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***IN-VITRO ANTI-BACTERIAL ACTIVITY OF SINDOORADI
MALAHAMA***

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ABSTRACT

Infection of wounds are caused by various pathogenic organisms which get lodged in healthy or diseased persons wound. In diabetes and immune compromised due to devitalizing changes and injuries, gradually increasing microbial load in the etiopathogenesis again convert these wounds more complicated¹. Therefore, medical science needed to explore such a safe strong and highly effective medicine from natural source for in vitro as well as in vivo research and procure a better formulation which can be a very effective against these types of various infected wounds. There are so many formulation on the basis of experience.out of those preparations *Sindooradi malahama* has been selected for infected, secretory and chronic wounds as mentioned in *Bhaisajya samhita*⁵. In vitro study to know the antibacterial activity against the different infected wound swabs and drain swabs, which has been carried out in microbiology laboratory of Parul Institute of Applied Sciences. Agar well diffusion method was followed to assess the antibacterial activity on different infected samples and the zone of inhibition were analyzed on the standard protocol of experimental study⁴. It is observed that those samples who were containing different types of bacteria have shown the clear inhibition zone which proved a good antibacterial activity against collected samples. All the samples were found grade 3 to grade 4 sensitivity against *Sindooradi malahama* with different concentration⁶.

Keywords: Nutrient agar, Culture & sensitivity, Infected wound, Sterile swab culture, *Sindooradi malahama* (Ointment of led peroxide), Bactericidal Activity

INTRODUCTION

Shalya tantra is the branch of *Ayurveda* in which everywhere dealing with different types of healing and non-healing wound is very common. We can assume an importance of swellings and infected wound only by this statement that Father of surgery the *Acharya Sushruta* stated the Vaidya by name of *chandala* one who is not able to treat the ripen swellings and wounds. Because they were knowing from *vedic era* only that wound get deeply infected after improper time excision or handling carelessly of wounds so we can say that infection and increasing bacterial load in wounds were a super most problem since ancient time only.

Sindooradi malahama is the one of the ointment preparation mentioned in the *bhaisajya Samhita* which contains Led peroxide (*Naga sindoora*), Borax (*Tankana*), Sesame oil (*til taila*), Bee wax (*siktha*), all these ingredient mixed collectively and this ointment is made as per classics reference⁷. Which is mentioned that it will act as good debridement and healing agent of the infected wounds (*Dushta vrana*). In modern science this activity only can be produced by onley antibacterial agents.

Antibacterial means anything that destroys bacteria or suppresses their growth or their ability to reproduce. Heat,

chemicals such as chlorine, and antibiotic drugs all have antibacterial properties. In this study we examined antibacterial activity of this *Sindooradi malahama* in different sample swabs of infected wounds.

MATERIAL AND METHODS:-

Culture preparation: Freshly 8 sample of pus from infected pyogenic wound was taken before 2hrs and dissolved in 10ml distilled water in sterile swab with plastic test tube.

Media preparation⁴:

- 28 gram of nutrition agar powder taken in large autoclaved sterile conical flask and well dissolved in 1 liter of distilled water.
- Mixture was heated stirred to fully dissolve all components to get homogeneous mixture.
- This mixture was autoclaved at 121°C temp. & 15lbs pressure for 20 minutes.
- Further after taking out from autoclave chamber checked for homogenous mixture.
- Mixture was poured on sterile glass Petri dish and waited till well solidifying of the agar on dish.
- Collected Swabs were directly streaked on eight agar plates.



Sample Preparation:

- *Sindooradi Malahama* was kept in refrigerator at 4 degree Celsius for well diffusion on agar plate for 15 minutes.

Procedure of sampling:

- Weight approx-1gm sample from the prepared *Sindooradi Malahama* was taken on the 8 numbers of nutritional agar plate with help of the autoclaved small thin glass rod in the dip made in middle of plate.

(This whole procedure from preparation of agar plate, streaking of wound swab on nutrition agar plate till dipping of

Sindooradi Malahama on streaked petri dish was performed carefully in Laminar Air Flow).

Incubation of prepared plates:

- After completion this procedure all plates were kept in bacteriological incubator on 37 degree Celsius for 24 hours which provides favourable environment growth of spreaded samples.

Observations:

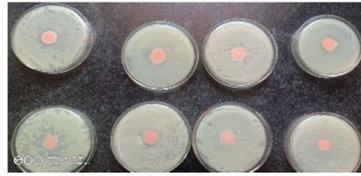
Antibacterial effect of *Sindooradi Malahama* observed on nutrition agar plate on different 8 sample of pyogenic wound.

1st day observation:

Front view:



Backward view:



Sample A:



Sample B:



Sample C:



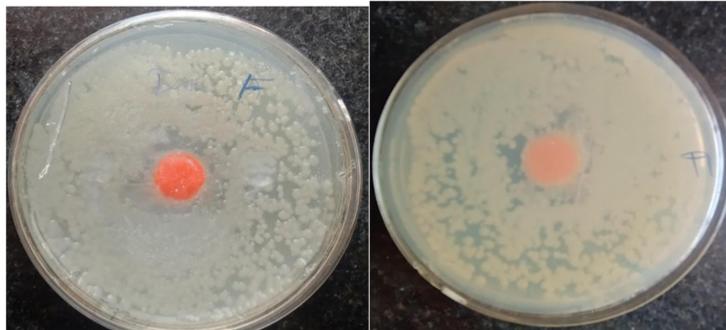
Sample D:



Sample E:



Sample F:



Sample G:

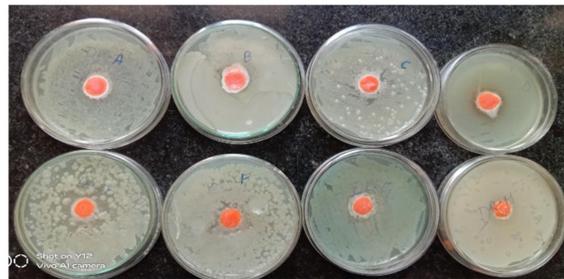


Sample H:



(After observation of these discs again all were incubated for next 24hrs for observing further activity of sample to gain more bacterial growth)

2nd day of observation:



Observations:

Antibacterial effect of *Sindooradi Malahama* observed on nutrition agar plate on different 8 sample of pyogenic wound after incubation of the samples on first day 2nd day observation was done where bacterial growth was not clearly visible. But antibacterial activity and inhibition

zone was observed which was measured with help of centimeter scale.

After that petri dish were incubated again for more growth and clear vision for the bacterial growth inhibition. After 24hrs 2nd day again inhibition zone measured. This showed below given table inhibition.

Sample	1 st day inhibition zone(cm)	2 nd day inhibition zone(cm)
A	2.4	3.5
B	5	2.5
C	5(scanty)	Scanty(+)
D	Scanty(+)	Scanty(+)
E	2.5	3
F	3.5	Scanty diffused
G	Ab	2.2
H	3.6	4

RESULT:

Sindooradi Malahama showed anti-bacterial activity on different given samples of infected wound.

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CONCLUSION :-

which proves that from huge ocean of Ayurveda randomly selected a drug has showed antibacterial activity as a classical medicine in the same way there are so many formulations which should be researched and use them as noble dressing agent.

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