WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 10, Issue 13, 1482-1487. Research Article ISSN 2277– 7105

ANTI-MICROBIAL EVALUATION OF KASISA DRAVA

S. Shrivathsa[1]*, Ashok Kumar B. N.[2], Ravindra Angadi[3] and Radhika Ranjan Geethesh[4]

[1]PG Scholar Department of PG Studies in Rasa Shastra & Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda, Udupi, Karnataka.

[2,4]Associate Professor Department of PG Studies in Rasa Shastra & Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda, Udupi, Karnataka.

[3]Professor & HOD Department of PG Studies in Rasa Shastra & Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda, Udupi, Karnataka.

Article Received on
25 August 2021,

Revised on 15 Sept. 2021,
Accepted on 05 October 2021

DOI: 10.20959/wjpr202113-22031

***Corresponding Author**
Dr. S. Shrivathsa
PG Scholar Department of PG Studies in Rasa Shastra & Bhaishajya Kalpana, Sri Dharmasthala Manjunatheshwara College of Ayurveda, Udupi, Karnataka.

ABSTRACT

The herbal and mineral preparations are a significant part of worldwide clinical practice. There is a well-established sub discipline known as "Rasa Shastra and Bhaishajya Kalpana", which is entirely devoted to drug processing. Many unique classical techniques of preparation are still unexplored. Kaseesa Drava is one such preparation. The use of metallic-mineral preparations in the clinical practice has raised safety concerns and debates in the scientific community.

KEYWORDS: Kaseesa, Kaseesa Drava.

INTRODUCTION

Microbiology is emerging as the key biological science. Microorganisms provide the models used in molecular biology for research. The course of an infection is determined by three interacting factors: the micro-organism, host resistance and treatments. The role of antimicrobial agents, although often decisive, is mainly to shift the balance in favour of the host, giving the host time to metabolize its resistance mechanisms.

Ayurveda medicines are serving the needs of ailing humanity for many centuries. There is a need for systemic and well-organized coordination of allied sciences and adequate

infrastructure and facilities to use Ayurvedic medicines in the modern era. For this purpose, there is a need for the antimicrobial study of the drugs that are produced.

MATERIALS AND METHODS

Antimicrobial source

Preparation was subjected to antimicrobial study at S.D.M. Research Centre for Ayurveda and Allied Sciences, Udupi.

Method of data collection

In-vitro antimicrobial action of Kaseesa Drava was evaluated by Agar well diffusion method on

- *Staphylococcus aureus*
- *Pseudomonas aeruginosa*
- *Candida albicans*

The whole procedure was subdivided into the following steps:

- Preparation of Casein Soya Bean Agar Medium
- Preparation of Inoculum
- Well diffusion method

1. Antibacterial activity of kaseesa drava on *staphylococcus aureus*

Preparation of casein soya bean agar media (CSDAM)

Dissolve casein peptone (15g), soya peptone (5g), Sodium chloride (5g) were taken and dissolved in 990ml distilled water ad pH was adjusted to 7.3±0.2 and make up the volume to 1000ml. Finally, add 15g of Agar to the media and autoclaved at 121°C for 20 minutes.

Preparation of the inoculum

Staphylococcus aureus MTCC 3160 was procured from culture collection centre, IMTECH, Chandigarh. Loopful of 24h old culture from the slants was transferred to sterile saline and mixed well to prepare a homogenous inoculum.

Well diffusion method[1]

The media was cooled to around 45-55°C, around 20ml each was poured into sterile Petri plates. 1ml of the inoculum was immediately added to the plate, swirled for uniform distribution. Wells were bored using a sterile borer. The samples and the antibiotic were dispensed into the wells. Plates were incubated overnight at 37°C and observed after 24h.

2. Antibacterial activity of kaseesa drava on *pseudomonas aeruginosa*

The whole procedure was subdivided into the following steps:

- Preparation of Nutrient Medium
- Preparation of Inoculum
- Well diffusion method.

Preparation of nutrient agar media

Beef extract (1g), yeast extract (2g), peptone (5g), and Sodium Chloride (5g) were dissolved in 990ml of distilled water. The pH was adjusted to 7.2, and the volume was made up to 1000ml. Finally, 15g agar was added to the media and autoclaved at 121°C for 20minutes.

Preparation of the inoculum

Pseudomonas aeruginosa MTCC 8077 was procured from culture collection centre, IMTECH, Chandigarh. Loopful of 24h old culture from the slants was transferred to sterile saline and mixed well to prepare a homogenous inoculum.

Well diffusion method[1]

The media was cooled to around 45-55°C, around 20ml each was poured into sterile Petri plates. 1ml of the inoculum was immediately added to the plate, swirled for uniform distribution. Wells were bored using a sterile borer. The samples and the antibiotic were dispensed into the wells. Plates were incubated overnight at 37°C and observed after 24h.

3. Antimicrobial activity of kaseesa drava on *candida albicans*

The whole procedure was subdivided into the following steps:

- Preparation of Nutrient Medium.
- Preparation of Inoculum
- Well diffusion method.

Preparation of yeast extract dextrose agar media

Yeast extract (3g), peptone (10g), and dextrose (20g) were dissolved in 990ml of distilled water. The pH was adjusted to 7.4, and the volume was made up to 1000ml. Finally, 15g agar was added to the media and autoclaved at 121°C for 20minutes.

Preparation of the inoculum

Candida albicans MTCC 183 was procured from culture collection centre, IMTECH, Chandigarh. Loopful of 48h old culture from the slants was transferred to sterile saline and mixed well to prepare a homogenous inoculum.

Well diffusion method[1]

The media was cooled to around 45-55°C, around 20ml each was poured into sterile Petri plates. One ml of the inoculum was immediately added to the plate, swirled for uniform distribution. Wells were bored using a sterile borer. The samples and the antifungal were dispensed into the wells. Plates were incubated overnight at 30°C and observed after 48h.

RESULTS

Table 1: *In vitro* antibacterial activity test for *kaseesa drava* against *staphylococcus aureus.*

Kaseesa Drava	Zone of inhibition (mm)
25µl	06
50µl	06
100µl	08
150µl	10
Standard (*Ampicillin*) (1mg/500µl)	10

Table 2: *In vitro* antibacterial activity test for *kaseesa drava* against *pseudomonas aeruginosa.*

Kaseesa Drava	Zone of inhibition (mm)
25µl	10
50µl	11
100µl	13
150µl	14
Standard (*Gentamicin*) 240µg	16

Table 3: *In vitro* antifungal activity test for *kaseesa drava* against *candida albicans.*

Kaseesa Drava	Zone of inhibition (mm)
25µl	10
50µl	07
100µl	08
150µl	09
Standard (*Fluconazole*) (150mg/ml)	12

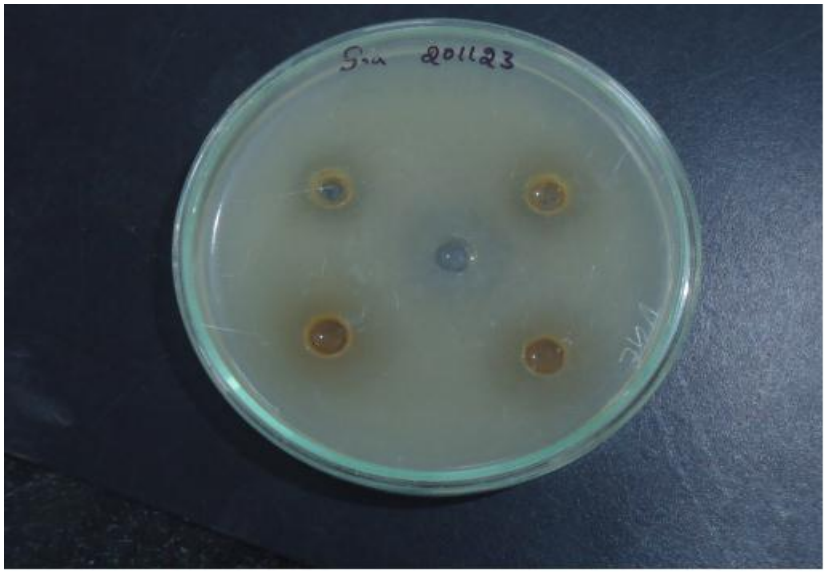

Fig. 1: Action of kaseesa drava on *s. aureus.*

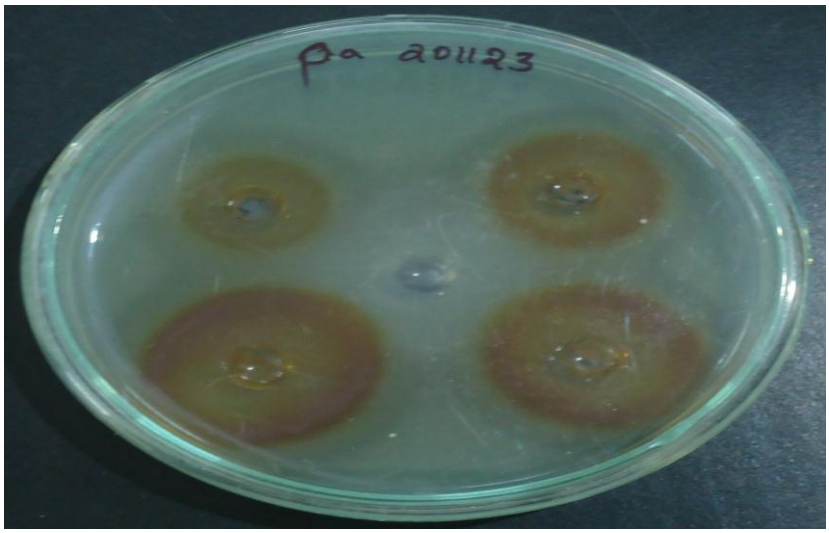

Fig. 2: Action of kaseesa drava on *p. aeruginosa.*

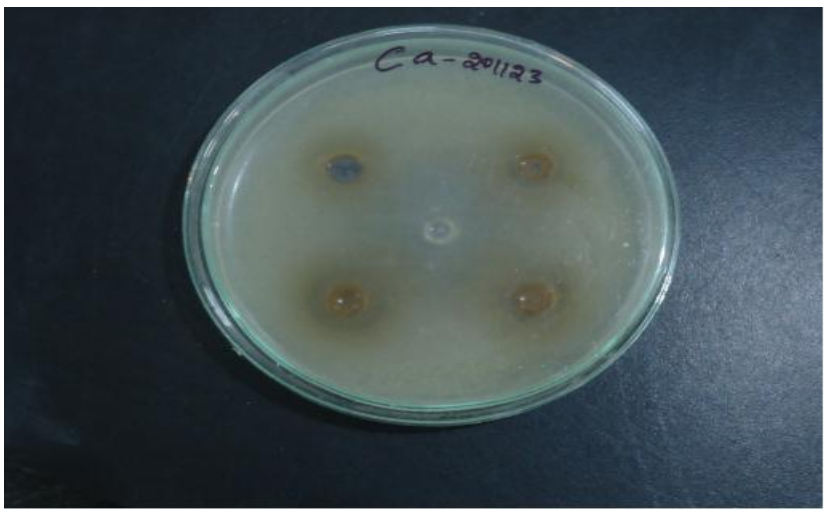

Fig. 3: Action of kaseesa drava on *c. albicans.*

DISCUSSION AND CONCLUSION

Moderate to high antibacterial activity was observed in different volumes used against *Staphylococcus aureus*. The zone of inhibition was more at higher concentrations of 100µl and 150µl, indicating that it has an antimicrobial effect at a higher dosage.

Moderate to marked antibacterial activity was observed in different volumes used against *Pseudomonas aeruginosa*. The antimicrobial activity was more at concentrations 100µl and 150µl. This indicates that the drug acts at a higher dosage.

Moderate antifungal activity was observed in different volumes used against *Candida albicans*.

Kaseesa Drava exhibited moderate to high antibacterial activity on *Staphylococcus aureus*, moderate to marked antibacterial activity on *Pseudomonas aeruginosa*, and moderate antifungal activity on *Candida albicans*.

REFERENCES

1. Premlatha Shetty, Amulya Shetty, Avila D'Souza, Evidence for efficacy of Ruta graveolens: An herb of Folklore fame with antimicrobial potential, International Journal of Pharmaceutical Research, 2016; 8: 4.