



Study of Krimighna Effect of "Dhup" An Ayurvedic Dhoopana Product As A Rakshoghna Dhoopana By Sensitivity Method

KEYWORDS

Dhoopana, Bacterial sensitivity

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ABSTRACT Air around us can get contaminated by millions of micro-organisms. Thus it carries a lot of significance to disinfect the area where we reside. The purpose of traditional fumigation techniques may be to reduce the microbial load to non pathogenic level. Which in turn result anticipation of many infectious diseases. In the present study an attempt is made to estimate sensitivity of Dhoopana of an indigenous fumigation formulation 'DHUP' Taking all these into consideration, in present study an attempt is made to estimate bacterial sensitivity of Dhoopana, an indigenous fumigation formulation 'DHUP' DHUP is prepared by making coarse powder of various herbal drugs. From Hi media laboratory artificial media of *Staphylococcus aureus*, *salmonella abony* and *E-Coli* were procured. 9 plates (3 each) containing bacteria was exposed for 5 minutes of Dhup dhoopana. Growth was observed for sensitivity after 24 hrs of incubation. For comparison paper Dhoopana was used as placebo. Result is found significant as Dhup Dhoopana showed remarkable antibacterial property against *staphylococcus aureus*, *salmonella abony* and *E-coli* by displaying maximum zone of clearance of 3mm, 2.6mm, and 2mm diameter respectively.

Introduction:

Fast and changing life styles are contaminating the basic needs of life. The contamination of air by infections and pollutions are crucial among them. Pathogenic microbes present in the environment around us are responsible for various health related problems. The prevalence shows that, air born diseases are more compare to vector born diseases. Hence it is the right time to think about the control measures of infectious agents in terms of preventive as well as curative measures of diseases.

In day today life infectious diseases are the major problem, among them the *E-Coli*, *Salmonella abony* and *Staphylococcus aureus* are the most common and dangerous organisms. Therefore the topic has been selected to rule out the effect of herbal drugs on these bacteria's by sensitivity method.

The existence of organisms and their role in the cause of several infectious diseases have been recognized and elaborated in Ayurveda as well as modern science and for the prevention and cure of such diseases; the drugs and therapies are prescribed in Ayurvedic text. The various dhoopan dravyas are mentioned in granthas; Most of these medicines might have bacteriostatic or bactericidal effect. It is today's need to elaborate these properties of herbal medicines.

Concept of Krumi in Ayurveda, has been used in broader sense, it includes all organisms covering wide range of infection and infestation. To get prevention from these krumi (microbs), rakshoghna vidhi is mentioned. Dhoopana (fumigation) is one of such modality. Ayurvedic literature wherein fumigation is indicated for sterilisation of operation theatres as well as labour theatres and also in wound management. (2) Dhoopana has been followed as a tradition in various religious procedures. Sterilization through fumigation may be purpose of various traditional rituals like homa, havana etc. Rakshoghna vidhi is indicated in our classics. In this various medicinal plants were burnt on fire and the smoke generated from it used to make sterilization of different areas where chance of infections are more. (3)

In the present context Fumigation formulation is prepared out of the selected antibacterial and antifungal drugs. Though most of the selected drugs individually reported for antimicrobial property, it is proposed that in combination the formulation may exert maximum antimicrobial property. With this hypothesis the study has been carried out.

Aims & objectives:

To assess the antimicrobial activity of Dhup dhoopana as Rakshoghna dhoopana against *E-Coli*, *Staphylococcus aureus* and *Salmonella abony* by sensitivity method.

MATERIAL AND METHODS**Preparation of 'DHUP':**

The formulation is prepared at GMP certified KLEU'S Ayurvedic pharmacy under experts supervision. The drugs which are indicated for Dhoopana and Krumihara property classically are selected and taken in below mentioned proportion. All the drugs were authenticated in Central Research Facility of Shri. B M K Ayurveda mahavidyalaya

The ingredients are coarse powdered (Mesh size 40-60)⁴ separately and homogenous mixture is prepared by mixing all the ingredients.

Ingredients:**Table No: 1 Showing composition of DHUP⁵**

Sr No.	Dravya	LatinName	Family	Official part	Proportion
1	Guggulu	Commifera mukul Engl.	Burseraceae	Niryasa	1.5 parts
2	Ushira	Vetiveria zizanooids Linn.	Graminae	Root	1.5 parts
3	Vacha	Acorus calamus Linn.	Araceae	Rhizome	1 part
4	Rala	Shorea robusta Gaertn.	Dipterocarpaceae	Niryasa	1.5 parts
5	Nimba	Azadirecta indica Juss.	Meliaceae	Stem bark	1.5 parts

Sr No.	Dravya	LatinName	Family	Official part	Proportion
6	Arka	Calotropis procera Linn	Asclepiadaceae	Moola	1.5 parts
7	Devadaru	Cedrus deodara Loud.	Pinaceae	Bark	1.5 parts
8	Loban	Boswellia carterii Roxb.	Bursuraceae	Niryasa	3 parts

Most of the drugs selected are Katu, Tikta, Kashaya in rasa, Ushna virya, Katu vipaka, Krimighna and kushta hara in action.

Methods:

Bacterial sensitivity method

A pilot study was done where different amount of Dhup churna, and different time was provided for dhoopana. The observation shows that the various large amount of churna produces more dhoopa which flows out of the sharava. The increase in time for dhoopana to the organisms also causes overflow of dhoopa and excessive exposure of organisms to the environment. The final value for amount of churna and the time for dhoopana calculated from this study is Dhup choorna in quantity of 2 gm. and the ideal time for dhoopana is 2 minute, is sufficient for the test.

Staphylococcus aureus, Salmonella abony and E-coli were grown on artificial media, procured from Hi media laboratory limited.

Material used for sensitivity:

Dhup churna, Mud sharave, Tripod stand and culture plates with organisms grown in it.

Procedure

2gm of Dhup churna was taken in a mud sharava. A tripod stand of 20 cm length kept surrounding the sharava. The Dhup churna was burned. The dhoopa arising from sharava was observed. The Petri dish, containing bacterial lawn culture, exposed to the out coming dhooma for 2 minute by keeping it over tripod stand invertedly. After 2 minutes of dhoopana, the petri dish was closed and kept in incubator at 37 ° c for 24 hrs. After 24 hrs the culture plates opened and observed for the growth of bacteria. The dhooma is produced by a handmade paper taken as placebo.

OBSERVATION & RESULTS

Dhup Dhoopana showed remarkable sensitivity against Staphylococcus aureus, Salmonella abony and E-coli by displaying maximum zone of clearance of 3mm, 2.6mm, and 2mm diameter respectively. Placebo doesn't show any resistance against the micro organisms.

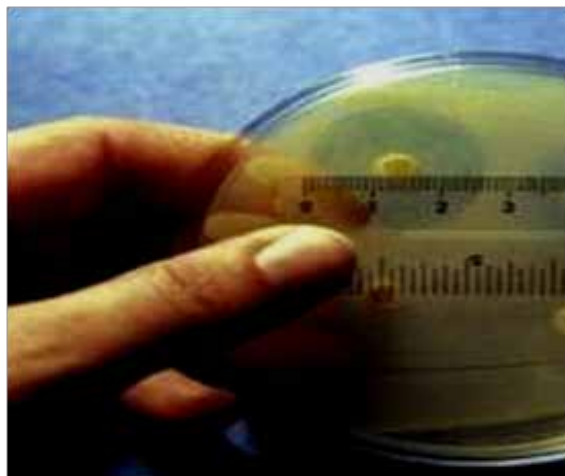
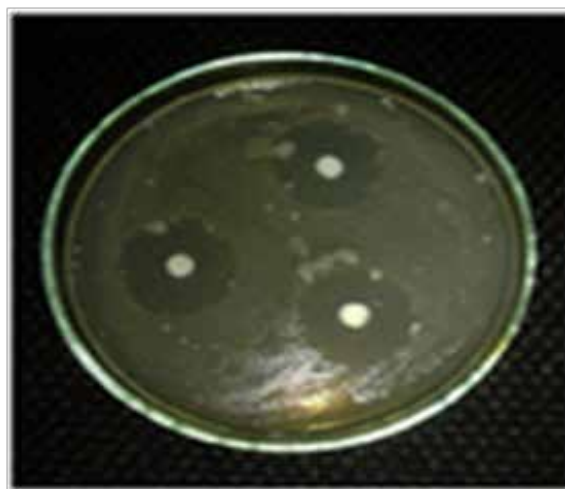
Figure no.1 Showing zone of clearance Against Staphylococcus aureus about 3 cm



Figure no.2 Showing zone of clearance Against E-coli about 2 cm



Figure no.3 & 4 Showing zone of clearance against Salmonella abony about 2.6 cm



Discussion:

Ayurvedic literature mentioned many dravyas comes under the heading krumighna, kandughna and rakshoghna which are useful against krumis. These dravyas used in various forms for the bactericidal purpose. The sensitivity of Dhup dhoopa may be attributed due to - Mahabhoot pradhyana and Guna. Agni and vayu mahabhoot pradhan dravyas are used for this procedure. The mahabhoot is laghu, shit, ruksha, vishad in nature. It promotes the roughness, erosion, movement, vishadatva and lightness wherever it presents. The dhoopa may dries up the intracellular fluid matrix in

a bacterial cell by its panchabhautika concentration and by properties of mahabhootas. These dravyas are volatile in action and thus they keep wound and surrounding of wound, clean and away from krumi.

Dhup Dhoopana showed remarkable sensitivity against Staphylococcus aureus, Salmonella abony and E-coli. The bacteria do not show any effect of placebo dhoopa.

SCOPE FOR FURTHER STUDY

Further research in this direction with other organisms to assess their sensitivity can be done.

CONCLUSION:

Dhup dhoopa is more sensitive than Placebo for selected bacteria i.e. Staphylococcus aureus and Salmonella abony and E-Coli.

REFERENCE

1. Mishra Brahmashankar, Bhavaprakasha; Chaukhamba Sanskrit Sansthana, Varanasi, 8th edition 1997, 1st part Chap. No. 6 Misraprakaran Shlok No. 189-190; Pg-185-186. | 2. Vd. Yadavji Trikamji Acharya, Sushrut Samhita with the Nibandhasangraha Commentary of Dalhanacharya, Chaukhamba Publication, Varanasi, 6th edition, 1997; Su. Chi. Chap 40.Dhoom-Nasya-Kavalgraha Chikitsa, Shlok No. 19, Pg No. 554 | 3. Shastri Laxmipati and Shastri Bramhashankar, Yogaratnakara; Chaukhamba Sanskrita Sansthana, Varansi, 7th ed. 2002, Vrana- shodhan-Ropan Vidhi, Pg 177, Shloka 14. | 4. The Ayurvedic Formulary of India.2nd ed. New Delhi: Govt of India, Ministry of Health and Family welfare dept of Indian system of medicine; Part 1 & 2 | 5. Shastri JLN, Dravyaguna vijnana: Chaukhamba orientalia, Varanasi2nd edition, 2005 |