

VALIDATION OF SIDDHA HERBO MINERAL FORMULATION (MURUVILI KUDINEER) FOR ITS ANTI PYRETIC ACTIVITY AND ANTI INFLAMMATORY ACTIVITYAbisha A.*¹, Shanmugapriya C.², Meenakumari R.³ and Muralidharan P.⁴¹Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.²Lecturer, Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.³Head of the Department, Department of PG Kuzhanthai Maruthuvam, Govt Siddha Medical College, Chennai-106.⁴Prof & Hod of C. L., Baid Metha College of Pharmacy, Thoraipakkam, Chennai-97.

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ABSTRACT

Siddha system is one of the ancient system of Medicine in India, Originated in the south india. The term "Siddha" means "Achievements" and Siddhars were Sainly persons who have achieved perfection in the medicine. 18 Siddhars have contributed towards the development of this medical system. Siddha System is largely therapeutic in nature. Main concept of Siddha system is "Food as a medicine, medicine as a food". Siddha medicine are made from plants, metals, and minerals products. In our system first preference is given for plant based medicine. Bronchitis is inflammation of the bronchial airway. It is a major health issue and one of the top five reasons in children for frequent visits to the physician in developing countries. Bronchitis occurs most commonly in children younger than 2 years with another peak seen in children age between 9-15 years. Doctors may prescribe a 5 to 10 days course of cough suppressant, broad spectrum antibiotics, which fights a range of bacteria. In most cases, it produces dizziness, headache, vomiting, drowsiness, skin rashes and over weight. So, the Antipyretic Activity and Anti inflammatory Activity of *Muruvili Kudineer* was carried out in carrageenan-induced paw oedema and Brewer's yeast induced pyrexia in Wister rats. The study result concluded that the drug *Muruvili Kudineer* has got significant Antipyretic Activity and Anti inflammatory Activity.

KEYWORDS: Antipyretic Activity, Anti inflammatory Activity, Bronchitis, *Muruvili Kudineer*.**INTRODUCTION**

"Perfect health leads to a perfect mind which ultimately leads an individual to salvation". Siddhar's classified diseases in different categories and accounted as 4448 diseases. The diseases are classified on bases of Mukkuttram that is Vadam, Pitham, Kabam these proportion deviates produce the disease.

Bronchitis (chest cold) is defined as an inflammation and swelling of the respiratory tubes between the nose/throat and the lungs. These tubes include the Trachea (Windpipe) the Bronchi, and the Bronchioles. Bronchitis is characterized by the development of cough or small sensation in the back of the throat with or without production of sputum (mucous that is expectorant or coughed up from the RT). Bronchitis, both acute and chronic is prevalent throughout the world and is one of the top five reasons for childhood physician visits in countries. Bronchitis occurs most commonly in children younger than 2 years with another peak seen in children aged 9-15 years. Since the mortality is very low the pathological materials is scanty and most instances, it is

self limiting. In children, bronchitis caused by viral 90%, Bacterial 10%. Non infectious inflammation of the bronchi caused by physical and chemical irritants such as inhale dust, pollen grain organic substance.

Clinical features of bronchitis correlates with the symptoms of Singimantha kanam dry or productive cough with expectoration, wheezing, fever, malaise, rhinitis, sore throat described in the siddha text. In siddha literature Singimantha kanam is one of the twenty four types of "Kanam" that occurs in children. The medicine was chooses for treatment and management of the Singimantha kanam was *Muruvili Kudineer* 15-30ml internally, twice a day after food described in *Balavagadam (Kuzhanthai Maruthuvam)*. The Bio chemical analysis shows presence of ferrous iron, chloride, calcium, alkaloid, starch, reducing sugar, steroid. PH is 4.8, Total ash value 09.06%. Acute toxicity studies shows, it has no significant toxic effect.

MATERIALS AND METHODS

Drugs Authentication and Preparation

Muruvili Kudineer is a herbomineral formulation comprising of fifteen type of herbs and one type of mineral, that is, *Muruvili (Cuscuta reflexa)*, Vengayam (*Allium cepa*), Vellai ver (Root of *Gynandropis pentaphylla*), Keezhanelli ver (Root of *Phyllanthus amarus*), Nannari ver (Root of *Hemidesmus indicus*), Vishnukaranthai (*Evolvus alsinoids*), Nelli vatrak (*Phyllanthus emblica*), Kadukkai (*Terminalia chebula*), Narathai ver (Root of *Citrus medica*), Nilaposani ver (Root of *Ipomoea mauritiana*), Parsorti (*Ruellia secunda*), Vasambu (*Acorus calamus*), Kuratai ver (*Trichosanthes tricuspidata*), Ellumichai ver (Root of *Citrus lemon*), Malaithangi ver (Root of *Sida acuta*), Indhuppu (*Sodium chloridum impura*). The drugs were identified and authenticated by Medicinal botany department in Government Siddha Medical College, Arumbakkam, Chennai-106. The purified raw drugs are made into coarse powder, then the coarse powder is taken in a mud pot, 60ml of water is added and heated, till it is reduced into 30ml.

Animals

Animals Albino rats (wister stain) of either sex weighing 160-200g 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, Thoraiakkam, Chennai 97. The IAEC Approval number: XLVIII/07/CLBMCP/2017.

Anti Inflammatory Activity

Aim

To Evaluate the Anti inflammatory activity of *Muruvili Kudineer* on Carrageenan induced paw edema in rats.

Carrageenan Induced Paw Odema In Rats

Anti-inflammatory activity of *Muruvili Kudineer* was assessed by carrageenan paw edema. Rats were divided into 4 groups (n = 6). Animals of all the groups injected with 0.1 mL of carrageenan in 0.9% normal saline, under the plantar aponeurosis of the right hind paw.

Group-I: Animals (carrageenan control) received vehicle 30 min prior to administration of carrageenan injection.

Group-II: Animals the standard reference group was given p.o. aqueous solution of Indomethacin (5 mg/kg), 30 min prior administration carrageenan injection.

Group-III: Animals received 100mg/kg of *Muruvili Kudineer* 30 min prior to administration of carrageenan injection.

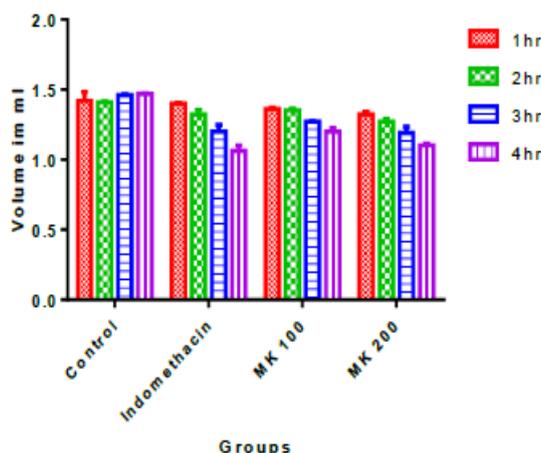
Group-IV: Animals received 200mg/kg of *Muruvili Kudineer* 30 min prior to administration of carrageenan injection.

The paw volume was measured using plethysmograph immediately after 1hr of injection, again at 2, 3, and 4th hour eventually after treatment. The mean volume was compared with control group.

Table 1: Anti-inflammatory activity of *Muruvili Kudineer* on carrageenan induced paw edema in rats.

| Group | Dose mg/kg | Mean Paw volume in ml | | | |
|-------------------|------------|-----------------------|---------------|----------------|----------------|
| | | 1hr | 2hr | 3hr | 4hr |
| Control | Vehicle | 1.42 ± 0.064 | 1.41 ± 0.005 | 1.46 ± 0.008 | 1.47 ± 0.004 |
| Indomethacin | 10mg/kg | 1.40 ± 0.061* | 1.32 ± 0.034* | 1.20 ± 0.047** | 1.06 ± 0.040** |
| Muruvili kudineer | 100mg/kg | 1.36 ± 0.010 | 1.35 ± 0.014 | 1.27 ± 0.004* | 1.20 ± 0.026* |
| Muruvili kudineer | 200mg/kg | 1.32 ± 0.022 | 1.27 ± 0.020 | 1.19 ± 0.044 | 1.10 ± 0.014** |

Anti-inflammatory activity of *Muruvili kudineer* on carrageenan-induced paw edema



Anti Pyretic Activity

Aim

To evaluate the Antipyretic activities of the *Muruvili Kudineer* by using Brewer's yeast induced pyrexia in wister rats.

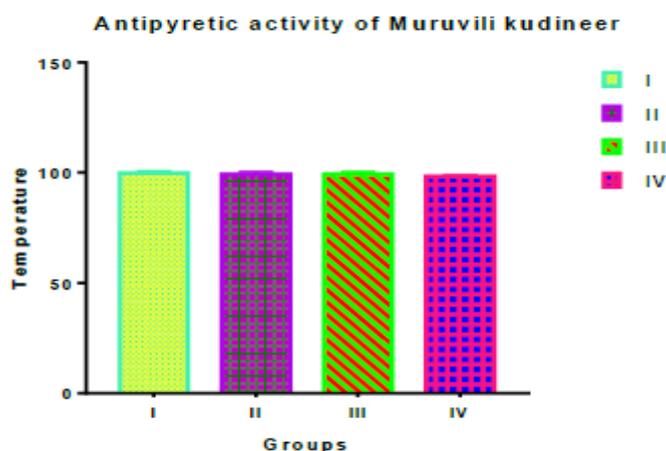
Anti Pyretic Evaluation

The Antipyretic activity was evaluated using Brewer's yeast induced pyrexia in rats. Fever was induced by subcutaneously injecting 20ml/kg of 20 % aqueous suspension of Brewer's yeast in normal saline after measuring the rectal temperature using digital

thermometer. Eighteen hours (0h) after the yeast injection the animals were again placed in individual cages for recording the rectal temperature. The animals of control group were administered orally the aqueous solution of a volume of 5 ml/kg. The *Muruvili Kudineer* at doses of 100 and 200mg/kg (group II & III) was administered orally 18 h after the yeast injection to the two groups of rat. The animals of fourth group received the standard prototype antipyretic agent paracetamol (150/mg/kg) orally. The rats were restrained for their rectal temperature to be recorded at the 0 h immediately before vehicle, then at second hour.

Table 2: Antipyretic activity of *Muruvili Kudineer* on Brewer's yeast induced pyrexia in rats.

| Group | Initial rectal temperature before yeast | Rectal temperature at yeast injection and after administration of MK | |
|-------|---|--|------------|
| | | 0hr | II nd hr |
| I | 99.1±0.72 | 100.62±0.25 | 100.7±0.21 |
| II | 98.7±.12 | 100.4±0.24 | 99.2±0.44 |
| III | 98.80±.21 | 100.2±0.17 | 99.6±0.42 |
| IV | 97.80±.22 | 98.64±12 | 98.46±0.12 |



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 values less than 0.05.

RESULTS AND OBSERVATION

Anti Inflammatory Activity

Observation of results predicts that carrageenan induced group shows increased displacement value ranges from 1.42 to 1.47ml.

Treatment with Test drug at the dose of 100mg/kg shown displacement value ranges from 1.36 to 1.20ml.

Treatment with Test drug at the dose of 200mg/kg shown displacement value ranges from 1.32 to 1.10ml.

Treatment with standard drug Diclofenac at the dose of drug at 10mg/kg shown displacement value ranges from 1.40 to 1.06ml.

Anti Pyretic Activity

Yeast induce animals shows increased body temperature, Treatment with Test drug at the dose of 100mg/kg shown significant decrease in body temperature from 100.4 to 99.2 °F.

Treatment with Test drug at the dose of 200mg/kg shown significant decrease in body temperature from 100.2 to 99.6 °F.

Treatment with standard drug paracetoamol at the dose of 150mg/kg shown significant decrease in body temperature from 98.64 to 98.46°F.

CONCLUSION

The results of the present study demonstrate that the drug *Muruvili Kudineer* has significant Anti inflammatory both the dose level significantly reduced the paw edema induced by Carrageenan, and Anti-pyretic study was concluded that test drug *Muruvili Kudineer* at both the dose level significantly reduced the pyrexia induced by Brewer's yeast. It has been concluded that the potent

Anti-inflammatory and Anti-pyretic activity of *Muruvili Kudineer* in rats and this results contribute towards the validation of the traditional use of *Muruvili Kudineer* in the treatment of bronchitis in children.

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