EFFECT OF YONIDHOOPANA AND ITS ANTIMICROBIAL ACTIVITY IN STRI ROGA & PRASUTI TANTRA: A REVIEW ARTICLE

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ABSTRACT

Background: Yonidhoopana means the fumigation of vulva and vagina is the special local therapy mentioned in Ayurveda classics in different yonivyapada, sukhrasava and sutika. It is an inseparable part of therapeutics in gynaecological disorders maintain sterilized external and internal environment of genitals. Various dhoopana drugs has been described in Bruhatrayi and Kashyapa Samhita that have Katu, Tikta, Laghu, Ruksha and Ushna properties on heating, get converted into volatile fumes cause dilatation and oxidation of blood vessels and increase tissue perfusion. This antiseptic and sterilised environment of vagina is depicted by analgesic, anti-inflammatory and antimicrobial effect of Dhoopana. Various clinical research work related to yonidhoopana and antimicrobial effect of dhoopana has been conducted. Materials & Methods: Ayurvedic Samhita (Bruhatrayi), Kashyapa Samhita and literatures of striroga & prasuti tantra were studied out thoroughly. Original clinical research works, and review articles related to dhoopana were searched through online database search engine like Pubmed online, Researchgate, and Google scholar. Eight articles were selected and concluded. Discussion & Results: Yonidhoopana is very effective Sthanika chikitsa in yoniroga chikitsa, sukhrasava and sutikaparicharya due to its krimighna, kandughna, shothahara, vranaropaka, kledashoshaka effect in vulva and vagina. Hence, it is significantly proved in clinical research work of YONIDHOOPANA and antimicrobial dhoopana karma. Conclusion: Yonidhoopana
has bacteriostatic action, economical, easy to perform and effective antimicrobial and anti-inflammatory procedure without any harmful effects.

**Keywords:** Yonidhoopana, Sthaniya chikitsa, Yoniroga, Sutika.

## INTRODUCTION

*Sthaniya Chikitsa* is the special local therapy mentioned in Ayurveda classics in different *yonivypada* (genital disorders), *yoniroga*, *santatinirodha* sukhapsarasava and for the maintenance of genital health. Different types of *Sthaniya chikitsa* are described yonidhawan, yoniparisheka, yonipichu, yonikalka, yonilepa, yonipinda, yonivarti, yonidhoopan, ksharakarma, uttararabasti. Dahan-karma is also included as a local procedure by some Acharya. Local treatments possess shaman and shodhana properties according to their prayojana. Dhoopan karma (herbal fumigation) is an important *sthanika chikitsa* described in *Bruhatrayi* and *Kashyapa Samhita*. Since vedic period homa-havana, yagna, sterilisation of air by *agnihotra*, sterilisation of house and places around it by *dhoopan* is going on traditionally. In Ayurveda classics *dhooma* and *dhoopan* these terminologies are used. *Dhooma* means ‘dhoopan’ and *dhoopana* means subjecting any body part to the medicated fumes. *Dhoopan* is an inseparable part of therapeutics, which maintains internal and external environment. It is an important local therapy mentioned both for *Swasthya rakshan* (*Rakshoghna*) and *Vyadhi chikitsa*.

*Dhoopan* is the method of fumigation using herbal, herbomineral or animal origin drugs to heal *vrana*, *yonivypada*, *karnarogas*, *nasarogas*, *gradrogas* etc. It is also used to disinfect *bhesajagara*, *vranganaga*, *sutikagara*, *shastrakarmaghruda*, *kumaragara* and to sterilise the *asava* and *arishatra*. A variety of fumigation drugs are mentioned in *Kashyap Samhita Khilsthana* and in *Bruhatrayi* for prevention, combating diseases and purifying environment. *Yonidhoopana* is also an important kind of *dhoopana* mentioned in different *striroga*, *prasava* and *sutika-avastha*. Many research studies have been conducted to prove its role in *sutikaparicharya*, *yoniroga*, disinfection of wound & its healing, its antimicrobial effect in sterilization of operation theaters, hospital wards etc. *Aparajitha Dhooma Choornam* a time tested *Ayurvedic* fumigation powder has played a role in preventing COVID epidemics in crammed migrant labour camps during lockdown, used for sanitization and shown significant results of air disinfection.

### Aim and Objectives:

1. To study the role of *yonidhoopana* in different *yoniroga*, *sutika*, *prasuta*.
2. To assess the antimicrobial effect of *dhoopana karma* proved in different previous clinical research studies.

### Materials & Methods

Different original research articles and clinical trials studies that are published in peer-reviewed journals related to *dhoopana* (fumigation) in *striroga* & *prasuta*, *vranadushti*, *kranaroga* and fumigation of operation theatres, wards; were searched out and studied thoroughly. *Dhoopana karma* mentioned in different *samhitas* (*Bruhatriya*), *Kashyapa Samhita* and ayurvedic literature of *striroga* & *prasuti tantra* regarding indication of *yonidhoopana* were studied. *Yonidhoopana* and antimicrobial effect of herbal fumigation mentioned into different clinical trials and *ayurvedic* literature were reviewed and results were concluded.

### Dhoopan:

Different types of *Dhoopan* drugs

1. **On the basis of origin**:

   *Avum Dhoopa Samutpanna Prajanam Hitkamy / Nirdishtascha Agnidaivtya Jangam Sthavaraashrya //* (K.S.Dh.kalp)

   1. **Jangama**: Animal origin (Hairs, nails, horns, *sarpanirmoka* etc.) Animal product contains a keratin like structural part that contains sulphur play a key role in disinfection.
   2. **Sthavara**: Plant origin (*Agaru*, *vacha*, *haridra*, *kustha*, *guggulu nimba* etc.)
   3. **Minerals**: *Harital & Manahshila*. These are the Sulphur containing compounds.
2. According to Acharya Kashyapa\textsuperscript{10}: Dhoopa, Anudhoopa, Pratidhoopa.
All these drugs are collected and stored in air-tight containers like earthen pots and glass jars to maintain its original colour and volatile oil contents.

Properties of Dhoopan drugs\textsuperscript{11}: Guna: Laghu, Ruksha, Tikshna, Vikasi, Ugragandhi, Volatile; Rasa: Katu, Tikta; Virya: Ushna Vipaka: Katu; Karma: Shothahara, Krimighana, Kandughana, Vranashodhana, Vranaropan, Vedanashamaka; Mahabhoota pradhyana: Akasha, Vayu

Purpose of Dhoopan:
1. Rakshoghana karama\textsuperscript{12}: Dhoopan of bhesajagar, kumaragara, sutikagara, Shastra-karam-graha.
2. Vyadhinashana\textsuperscript{13}: For vranashodhana, vranaopan, kledashoshana, krimihara, vedanashamak, durgandhahara etc.
3. Sterilization of asava and arishata.

Kaala: “Dwiraha karyed dhoopam dashratram atan-dritas”\textsuperscript{14} (Su.S.) Dhoopan is advised in morning and evening for 10 days for 3-5 minutes. Amount for Dhoopan drug\textsuperscript{15} is taken 3-5 grams; resins like guggulu & raal are taken in an amount of 3 gms while powdered form is taken as 5 gms.

Yonidhoopana: Yoni + Dhoopana means fumigation of vulva and vagina. Yonidhoopan\textsuperscript{16} is a practical procedure in which fumigation of vulva & vagina is performed by medicated and disinfected smoke over the surface of yoni. It is indicated as Rakshoghana and Vyadhi chikitsa in striroga and prasuta. Vagina is preferred as a route of drug delivery due to its large surface area, high vascularity and permeability to absorb the medicated fumes or any medicated drug kept in vagina.

Mode of action of Yonidhoopana: Dhoopan drugs with katu-tikta, ushan and aromatic properties when put on fire get converted into volatile medicated fumes. These fumes enter into smallest units of tissues of genital tract (due to sooksham-srotogami), dilates blood vessels and helps in oxidation of blood that leads to adequate tissue perfusion\textsuperscript{17}. This antiseptic & sterilized environment helps in disinfection of uterine cavity, vagina & vulva; reduces PH & laxity of pubic muscles\textsuperscript{18}.Thus helps in reducing pain, decreasing vaginal discharge, healing of wound & prevent growth of microorganisms.

Table 1: Indications of Yonidhoopana in Stri Roga, Prasuta and Sutika

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Vyadhi</th>
<th>Dhoopan dravya</th>
<th>Karma</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Yonisrava\textsuperscript{19}</td>
<td>Sarla, yava, guggulu, katuk-matsya-ghritisaha.</td>
<td>Sravahara</td>
<td>Ch.Chi 30/120</td>
</tr>
<tr>
<td>2.</td>
<td>Yonikand\textsuperscript{20} Shleshmaja yonivyapada Alpasparsha yoni</td>
<td>Bruhatiphala, haridra, daruhaaridra</td>
<td>Kandughna</td>
<td>Su.U.38/27</td>
</tr>
<tr>
<td>3.</td>
<td>Vranaropaka\textsuperscript{21}</td>
<td>Sarshapa, nimhapatra with ghrita &amp; lavana</td>
<td>Vranaropaka</td>
<td>Su.Su.19/28</td>
</tr>
<tr>
<td>4.</td>
<td>Garbhanirodhak\textsuperscript{22}</td>
<td>Katu-Nimbakashtha</td>
<td>Shukraghna</td>
<td>Y.R.Strirogadhikara</td>
</tr>
<tr>
<td>5.</td>
<td>Garbhasanga\textsuperscript{23}</td>
<td>-Krishnsarpanirmoka, Pinditaka -Bhurjapatra, katihari, katutumbi, kushtha, sarshapa &amp; snakemolt</td>
<td>Aavipra-durbhava</td>
<td>Su.Sh.10/13 A.S.Sh.2 A.H.Sha.1/86</td>
</tr>
<tr>
<td>6.</td>
<td>Vilambita prasava\textsuperscript{24} Anagata Prasava\textsuperscript{25}</td>
<td>Krishansarpanirmoka, Tagar -Bhurjapatradhoom, Shinshpasardhoom</td>
<td>Aavipra-durbhava</td>
<td>Y.R.Sutikarogadhikara Ch.Sh.8/38</td>
</tr>
<tr>
<td>7.</td>
<td>Aprasanga\textsuperscript{26},</td>
<td>Katukalabu, sarshapa, kritvedhana, sarpanirmoka with katutal. - Langalimookalka -Bhoorjapatra, kanchmani, sarpanirmoka</td>
<td>Gobhashaya sankochaka</td>
<td>Su.Sh.30/23</td>
</tr>
</tbody>
</table>

References:
1. Anita & Sujata Kadam: Effect Of Yonidhoopana And Its Antimicrobial Activity In Stri Roga & Prasuti Tantra: A Review Article

\textsuperscript{10} Acharya Kashyapa
\textsuperscript{11} Dhoopan drugs
\textsuperscript{12} Rakshoghana karama
\textsuperscript{13} Vyadhinashana
\textsuperscript{14} Dwiraha karyed dhoopam dashratram atan-dritas
\textsuperscript{15} Amount for Dhoopan
\textsuperscript{16} Yonidhoopan
\textsuperscript{17} Mode of action of Yonidhoopana
\textsuperscript{18} Yonidhoopana: Yoni + Dhoopana

Dhoopan is also indicated in many yoniyapadas like in Shleshmala, Acharna, Vipluta and Uppluta yonivyapad.

**RESULTS & DISCUSSION**

Yonidhoopana is indicated in many yonirogas. It plays an important role in sutikaparicharya due to its anti-inflammatory, antimicrobial effect both on local site of vulva-vagina and maintains the normal vaginal flora. Different research studies are conducted in various institutes to prove the effect of yonidhoopana drugs.

### Table 2: Research Studies regarding Yonidhoopana karma in different Stri Roga & Prasuti tantra.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Institute</th>
<th>Author/Year</th>
<th>Title</th>
<th>Dhoopana drugs</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bharati Vidya-Deemed University, College of Ayurveda, Pune</td>
<td>Dr. Swati Surendra Mohite; 2013</td>
<td>Determining the efficacy of three Ayurvedic formulations &amp; Dhoopana (Medicinal Fumigation) in preventing of infections post vaginal delivery with Episiotomy.</td>
<td>Vidanga, Shatapushpa, Jatamansi (2gm each) Guggulu (5gms). For 5days daily on episiotomy wound.</td>
<td>91% of cases did not experience any pain during 5days of dhoopana assessed by VAS scale. Episiotomy wound of 99.7% of cases healed without any infections or complications.</td>
</tr>
<tr>
<td>2.</td>
<td>Bharati Vidya-Deemed University, College of Ayurveda, Pune</td>
<td>Dr. Vidya Maruti Magar; Dr.S.R. Gholap; January 2017</td>
<td>Evaluation of Dhupan Karma in Sutika Paricharya.</td>
<td>Kustha, Agru, Guggulu. For 7days on episiotomy wound.</td>
<td>100% effect on udarshool P&lt;0.05, 80.4% effect in kukshihras P&lt;0.05, 97% effect in yonivranashoola reduction P&lt;0.05. Yonivranashotha grade 0 in 100% patients. Yonivran approximation in 94% patient was grade 0 (complete). Yonigata raktasrava P&lt;0.05 within range. Vaginal PH reduce from 7.4 to 6.6 with P&lt;0.05. Vaginal temperature raised after dhoopan from 99.3 to 99.6. Average grabhashayaharas of 1.25cm/day.</td>
</tr>
</tbody>
</table>
| 3.   | Bharati Vidya-Deemed University, College of Ayurveda, Pune | Seema R.Gholap, N.V.Khairnar; September 2017 | Validation of effect of an Ayurvedic therapeutic procedure, Dhashmoolkwath & Dhoopan Fumigation with medicinal herbs | Agaru, Kushtha Guggulu | Patients of puerperal period 2nd-8th day postpartum and subjected to dhoopana karma. Vaginal PH decreased 7.2 to 6.5. Dhoopana maintained normal involution of Stri Roga & Prasuti Tantra: A Review Article
Main changes occur during sutika avastha are wounds at placental and genital tract sites along with vata prakop, dhatukshaya, kled-rakta nirsuti and agnimandaya. To avoid severe complications & to regain health after prasava dietary regimen and lifestyle modifications in sutika (sutika svasthriya) are advised. Yonidhoopan is mentioned as rakshoghana upkarma done for 7-10days in sutika paricharya. Effect of dhoopana are observed in different research studies in sutika paricharya that are reduction in udarshool, involution of uterus, makes yonigata raktasrava sterile, reduction in PH of vagina, episiotomy wound approximation, slightly raised vaginal temperature that helps in reducing pain and promotes healing.

Dhoopana drugs used in fumigation of episiotomy are kustha, agaru, guggulu, vidanga, jatamansi, shatpushpa; have proved their krimighna, vranaropana, shothghna, shoolaghna and vimlapana karma.

In another study, effect of Saraladi yonidhoopana in sweta pradar was significant, showing reduction in symptoms itching vulva, white discharge, dyspareunia and foul smell. Dhoopana drugs sarala, yava and guggulu due to their ruksha, laghu, tikshna, ushna, shothhara, krimihara, shoolaghna, svravahara properties have shown significant results both in subjective symptoms and maintained vaginal flora.

Yonidhoopana by krishna sarpa nirmoka helps in sukhrasava by enhancing smooth and powerful uterine contraction. Biochemical analysis of nirmoka showed presence of nitrates in the form of nitrous oxide when given as dhoopana in second stage of labor; it induced relaxation of cervix as well as enhanced reflex uterine contractions, dilated the vagina and relaxed perineum. Dhoopana possibly softened the tissues by making them more susceptible to dilate without tear and helped in sukhrasava. Sarpa nirmoka of 50cm put over heated charcoal in sarava and dhoopana was given to well expose vaginal walls and cervix for 2-3minutes between the uterine contractions. It was given maximum in three sessions depending on progress of labour. Dhoopana drugs with laghu, ruksha, ushan & volatile properties, katu vipaka and ushna veerya produces krimighna, kandughna, kledshoshak, jantughans, vranashodhak & vedanashamak, shothhara effect. So, it is recommended for maintaining genital health and preventing genital tract infections or puerperal sepsis.
Thus, *dhoopana* shows significant analgesic, anti-inflammatory and anti-microbial action locally at vagina without need of antibiotics & analgesic drugs.\(^3\)

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</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>KLE’s Shri B.M.K. Ayurveda Mahavidyalaya, Shahpur Belgaun.</td>
<td>Dr. Sumitha L. Dr B.S. Prasad; Dec 2014</td>
<td>Study of Krimighna effect of “Dhup” An Ayurvedic dhoopana Product as a Rakshoghna Dhoopana of Sensitivity method.</td>
<td>Guggulu, Ushira, Vacha, Rala, Nimba, Arka, Devadaru, Loban.</td>
<td>Dhupa Dhoopana showed remarkable sensitivity against <em>Staphylococcus aureus</em>, <em>S. abony</em> and <em>E.coli</em> by displaying maximum zone of clearance of 3mm, 2.6mm and 2mm diameter respectively.</td>
</tr>
<tr>
<td>2.</td>
<td>Sumatibhai Shah Ayurveda Mahavidyalaya Malvadi.</td>
<td>Shrvani M. Gund, Ramchandra P. Babar, Sunanda V. Vanarase, Rashmi A. Kale. 2017</td>
<td>A Comparative study of Arishta Dhoopana Yoga &amp; Formalin for their Antimicrobial Effect as a Fumigating agent on <em>E.coli</em>.</td>
<td>Neem Panchang powder</td>
<td>Arishta Dhoopana Yoga and Formalin were compared on <em>E. coli</em> sprayed glass experimental chambers of 1M3. The colony forming units of <em>E.coli</em> by taking swabs for culture before and after fumigation (at 30 min, 3 Hours) were noted. Significant result with P value &lt;0.05 was seen in both the groups showing reduction of <em>E.coli</em>.</td>
</tr>
<tr>
<td>3.</td>
<td>Dr. Harisingh Gour Central University, Sagar, Madhya Pradesh, India.</td>
<td>Sushma Bagde Bhatywalkar, Prashant Shukla, Rupesh K. Srivastava. May 2019</td>
<td>Validation of environmental disinfection efficiency of traditional Ayurvedic fumigation practices.</td>
<td>Garlic peel, Turmeric powder, Carom seeds, Loban</td>
<td>The airborne bacterial count without fumigation (control) was 75.66 ± 4.93 cfu/m³ that got reduced to 21.55 ± 3.34, 30.55 ± 8.07, 30.33 ± 1.2 and 30.66 ± 6.33cfu/m³ upon fumigation with garlic peel, turmeric, ajwain and loban powder respectively. In addition, garlic peel is effective in disinfecting surfaces of the drug resistant MPSA bacteria.</td>
</tr>
</tbody>
</table>

In above mentioned antimicrobial studies guggulu, agaru, sarshapa, nimbapatra have shown significant results in disinfection of wound. Garlic peel, turmeric, carom seeds and loban dhoopana have proved their effect in reduction of airborne bacterial count tested independently whereas garlic peel alone is also effective in disinfecting surfaces of drug resistant MPSA bacteria responsible for nosocomial infections. *Nimda panchang* powder herbal fumigation have shown antimicrobial effect through microbial cell wall breakdown. 10% chloroform extract of neem has antibacterial effect against *Staphylococcus aureus* and *E.coli*. Therefore, it can be used in operation theatres, hospital wards and in infected wounds for fumigation. *Dhupa dhoopana* drugs showed remarkable sensitivity against *Staphylococcus aureus*, *S.abony* & *E.coli*. Aparajita dhooma choorna dhoopana has been proved highly effective against bacteria and fungi just in a day upto 95% and 96% respectively in the area of sterilisation of migrant labour camps in COVID epidemic.

**CONCLUSION**

*Dhoopana* drugs having *katu-tikta, laghu-ruksha, tikshna-ushna* properties and volatile contents proved to be *kandughna, kledoshshaka, vranaropaka, shothahara, jantughna, vedanashamaka*. *Yonidhoopana*
means fumigation of vulva-vagina has shown significant effect in different genital disorders, sutika, sukhaprasava and improves defence mechanism of female genital tract by maintaining healthy vaginal flora. Various drugs has shown antimicrobial action against E.coli, Staphylococcus aureus, S.bony, Candida albicans. Therefore, yonidhoopana has bacteriostatic action, economical, effective procedure and easy to perform without any harmful effects.

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