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Research Article

NAVASADARA SATVAPATANA: AN INVITRO STUDY

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ABSTRACT
Navasadara satvapatana is one of the unique contributions of the text Rasatarangini. A compound of Ammonium chloride is formed as a satva. It is indicated in puppusashotha, agnimandya, murcha etc. Like this it has many therapeutic applications. Navasadara is said to be having the properties like kshara, lavana, saaraka, gulmahara, adhmanahara, agnideepaka, kustanashaka, switranashaka etc. So keeping its immense qualities in mind present study intends to evaluate the effect of Navasadara satva on Gram +ve and Gram –ve micro-organisms which cause common infections. Study revealed that Navasdara satva has significant Antibacterial activity.
KEYWORDS: Navasadara satva, Antibacterial study, Disc diffusion.

INTRODUCTION

Navasadara satva is a unique preparation, mentioned by the text Rasatarangini and has many therapeutic applications. It is mainly indicated in puppusa shotha, agnimandya, murcha etc[1]. It signifies Navasadara satva may possess antimicrobial properties, and Navasadara is said to be having krimighna karma[2]. So in the present study Navasadara satva is studied for its bacteriostatic and bacteriocidal activity with *Staphylococcus aureus*, *E-coli* and *Klebsiella Pneumoniae*, and *Staphylococcus pneumoniae* which are opportunistic pathogens in common infections.

MATERIALS AND METODS

Raw materials like Navasadara, Khatika were collected from market/pharmacy and get authentified as per standards. Test microorganisms employed for in-vitro antimicrobial assay were obtained from Maratha Mandal Microbiology dept, Belgaum-Karnataka.

Navasadara satva was prepared as per the reference Rasatarangini[3].

Procedure: First Navasadara and Khatika should be purified by Nirmalikarana process. Navasadara and Khatika are taken in the ratio 4:3. Then it is triturated well in khalwa yantra. Thus formed mixture is kept in Damaru yantra and pachana is done for 11 hrs. Toyadhara is maintained throughout the procedure. After swangasheeta Damaru yantra is removed from agni and the yello coloured satva is scraped from the inner part of the upper pot and collected.

Thus prepared Navasadara satva subjected for parameter tests of standardization like, pH, % of Ammonium chloride, LOD, Ash value, Acid insoluble ash. As per standard procedures[4].

Then standardized Navasadara satva a is subjected for antimicrobial study using **disc diffusion method**[5] as follows,

The test solution was prepared by dissolving 1gmof Navasadara satva in 2 ml of distilled water. Then 0.2 ml of this solution was used for testing. Petridishes containing 10ml of Nutrient Agar medium were selected with 24 hrs culture of selected bacterial strain. Sterile filter paper discs (5mm) containing 100µg/disc of Navasadara satva were placed on the surface of the medium. Petri dishes were incubated for 24 hrs at 37^0 C for bacterial strains.

The assessment of antibacterial activity was based on the measurement of zone of inhibition observed around the discs.

RESULTS

Table 1 Physico-chemical analysis of Navasadara Satva

Sl.No.	Parameter	Observation
01	pH Value	10.1
02	Loss on Drying	14% w/w
03	Ash Value	0.099%
04	Acid insoluble ash	Nil
05	Specific gravity	1.0046

Table 2 Organoleptic characters of Navasadara Satva

Sl.No.	Parameter	Observation
01	Colour	Yellow
02	Odour	Characteristic odour of mmonia
03	Touch	Soft
04	Appearance	Powder
05	Taste	Alkaline

Table 3 Quantitative Analysis of Navasadara satva

Sample	%of NH_3	% NH_4Cl	% of Cl	% of Ca	Silica
Satva	3.68%	79.01%	48.65%	0.38%	1.73%

Table 4 Antibacterial screening of Navasadara satva by Disc diffusion method

Navasadara satva in various concentrations	Zone of inhibition in mm				Std Drug Cipro
	S.aureus	*S.pneumoniea*	*K pneumoniae*	*E-coli*	
1:2	26	**29**	18	**32**	>40
1:5	16	15	14	16	>40
1:10	14	R	R	15	>40
1:20	R	R	R	12	>40

DISCUSSION & CONCLUSION

The results suggest that Navasadara satva possess potential inhibitory activity at all three i.e. 1:2, 1:5, and 1:10 concentrations tested against Gram +ve and Garm –ve organisms. ***Staph pneumoniae*** showed maximum zone of inhibition i.e. 29 mm at a concentration of 1:2 where as at same concentration ***E-coli*** was 32 mm. These two values are comparatively nearer to the tested standard drug.

The Navasadara satva showing significant antimicrobial activity against tested organisms, substantiating the use of Navasadara satva in the management of common infections, caused by these tested organisms.

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