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Antimicrobial Activity of *Arunshikahar Lepa* Mentioned in *Sharangdhar Samhita*.

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ABSTARCT:

Introduction: *ARUNSHIKA*, the disease explained under kshudra rogas by Acharyas. It is mainly co-related to scalp sclerosis which is caused by Staphyalococcus aureus(staph). Local application of drugs is effective and feasible for skin and scalp related conditions. So Arunshikarahar lepa mentioned in Sharangdhar samhita is selected for the study. **Aim:** To study anti microbial activity of *Arunshikahar lepa* mentioned in *Sharangdhar Samhita*: **Objectives:** Preparation of *Arunshikahar lepa*, Physico chemical study *Arunshikahar lepa* and Anti microbial study *Arunshikahar lepa*. **Methodology:** The antimicrobial activity of *Arunshikahar lepa* was tested by using Agar disc diffusion method along with MIC. **Result & Conclusion:** Result & Conclusions were drawn on the basis of physico chemical study and anti microbial study results of *Arunshikahar lepa* mentioned in *Sharangdhar Samhita*.

Keywords: *Arunshikahar Lepa*, *Arunshika*, *Kshudra Rogas*, *Sharangdhar* Samhita, Scalp Sclerosis, Staphylococcus aureus, Antimicrobial Activity

INTRODUCTION

Background:

- *ARUNSHIKA*, the condition explained under *Kshudra rogas* by *Acharyas*. According to *Ayurveda*, Arunshika is occurred due to *Kapha*, *Rakta* and *Krumi dushti*, as the description in *Sushrut samhita* states *Arunshika* is the condition results in to pustules having multiple small openings.[1]
- This description co-relates with the modern science explained Scalp folliculitis.

- Common organism causing Scalp follicultis is Staphyalococcus aureus(staph)[2].
- For topical application for medicinal use, *Ayurveda* explains *Lepa kalpana*[3].
- *Arunshikahar Lepa*[4] is selected for the study to ensure its activity on Staphtlococcus aureus in vitro.

Aim:

- To study anti microbial activity of *Arunshikahar lepa* mentioned in *Sharangdhar samhita*.

Objectives:

- To study Physico-chemical parameters of *Arunshikahar lepa*.
- To investigate the in vitro antimicrobial activity of *Arunshikahar lepa* against Staphylococcus aureus with the standard antibiotic Doxycycline.
- To determine the minimum inhibitory concentration (MIC) of *Arunshikahar lepa* against Staphylococcus aureus.

MATERIALS AND METHODS

Preparation of Arunshikahar Lepa:

Table 1: Ingredients detail for formulation of *Arunshikahar lepa*

Sr, No.	Ingredients	Botanical Name	Part used	Form	Quantity taken (gm)
1	*Khadir*	*Acacia catechu*	Skin bark	Powder	25 gm
2	*Nimb*	*Azadirachta indica*	Skin bark	Powder	25 gm
3	*Jambu*	*Syzygium cumini*	Skin bark	Powder	25 gm
4	*Kutaj*	*Holarrhena antidysentrica*	Skin bark	Powder	25 gm
5	*Saindhav*	Rock Salt		Powder	25gm
6	*Gomutra*	Cow's Urine		Liquid	40 ml

Preparation of *Lepa*[5]

Using mesh, the powdered ingredients (Table 1) were sieved and accurately weighed, then mixed geometrically to ensure even mixing. In order to evaluate it, the product was placed in an airtight container.

The source was standard also certified for all plant/herbal ingredients and necessary quality control measures were taken care.

Figure 1 : Prepared *Arunshikahar Lepa*

Physico-chemical Parameters observed:

Table 2: Organoleptic characters of formulation

Sr no.	Parameters	Sample of *Arunshaikahar lepa*
1	Colour	Brown
2	Odour	Gomutra characteristic
3	Touch	Coarse
4	Consistency	Soft
5	Spreadability	Partially passes test
6	Loss on drying	67%
7	Ash value	9 %
8	pH value	4.5
9	Skin irritation test	Non- irritable

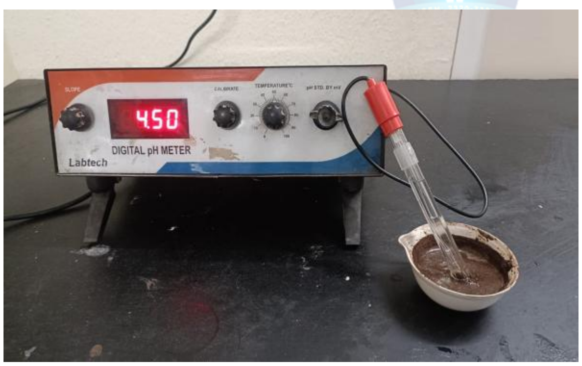

Figure 2: pH meter showing pH for *Arunshiakahar lepa*

Antimicrobial Susceptibility Testing:

S.Aureus grown at a temperature range between 15°C to 45°C.

Agar disk diffusion method used for antimicrobial susceptibility testing.

In this method, the test agar plate was swabbed with a standardized concentration of the S. aureus, and then paper disks containing *Arunshikahar lepa* at different concentrations - 100%, 50%, 25% and Doxycycline concentration were placed on the lawn of bacteria.

Plates are incubated at 37°C for 24 hrs. After overnight incubation, the diameter of the zone of inhibited growth around the disk was measured.

Figure 3: Agar disk showing zone of inhibitions

Data Analysis:

Table 3: Zone of inhibitions of different concentration of drug

Name of organism	Zone of inhibition in mm			
Concentration of drug	25%	50 %	100 %	Control
Staphylocoocus arueus	No zone of inhibition	7mm	11mm	16mm

RESULTS

The maximum zone of inhibition observed for *Arunshikahar lepa* at 100% concentration compare to 50% and 25% concentrations.

Antimicrobial activity of *Arunshikahar lepa* is significant compare to Doxycycline.

DISCUSSION

In Physico chemical parameters, pH of *Arunshikahar lepa* is balanced for skin which will be helpful for proper absorption of lepa. Ingredients like *Nimba*, *Saindhava* and *Gomutra* are effective for the anti microbial activity as *Acharyas* stated these as *krimighan*. *Arunshikahar lepa* shows maximum zone of inhibition in 100% concentration for MIC.

CONCLUSION

Significant antimicrobial activity observed of *Arunshikahar lepa* against Staphylococcus aureus.

This anti microbial action of *Arunshikahar lepa* is responsible for subside the infection. As topical treatment is more effective for scalp an skin infections like folliciltis, *Arunshikahar lepa* as a promising therapeutic agent. Clinical trials should be conducted for future research directions.

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