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Original Research Paper

Ayurveda

ANTIBACTERIAL SCREENING ACTIVITIES OF KADALI (MUSA PARADISIACAL) KANDA KSHARA (TUBOUR) AND KANDA KSHARA (STEM) – AN EXPERIMENTAL STUDY.

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ABSTRACT The present study aimed at evaluating the in vitro Antibacterial effect of Kanda (Tubour) Kshara and Kanda (Stem) of locally available plant, Musa paradisiaca on various gram strains of bacteria Escherichia coli (ETEC), Staphylococcus aureus Pseudomonas aeruginosa and pus isolates. The agar disc diffusion method was used to determine the inhibitory effect of both the Kshara Samples. Both the Kshara Samples showed insignificant inhibitory effect on test organisms.

KEYWORDS : Antimicrobial Activities of Kadali Kanda (Stem) and Kadali Kanda (Tubour)

INTRODUCTION:

Kadali kshara has been used in therapeutics since long times in various disease conditions. There is always debate between the doctors for what to refer the *kadali kshara*, should it be prepared from *kanda* (Stem) or should it be prepared from *Kanda* (Tubour). As both parts are equally important and have been advocated in different diseases. To assess the effectiveness of both the drugs *antibacterial activity* and *pH* of both the *kshara* is done.

MATERIAL AND METHODS

Kadali kanda (Stem) is separately collected and cut in to small pieces and is dried under shade. After complete drying it was burnt to ashes. This ash was further heated in iron pan to get white coloured ash. This ash is taken in a steel vessel and to this 6 times water is added and stirred well and filtered. This is repeated for 21 times and the filtrate collected is evaporated to dryness leaving behind white coloured powder.[1,2]

The same procedure is repeated with *Kadali Kanda* (Tubour) and the *kshara* is collected.

Bacterial strains and culture media

Various cultures of human pathogenic gram positive bacteria namely, *Staphylococcus aureus*-NCIM-2079, *Pseudomonas aeruginosa*-NCIM-2036 and gram negative bacteria namely, *Escherichia coli*-NCIM-2065, were obtained from National Chemical Laboratory, Pune and *pus isolates* were developed in Biogenic lab, Hubli and were used for screening of antibacterial activity of *Kadali Kanda* (Stem) and *Kadali Kanda*(Tubour) The microorganisms were repeatedly sub cultured on sterile nutrient agar media in order to obtain pure isolates. A loop full test organism was inoculated on nutrient broth and incubated for 24 h at 37 ± 1oC and maintained in sterile condition.

Description:[3,4,5]

Media Used: Peptone-10 g, NaCl-10g and Yeast extract 5g, Agar 20g in 1000 ml of distilled water.

Initially, the stock cultures of bacteria were revived by inoculating in broth media and grown at 37°C for 18 hrs. The agar plates of the above media were prepared and wells were made in the plate. Each plate was inoculated with 18 h old cultures (100 l, 10^{-4} cfu) and spread evenly on the plate. After 20 min, the wells were filled with of compound at different concentrations. The control wells with Dil. HCL were also prepared. All the plates were incubated at 37°C for 24 h and the diameter of inhibition zone were noted

Isolation of bacteria from pus samples

The media plates were streaked with the cotton swabs of pus samples and grown for 24 h at 37°C. The culture obtained were inoculated into 10ml broth media and grown again for 24 h. This culture was used against test samples.

RESULTS:

P. aeruginosa

Sample	25 µg	50 µg	100 µg	250 µg	500 µg	1000 µg	MIC µg
A	0	0	0	0	0	0	NF
B	0	0	0	0	0	0	NF
Ciprofloxacin	30	32	34	35	38	*	25

Note: NF- MIC not found in the concentrations screened

E.Coli

Sample	25 µg	50 µg	100 µg	250 µg	500 µg	1000 µg	MIC µg
A	0	0	0	0	0	0	NF
B	0	0	0	0	0	0	NF
Ciprofloxacin	26	29	32	34	38	*	25

Note: NF- MIC not found in the concentrations screened

S. aureus

Sample	25 µg	50 µg	100 µg	250 µg	500 µg	1000 µg	MIC µg
A	0	0	0	0	0	0	NF
B	0	0	0	0	0	0	NF
Ciprofloxacin	25	28	31	34	36	*	25

Note: NF- MIC not found in the concentrations screened

Pus isolates

Sample	25 µg	50 µg	100 µg	250 µg	500 µg	1000 µg	MIC µg
A	0	0	0	0	0	0	NF
B	0	0	0	0	0	0	NF
Ciprofloxacin	24	27	29	30	36	*	25

Note: NF- MIC not found in the concentrations screened

pH studies:

Sample A {*KadaliKanda* (Tubour)}- 10.75
Sample B {*Kadalikanda* (Stem)}- 9.94

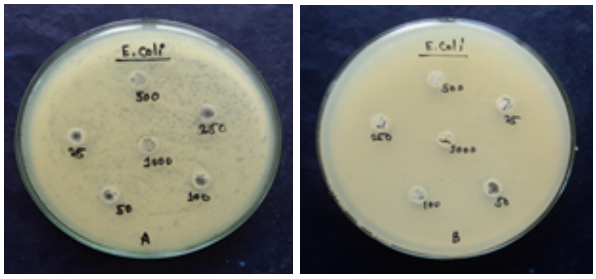
DISCUSSION:

In Sample A {*Kadali Kanda* (Tubour)} and Sample B {*Kadali Kanda* (Stem)} the above samples showed zero growth of inhibition while standard drug *ciprofloxacin* showed marked inhibition. This suggests that the drug is either not potent to inhibit the bacterial growth or else the bacteria may be resistant to the test drug used. The pH of both the samples viz

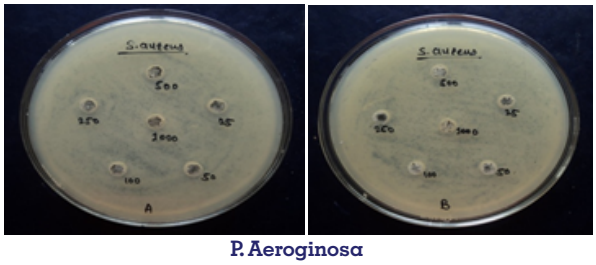
Kanda (Tubour) and *Kadali Kanda* (Stem) were 10.75 and 9.94 respectively.

CONCLUSION:

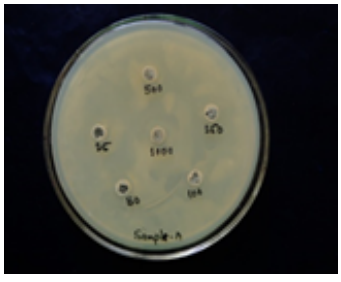
Both the Ksharas tested for Antibacterial studies does not show significant inhibition activity against the *P. aeruginosa, E.Coli, S. aureus, Pus isolates*. But the pH of kadalikanda (Tubour) is significantly high compared to kadali kanda (Stem) kshara.



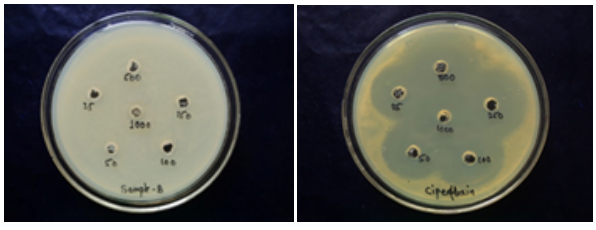
E Coli Group:



P. Aeroginosa



Kadali Moola



Kadali Kanda **Ciprofloxacin**

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