

EVALUATION OF SIDDHA HERBAL FORMULATION (VALIKANA KUDINEER) FOR ITS ANTI INFLAMMATORY AND ANTI MICROBIAL ACTIVITYGayathri N.*¹, Shanmuga priya C.², Meenakumari R.³, Muralidharan P.⁴¹Dept of Kuzhanthai Maruthuvam, GSMC, Chennai – 106.²Lecturer, Dept of Kuzhanthai Maruthuvam, GSMC, Chennai – 106.³Head of the Department, Dept of Kuzhanthai Maruthuvam, GSMC, Chennai – 106.⁴Prof. & Hod of C.I., Baid Metha College of pharmacy, Thoraipakkam, Chennai – 97.

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ABSTRACT

The Siddha system is largely therapeutic in nature. Use of metals and minerals is very much advocated. The Siddha system is capable of treating all types of disease other than emergency cases. Acute pharyngitis is an acute inflammation of pharyngeal mucosa and submucosa, mostly involved in pharyngeal lymphoid tissue. Viral more common in cold weather. Increases from 10% in fall to 40% in winter. Pharyngitis is being 1/3 of the primary system of the upper respiratory tract infection in children. Acute pharyngitis is the inflammation of the pharynx arise from a variety of irritants and infections. Upper respiratory tract infections (URTI) are extremely common in the children on an average of 6-8 times in a year. Pharyngitis is the primary symptom in 1/3 of URTI's caused by Infective and non-infective Infections like viruses, bacteriae and fungi. It produces fever, cold, cough, loss of appetite, sore throat, urinary tract infection. So, the Anti inflammatory and Anti microbial activity of Valikana Kudineer was carried out in carrageenan induced paw oedema and disc diffusion method induced symptoms in Wistar rats. The study result concluded that the drug Valikana kudineer has got significant Anti inflammatory and Anti microbial activity.

KEYWORDS: Acute pharyngitis, Valikana kudineer, Anti inflammatory, Carrageenan, Antimicrobial, Disc diffusion technique.

INTRODUCTION

Siddha system is a well known traditional systems of medicines always played important role in meeting the global health care needs. The term "Siddha" means "Achievements" and "Siddhars" were "saintly persons" who achieved results in medicine. Eighteen siddhars were said to have contributed towards the development of this medical system.

Lord Shiva who unfolded the knowledge of siddha system of medicine to his consort Parvati who handed it down to Nandhi deva and from Him to the Siddhars. Siddhars adapted principles of Saiva Siddhantham.

Siddhars classified diseases in different categories which accounts for 4448 diseases in human body.

Agathiyar was considered the foremost Siddhar with his later Lord Subramaniyar.

According to the ancient Siddha texts, the human body is made up of several elements. It is a microscopic component of the universe. The elements that form the

human body are the Earth (Mann), Fire (thee), Water (neer), Air (vayu) and Space (akasm).

Additionally, There are three humors or the DOSHAS called,

- Vata
- Pitta
- Kapha

Siddha medicine believes that diseases occur when there is a disequilibrium or imbalance in these humors or if their individual harmony is disturbed.

The balance can be restored by correcting the underlying dosha by the application of the Siddha system of medicine.

The three doshas are considered the three pillars of health and support the structures and functions of the body. These tridoshas are involved in regulating all the functions of the body and maintain the balance in physical, emotional and mental spheres.

As per Siddha aspect, paediatric diseases are carried from gene. It defines that the paediatric diseases occur at the time of fertilization to gestational period those paediatric diseases were classified in to **Agakkarana noigal** and **Pura karana noigal**.

Pharyngitis is being 1/3 of the primary system of the upper respiratory tract infection in children. Acute pharyngitis is the inflammation of the pharynx arise from a variety of irritants and infections. Upper respiratory tract infections (URTI) are extremely common in the children on an average of 6-8 times in a year. Pharyngitis is the primary symptom in 1/3 of URTI's caused by Infective and non-infective Infections like viruses, bacteriae and fungi.

Clinical features of acute pharyngitis correlates with the symptoms of valikanam fever, cold, cough, loss of appetite, sore throat, urinary infection described in the Siddha text. In siddha Literature valikanam is one of the 24 types of "Kanam" that occurs in children. The medicine was chooses for treatment and management of the Valikanam was Valikana kudineer 15-30 ml internally, twice a day after food described in Pillaipini maruthuvam. The Bio chemical analysis shows presence of Chloride, Iron and Alkaloid. PH is, Total ash value .Acute toxicity study shows,it has no significant toxic effect.

MATERIALS AND METHODS

Drug Authentication and preparation

Valikana kudineer is a herbal formulation comprising of 4 type of herbs that is Vilva ilai (Agle marmoles), Vendhayam (foenum gracum), Narseeragam (cuminum cyminum), Eera vengayam (Allium cepa). The drugswere authenticated by Medicinal botany department in Government Siddha Medical College, Arumbakkam, Chennai. The purified raw drugs are made into coarse powder, then the coarse powder is taken in mod pot, 60ml of water is added and heated, till it is reduced into 30ml.

Paw Edema Volume

Group	Dose	Initial paw volume	Change in paw edema mm at different time intervals				
			1 hr	2hr	3hr	4hr	5hr
I	Control	1.20 ± 0.14	1.20±0.14	1.20±0.14	1.20±0.14	1.20±.14	1.20±0.14
II	Carrageenan	1.21± 0.17	1.91 ± 0.21	2.27 ± 0.02	2.37 ± 0.14	2.48 ± 0.18	2.62 ± 0.17
III	Indomethacin	1.01± 0.06	2.10 ± 0.26	1.56 ± 0.15	1.47 ± 0.05	1.34 ± 0.18	1.15 ± 0.16
IV	Low dose	1.24 ± 0.11	1.36 ± 0.32	1.42 ± 0.18	1.52 ± 0.22	1.44 ± 0.22	1.46 ± 0.24
V	High dose	1.24±0.42	1.86 ± 0.22	1.71± 0.22	1.54 ± 0.24	1.52 ± 0.14	1.30 ± 0.12

Animals

Animals Albino rats (Wister stain) of either sex weighing 150-180gm were used in the study. The animals were kept in polypropylene cages and maintained by providing balanced food and water added libitum. Experiments were performed complied with the rulings of the committee for the purpose of control and supervision of experiments on animals, New Delhi India. The present study was approved by the Institutional Animal Ethical Committee. C. L. Baid metha college of pharmacy, Thuraiakkam, Chennai 97. The IAEC Approvel number XLVIII/09/CLBMCP/2017.

Anti inflammatory Activity

Aim

To evaluate the anti inflammatory activity of Valikana Kudineer on Carrageenan induced paw edema in rats.

Carrageenan induced paw edema in rats

For the experiment, the animals were divided into 5 groups with 6 animals in each group.

- Group-I (control) received 3% gum acacia 10 ml/kg p.o.
- Group-II (Carageenan) received 0.1ml of 1% w/v suspension of carrageenan S.C
- Group-III (standard) received Indomethacin 40 mg/kg p.o.
- Group-IV (Test-1) received VK 100mg/kg p.o.
- Group-V (Test-2) received VK 200mg/kg p.o.

All the drugs were administered orally and the volume of medicaments kept constant at 10 ml/kg body weight of the animals it was administered orally to rats 1 hr before subcutaneous injection of carrageenan. After 1 hr 0.1ml of 1% w/v suspension of carrageenan was injected into sub-plantar region of the left hind paw to all the groups. The paw volume was measured at 1, 2, 3, 4, and 5 hr using Plethysmometer (Model 7150 UGO Basile, Italy) Edema was expressed as the mean increase in paw volume relative to control animals.

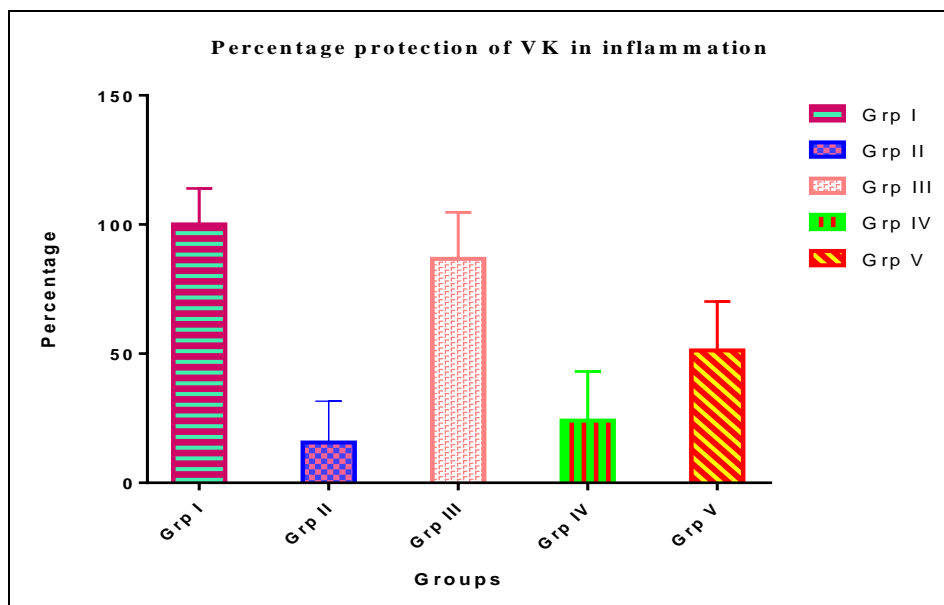
The paw volume up to the tribiotural articulation was measured at 0, 1, 2, 3, 4, 5 hrs.

Group	Initial paw volume	5 hr in mm	Difference in paw volume	Percentage protection
I	1.20 ± 0.14	1.20±0.14	0.00	100
II	1.21± 0.17	2.62 ± 0.17	1.41	15.62
III	1.01± 0.06	1.15 ± 0.16	0.24	86.68
IV	1.44 ± 0.13	1.59 ± 0.32	0.15	24.12
V	1.32 ±0.44	1.30 ± 0.12	0.08	51.22

Percentage protection is calculated by the formulae: $(T_2 - T_1 / T_2) \times 100$

T₁----normal control

T₂----drug treated test

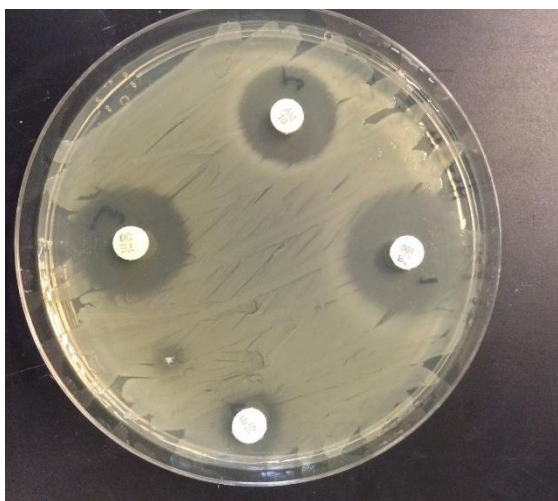


Anti Microbial activity

Aim

To evaluate the anti microbial activities of the Valikana kudineer by using disc diffusion method in wister rats

Anti microbial Evaluation



Antibacterial activity

The antibacterial activity was determined by the diffusion method of Kirby Bauer described by **Duguid et al, (1989)**. This method determines the antibacterial activity of the valikana kudineer

Preparation of the nutrient medium

Nutrient agar medium was prepared by dissolving 2.8g of nutrient agar in 100ml distilled water. The solution was sterilized in an autoclave at 121°C (1.1N pressure) for 15 min. The suspension was cooled and poured into

sterile Petri'dishes to solidify. The agar depth of the medium was 4.0mm.

Preparation of cultures and inoculation

Pure cultures of , Streptococcus aures and Hemophilus influenza obtained from the Microbiology Laboratory in the Department of Microbiology, C.L. Baid Metha College of Pharmacy, Chennai were separately used to inoculate the Petri' dishes. This was done by streaking the surface of the plates in a zigzag manner until the entire surface was then covered. The inoculated plates were then incubated at room temperature for 24hours.

Assay of antibacterial activity

The Valikana Kudineer were serially diluted to obtain 50%, and 100% solutions in sterile test tubes. Sterilized 9mm filter paper disc soaked in the diluted extracts were placed on the plates and incubated for 24hours at room temperature. The plates were examined for clear zones of inhibition. Presence of zones of inhibition indicated activity. The zones were measured.

Inhibition of bacterial growth

Test organism	Dilution %	Zone of inhibition (mm)
Streptococcus aures	50	3
	100	5.5
Haemophilus influenza	50	2.5
	100	3.5

Ref: Duguid, J.P., Marmoid, B.P., Swain, R. H. A., 1989. Mackie and McCartney's Medical Microbiology. Vol.1.13th Edition Churchill Livingstone London.163.

Statistical Analysis

Data was expressed as mean \pm standard error of mean. Significance was evaluated by one-way ANOVA followed by dunnet's test. P value less than 0.05

RESULTS AND OBSERVATION

Anti inflammatory activity

Observation of results predicts that carrageenan induced group shows increased displacement value ranges from 1.21 to 2.62.

Treatment with Test drug at the dose of 100mg/kg shown displacement value ranges from 1.24 to 1.46.

Treatment with Test drug at the dose of 200mg/kg shown displacement value ranges from 1.24 to 1.30.

Treatment with standard drug indomethacin at the dose of drug at 10mg/kg shown displacement value ranges 1.01 to 1.15.

Anti microbial activity

Test organism is Streptococcus aures dilution is 50%, zone of inhibition is 3mm, and dilution is 100%, zone of inhibition is 5.5mm.

Test organism is Hemophilus influenza dilution is 50%, zone of inhibition is 2.5mm, and dilution is 100%, zone of inhibition is 3.5mm

CONCLUSION

The result of the present study demonstrate that the drug Valikana Kudineer has significant anti inflammatory both the dose level significantly reduced the paw edema induced by Carrageenan, and anti microbial study was concluded that test drug Valikana kudineer at both the dose level significantly form zone of inhibition by disc diffusion method. It has been concluded that the potent Anti inflammatory and Anti microbial activity of Valikana Kudineer in rats and this results contribute towards the Evaluation of the traditional use of Valikana kudineer in the treatment of pharyngitis in children.

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