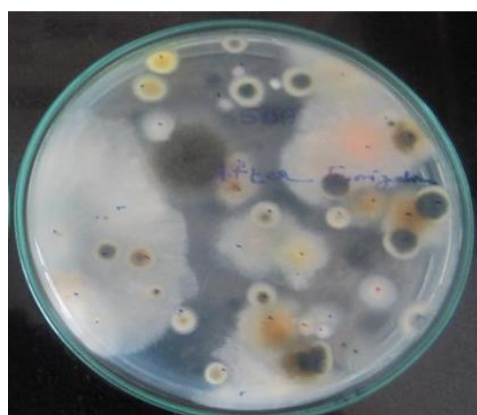


Images before 30min fumes originate (fumigation)

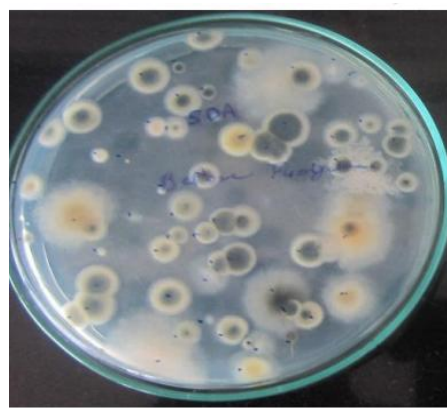


Images after 30min of fumes originate (fumigation) with SCA media

2. Fungal



Images before 30mint fumes originate (fumigation)



Images after 30mint of fumes originate (fumigation) with SDA media

DISCUSSION

The results of in vitro study prove that *Chandrodaya varti* has antimicrobial properties. These fumes enter into smallest units of tissues of genital tract due to *Sooksham- Srotogani Guna* and it dilates blood vessels and help in oxidation of blood. It leads to adequate tissue perfusion and oxygenation. Thus,

reduces inflammation, itching and eliminates infection^[10]. According to *Acharya Charaka* in *Vrana Chikitsa* chapter explain the use of fumes originating through *Agnikarma* Fumes in the cervical cell pathology (*Garbhashaya Griva Mukhagata Vrana*). The pain, discharge, foul smell and the *Krimi* present in

Vrana get cured^[11]. *Acharya Sushruta* advices sixty procedures (*Shasti upakarma*) for the management of wound healing, in which *Agnikarma* (fumes originate) is one of them^[12]. *Acharaya Sushruta* says that *Vata* and *Kapha Dosha* pacification is achieved by *Agnikarma* (fumes originate) *Krama* and is helpful in the management of pain, discharges and other symptoms of cervical cell pathology.^[13] It was found that *Agnikarma* (fumes originate) has many advantages and is a safe method. It seems to be more effective by providing timely relief.

CONCLUSION

In vitro antimicrobial analysis of *Chandrodya Varti* in Sabroud Dextrose Agar with Chloramphenicol (SDA) & Soyabean Casein Digest Medium (SCA). From the available data, test sample reports of *Chandrodya Varti* showed both anti-bacterial and anti-fungal effect. *Chandrodya varti* has *Vranashodhak*, *Vranaropaka* properties due to which it eliminates the microorganism in cervical cell pathology (*Garbhashaya Grivamukhagata Vrana*) and helps in new cells origination. And there is a need for further research to be done for assessment of antimicrobial properties of fumes originating by *Vranarakshoghana Dravya*.

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Cite this article as:

Nisha Chaudhary, Anjali Verma, Ajay Kumar Gupta, Khem Chand Sharma. In-vitro Antimicrobial Analysis of the Fumes Originates by Chandrodya Varti (Agnikarma) in Cervical Cell Pathology. AYUSHDHARA, 2024;11(4):52-55.

<https://doi.org/10.47070/ayushdhara.v11i4.1692>

Source of support: Nil, Conflict of interest: None Declared

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