

## EVALUATION OF ANTIMICROBIAL ACTIVITY OF MARITA SHILAJATU

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**ABSTRACT**

Microbes are the microorganisms that are too small to see with naked eye. These are found on every surface and in every habitat around the world. These are categorized into five major group likes- bacteria, viruses, fungi, algae and protozoa. Here for the study of shilajatu bacterial and fungal organisms are taken. These microbes are entered into the human body through any channel and became a causative factor to produce a disease. The description of these micro organismis also found in ayurveda in the form of krimi. The term krimi has been used in broader sense that it includes all pathogenic and non pathogenic organism covering the wide range of infection and infestation. **Material and Methods:** Marita shilajatu, Benzathine penicillin (antibacterial), Flucanazole (antifungal), distilled water formed the drug materials and 4 strains of bacteria & 2 strains of fungi, agar media, chemicals & glass wears formed the materials for study. Cup plate method was followed. The marita shilajatu in all three concentration ie 1%, 2% & 5% having less zone of inhibition than standard drug ie benzathine penicillin and fluconazole. This research studies on shilajatu have provided the data that marita shilajatu is not having much antimicrobial property becoz may be due to marana process its all active ingredient get burnt.

**KEYWORDS:** Marita shilajatu, krimi, benzathine penicillin, fluconazole.**INTRODUCTION**

Since the vedic period the word krimi are well known to human being. Ancient acharya were well aware regarding the presence of the microorganism. The description of krimis is available in ancient texts. The elaborate explanation regarding micro-organisms in the name of krimi, jantu etc. are found in the Vedas perticulary in atharveda.<sup>[1]</sup>

The word krimi derived from karma dhatu meaning, **Bhramesamprasaran cha** means which move with pada.<sup>[2]</sup> In ayurvedic text there are elobarate explanation regarding the word krimi.

To fight against these infectious disease, there are a number of modern antimicrobial agent are available in market but they are not free of adverse effect. Further their effect are also not sustained for long time unless the real cause of the disease is not rooted out.<sup>[3]</sup> So there is requirement to find a good antimicrobial agent without side effect or with minimal side effect.

Hence an attempt has been try to make on antimicrobial activity of shilajatu by taken this article.

**MATERIALS AND METHODS<sup>[4,6]</sup>****Materials****Drugs:** Marita shilajatu, Benzathine penicillin, Flucanazole, Distilled water.**Micro organisms****Bacteria:** Escheria coli, Staphylococcus Aureus, Pseudomonas aeruginosa, Klebsiella species.**Fungi:** Candida albicans, Aspergullus niger.**Method****Pharmaceutical study**Shodhana of Shilajatu: RRS 2/110-112<sup>[7]</sup>Marana of Shilajatu<sup>[6]</sup>: RRS 2/113<sup>[8]</sup>**Anti microbial activity**Anti microbial activity was carried out according to CUP PLATE Method and it was conducted at BLDEA's College of Pharmacy Vijayapur.<sup>[9,11]</sup>

**Interpretation of Results**

Results were interpreted by measuring the zone of inhibition shown by samples on test organisms.

a) Sensitive (S) Zone – Diameter wider than 8mm.

b) Intermediate (I) Zone – Diameter between 6mm to 8mm.

c) Resistant (R) Zone – No zone of inhibition or diameter less than 6mm.

**OBSERVATION AND RESULTS**

**Table No. 1: Shows zone of inhibition (in mm) of 1%, 2% & 5% solutions of marita shilajatu in comparison with standard & control drug.**

Soln of drugs			Zone of inhibition in mm on test organism					
			Bacterial organism				Fungal organism	
			E.C	S.A	P.A	K.S	C.A	A.N
Test drug	Marita shilajatu	1%	12 mm	14mm	14mm	12mm	12mm	10mm
		2%	14 mm	16 mm	15 mm	14mm	14mm	16mm
		5%	22mm	24mm	23mm	22mm	20mm	18mm
Standard drug	B.P		28 mm	24 mm	26 mm	28 mm		
	Fcn						24 mm	24 mm
Control			0 mm	0mm	0mm	0mm	0mm	0mm

**E.C:** Escheria coli **S.A:** Staphylococcus Aureus **P.A:** Staphylococcus Aureus **K.S:** Klebsiella species. **C.A:** Candida albicans **A.N:** Aspergillus niger.

Aureus, Pseudomonas Aeruginosa, Klebsiella species, Candida albicans & Aspergillus niger.

**DISCUSSION**

1%, 2% & 5% solutions of marita shilajatu were tested against 6 strains of micro organisms for antimicrobial activity. 0.5 ml of marita shilajatu 1% (5000µg), 2% (10000µg) & 5% (25000µg / 0.5 ml) were used as the test drug solutions for antimicrobial activity.

Benzathine penicillin was used as the standard drug for antibacterial activity (1250 µg/0.5ml) & Flucanazole was used as the standard drug for antifungal activity (500 µg/0.5ml).

0.5ml of test drug solutions i.e. marita shilajatu, 1 control drug solution (distill water) and 2 standard drug solutions (Benzathine Penicillin & Flucanazole) were injected into the bore, having the maximum capacity 0.5ml.ms.

On bacteria & fungi 0.5ml of the 1%, 2% & 5% test solution of marita shilajatu were shown zone of inhibition against the micro organisms, i.e Escheria coli, Staphylococcus Aureus, Pseudomonas Aeruginosa and Klebsiella species and fungi, i.e, Candida albicans & Aspergillus niger.

On bacteria, 0.5ml solution of Benzathine penicillin shown the zone of inhibition against Escheria coli, Staphylococcus Aureus, Pseudomonas Aeruginosa and Klebsiella species.

On fungi 0.5ml solution of Flucanazole shown the zone of inhibition against Candida albicans and Aspergillus niger.

On bacteria & fungi 0.5ml of control drug (distilled water) has not shown any zone of inhibition against any of micro organisms, i.e Escheria coli, Staphylococcus

**CONCLUSION**

Different % of solutions (1%, 2% & 5%) maritashilajatu were subjected for antibacterial and antifungal activity with standard drugs Benzathine penicillin (antibacterial) and Flucanazole (antifungal). But marita shilajatu in all three concentration i.e 1%, 2% & 5% having less zone of inhibition than standard drug i.e benzathine penicillin and fluconazole. Thus this research studies on shilajatu have provided the data that marita shilajatu is not having much antimicrobial property becoz due to marana process its all active ingredient burnt out.

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