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EVALUATION OF KARAPPAN ENNAI POLYHERBAL FORMULATION FOR ITS ANTI-INFLAMMATORY AND ANTI-HISTAMINE ACTIVITIY EFFECTS IN THE TREATMENT OF KARAPPAN (ATOPIC DERMATITIS)

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ABSTRACT

Karappan ennai is a traditional siddha poly herbal formulation being prescribed for Karappan[1] (Atopic dermatitis in children). The experimental animal method used were Xylene induced ear edema model, Dexamethasone (0.5mg/kg) was used as standard for anti-inflammatory effect and Evans blue dye injection method, Citrizine (20mg/kg) was used as standard for anti-histamine effect for its evaluation of the Karappan ennai.[2] Karappan ennai showed significant Anti-inflammatory and Anti-histamine effects in the above study.

KEYWORDS: Karappan ennai, Siddha polyherbal formulation, Karappan (Atopic dermatitis), Anti-inflammatory, Anti-hiatamine activitiy.

INTRODCTION

The Siddha System of medicine is largely therapeutic in nature. The siddha system of medicine is effective in treating all types of skin problems particularly eczema (Atopic

dermatitis in children).Atopic dermatitis[3] is a commonly occurring inflammatory skin disease in children. Which is characterized by itching, redness, papules with edema, crusting, scaling and hyperpigmentation.

The prevalence of atopic dermatitis has increased over the past 30 years.[4] The prevalence varies greatly throughout the world. Children with atopic dermatitis are at high risk of developing asthma and allergic rhinitis of those who will develop atopic dermatitis before the age 2, 50% will develop asthma during subsequent years. The prevalence of eczema is currently increasing and affects 12 -15% of all school going children.[5] The incidence is increased by 2-to 3- fold during the past decades in industrialized countries.[6]

MATERIALS AND METHODS

In the present investigation Karappan ennai, a polyherbal formulation consisting of medicinal plants is taken for this study.

The study drug was selected from the Siddha text book and made into ennai form under basic siddha principles. This formulation composed of 6 herbal ingredients.[7]

According to the scientific review each ingredients of karappan ennai possess anti-inflammatory activity. Phytochemical analysis of the Karappan ennai indicates the presence of Alkaloids, Saponins, Phytosterols, Phenol, Flavanoides, Phenols, Di and tri terpenoids. Which could have potent therapeutic role in the treatment of Karappan (Atopic dermatitis in children).

Therapeutic usage

Karappan ennai are given both Internal and external.

Internal: 5ml at morning 5 days

External: Oil is applied over the affected skin lesions.

Its ingredients and formulation composition are tabulated in **Table.1.**

Tamil name	Botanical name[14]	Part used	Quantity(Lit.)
Karuppura valli[8]	*Plectranthus ambonicus*	Whole plant	1.3 lit.
Siru cheruppadai[9]	*Coldenia procumbens*	Whole plant	1.3 lit.
Eeruli[10]	*Allium cepa*	Whole plant	1.3 lit.
Narimiratti[11]	*Crotalaria verrucosa*	Whole plant	1.3 lit.
Cheppu nerunjil[12]	*Indigofera enneaphylla*	Whole plant	1.3 lit.
Vilak-ennai[13]	*Ricinus communis*	Seed oil	1.3 lit.

All the ingredients of Karappan ennai were authenticated[15] at Pharmacognosy department of Siddha Central Research Institute(SCRI), Chennai 106, Tamilnadu, India.

ANTI – INFLAMMATORY ACTIVITY

Swiss albino mice (xylene-induced ear edema model)

Swiss albino mice of either sex were randomly allotted to four groups, each consisting of six animals.

In xylene-induced ear edema model, the control group received vehicle (water, 10 mL/kg); other groups of mice was treated with 5ml/kg of karappan ennai and 0.5 mg/kg body weight of dexamethasone, as reference standard drug.

Xylene-Induced Ear Edema

The xylene-induced ear edema test was performed as previously described. Male albino Swiss mice weighing 20–30 g (6–8 weeks) were administered with vehicle/drugs/test substances orally 1 h prior to the xylene (50 µL) application to the anterior and posterior surfaces of the right ear topically, while left ear served as control.

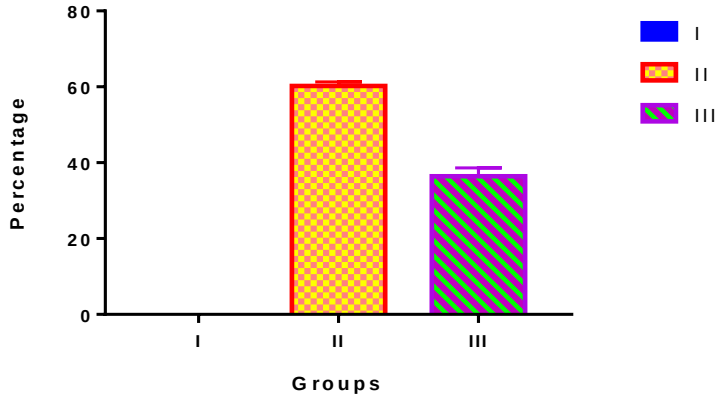
After 4 h of xylene application, animal was sacrificed; both ears were removed and ear discs of 6 mm diameter were punched out and weighed. The average weight difference between the right and left ear was taken as the measure for inflammatory response.[16]

$$\text{Percentage inhibition} = \frac{(\text{Control - treated}) \times 100}{\text{Control}}$$

Percentage inhibition of xylene-induced ear edema:

Group	Treatment	Inhibition %
I	Vehicle control	0
II	Dexamethasone (0.5 mg/kg)	60.2
III	Karappan ennai	36.4

Percentage inhibition of xylene -induced ear edema



EVALUATION OF ANTIHISTAMINE ACTIVITY

Grouping: Wistar rats were used for the study n=6nos

Group I ---------- Control group

Group II --------- Standard drug Cetirizine 20mg/kg

Group III --------- Karappan ennai 10ml/kg.

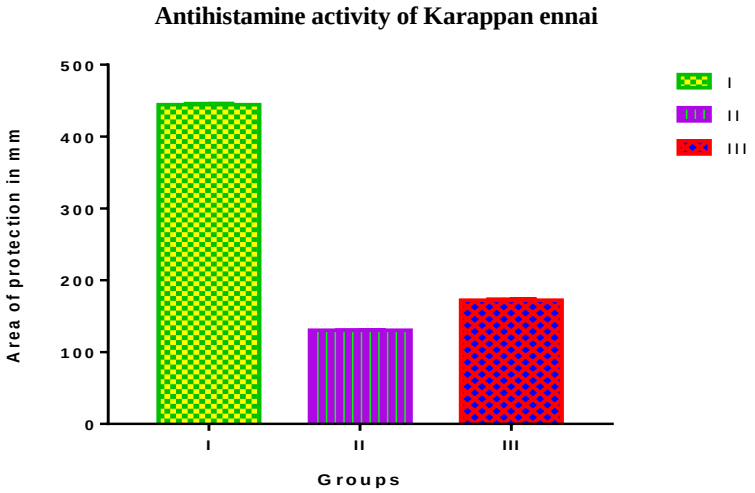
VASCULAR PERMEABILITY TEST IN RATS

Immediately after an i.v. injection of 1 ml of 1 % Evans blue in physiological saline, two sites on one side of the shaved back of animals were injected intradermally with 0.1 ml of physiological saline containing 0.1 µg histamine, contralateral sites were injected intradermally with an equal volume of physiological saline (the control skin areas). Karappan ennai was applied 30 min in rats prior to the injection of phlogistics. Thirty minutes later, the animals are sacrificed by overdose of anesthesia, and the skin was removed. Exudation of dye was calculated by subtracting the amount determined in the control skin area and expressed as the mean of two values obtained in each animal.[17]

Calculation

Area of protection = control area – area of exudation of dye

S.no	Grouping	Area of protection from exudation of Dye in mm
1	Control ---I	444.5±2.11
2	Cetrizine—II	130.33±1.22
3	Karappan ennai---III	172.24±2.26



RESULTS

Karappan ennai showed significant anti-inflammatory and anti-histamine effects in the above study.

DISCUSSION

Karappan (Atopic dermatitis) is a common skin disorder in chidren. The clinical study was conducted with trial drug Karappan ennai for the treatment of atopic dermatitis.

The study is conducted after being screened by screening committee and approved by the Institutional Ethical Committee (IEC)[18] of Government siddha medical college, Chennai 106. Toxicological[19] and Pharmacological study was carried out at C. L. Baid Metha College of Pharmay, Thorapakkam, Chennai 97.

40 patients were selected and also the clinical trial conducted in selected patients was satisfactory and encouraging.

The clinical study confirms the efficacy of the trial drug by reducing the clinical signs and symptoms like itching, redness, papules with edema, crusting, scaling and hyperpigmentation.

CONCLUSION

The result of the present study suggested that the drug Karappan ennai has significant Anti-inflammatory, Anti-histamine activities. This results contribute towards the therapeutic role in the treatment of karappan (Atopic dermatitis in children).

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