



IN-VITRO ANTI-HISTAMINE ACTIVITY AND QUALITATIVE BIOCHEMICAL ANALYSIS OF KAAL KADUVAN CHOORANAM- A SIDDHA POLYHERBAL FORMULATION

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ABSTRACT

Siddha system of medicine is the indigenous system of medicine practiced in south India especially in Tamilnadu. The Siddha system is dealing with natural system of medicines, with rare side effects. In recent times, there is a growing interest towards Siddha medicine for the treatment of karappan (Eczema). Kaal kaduvan chooranam is a Siddha classical polyherbal formulation that has been mentioned in Siddha maruthuva nool thirattu for the treatment of karappan. **Aim:** The main aim of this study is to analyse the in-vitro anti histamine potential and biochemical analysis of Kaal kaduvan chooranam. **Methodology:** The present study was undertaken to evaluate anti-histamine activity of Kaal kaduvan chooranam (KC) by using isolated chick ileum preparation. In isolated chick ileum preparation, concentration response curve of histamine in absence and in presence of KC was plotted. KC showed significant decrease in contraction induced by histamine in isolated chick ileum preparation. These results show the anti-histamine activity of Kaal kaduvan chooranam. **Result:** The study result was concluded that Kaal kaduvan chooranam has significant Anti-histamine activity.

KEYWORDS: Eczema, Karappan, Kaal kaduvan chooranam, Anti-histamine activity.

INTRODUCTION

Eczema is a chronic inflammatory skin disease which is characterised by itching, erythema, papules, vesicles, weeping, crusting, scaling and hyperpigmentation. The prevalence of eczema is currently estimated that 15% of children and 2-4% of adults. The pathogenesis of eczema is multifactorial; the following factors like genetics, skin barrier dysfunction, impaired immune response, environment are thought to play varying roles in eczema. The word "Karappan" is correlated with that of Eczema. The treatment for Eczema in the Siddha system of medicine is well known for their effectiveness and less toxicity. Hence this current study was carried out to prove the anti-histamine activity of "Kaal kaduvan chooranam" by invitro assays and biochemical analysis.

MATERIALS AND METHODS

Drug selection

The Siddha polyherbal formulation has taken from the classical Siddha literature "Siddha maruthuva nool thirattu" for eczema treatment.

Ingredients of Kaal kaduvan chooranam

1. Amukkura kizhangu (Withania somnifera) 2. Vellarugu

(Enicostemma axillare) 3. Karudan kizhangu (Corallocarpus epigaeus)

Authentication of Raw Drugs

The identification of polyherbal drugs are authenticated by faculties of Department of Gunapadam, Government Siddha Medical College and Hospital, Palayamkottai.

Method of Purification

All the raw drugs are purified as per the methods mentioned in Siddha literature.

Method of preparation

The above purified three ingredients were powdered individually and mixed together and stored in an airtight container.

Anti-histamine activity evaluation using isolated chick ileum

Chick ileum was purchased from local slaughter house in which the caecum part of the gut was lifted to identify the ileocaecal junction. About 2-3 cm of the ileum portion was cut and removed and immediately placed in the watch glass containing physiological salt solution.

Sufficient care was taken to avoid the damage to the gut muscle. Bath volume of about 25 ml was maintained, and the tissue was allowed to equilibrate for 30 min before adding test drug. Initial response on histamine induces the contraction in the ileal smooth muscles which were recorded on kymograph by using frontal writing lever. Contact time 30 sec, and 5 min cycle was kept for proper recording of the responses. After measuring normal response, the ileal preparation were incubated with test drug (approx. 2ml equivalent 500mcg) for brief period of time and the concentration response curve of histamine was then proceeded the height of response before and

after incubation of test drug was measured for calculating the antagonist effect of the test drug.

Biochemical Analysis of Kaal kaduvan Chooranam Preparation of the extract

5 gms of the KAAL KADUVAN CHOORANAM was weighted accurately and placed in a 250 ml clean beaker then 50 ml of distilled water is added and dissolved well. Then it is boiled well for about 10 minutes. It is cooled and filtered in a 100 ml volumetric flask and it is made to 100 ml with distilled water. This fluid is taken for analysis.

RESULTS

Table 1: Effect of KC on response of isolated chick ileum preparation.

Dose in μ g	Initial Response in mm (Before Incubation)	Final response in mm (After incubation with Test drug KC)
10	20	15
20	28	24
40	38	31
80	47	39

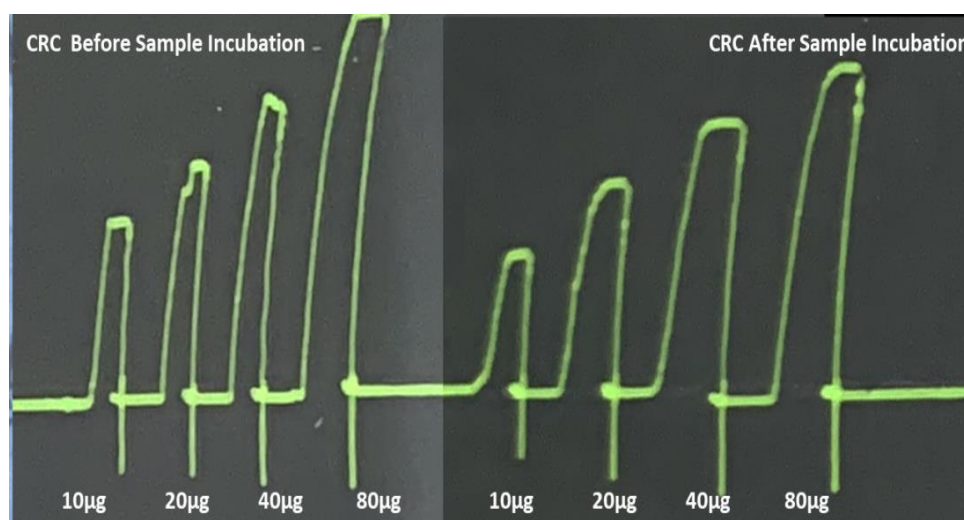


Figure 1: Concentration response curve of histamine in absence and presence of the sample KC on Isolated chick ileum in optimized condition.

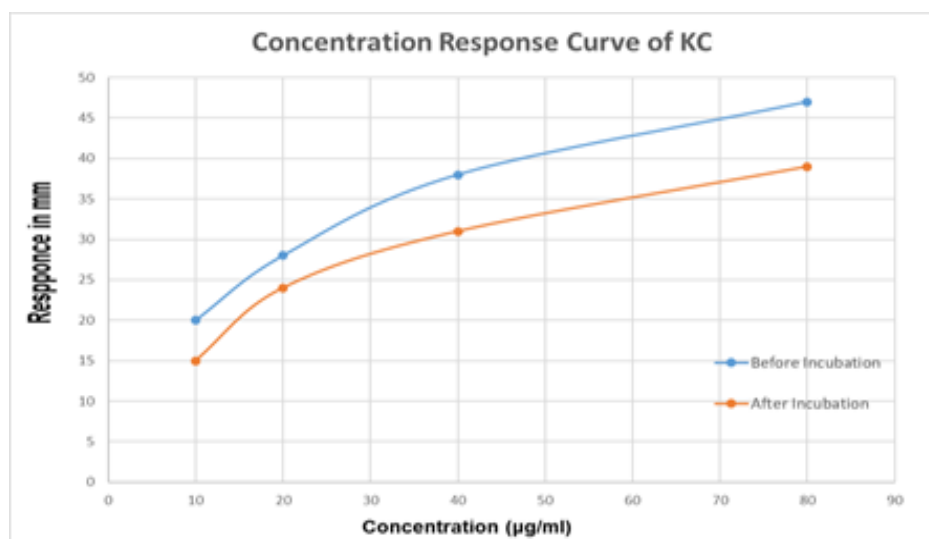


Figure 2: Concentration response curve of histamine in before and after incubation with the sample KC on Isolated chick ileum in optimized condition.

Biochemical Analysis

S. No	Procedure	Observation	Inference
1.	Test for calcium 2 ml of the above prepared extract taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution.	No White precipitate is formed	Absence of calcium
2.	Test for sulphate 2ml of the extract is added to 5% barium chloride solution.	A White precipitate is formed	Presence of sulphate
3.	Test for chloride The extract is treated with silver nitrate solution.	White precipitate is formed	Presence of Chloride
4.	Test for carbonate The substance is treated with concentrated HCL.	No brisk effervescence is formed	Absence of carbonate
5.	Test for Starch The extract is added with weak iodine solution.	Blue colour is formed	Presence of starch
6.	Test for ferric iron The extract is acidified with glacial acetic acid and potassium ferro cyanide.	No blue colour is formed	Absence of ferric iron
7.	Test for ferrous iron The extract is treated with concentrated nitric acid ammonium thiocyanate solution.	Blue colour is formed	Presence of ferrous iron
8.	Test for phosphate The extract is treated with ammonium molybdate and concentrated nitric acid.	No Yellow precipitate is formed	Absence of phosphate
9.	Test for albumin The extract is treated with esbach's reagent.	No yellow precipitate is formed	Absence of albumin
10.	Test for tannic acid The extract is treated with ferric chloride.	No blue/black precipitate is formed	Absence of tannic acid
11.	Test for unsaturation Potassium permanganate solution is added to the extract.	It gets decolourised	Presence of unsaturated compound
12.	Test for the reducing sugar 5 ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and add 8 to 10 drops of the extract and again boil it for 2 minutes.	No Colour change occurs	Absence of reducing sugar
13.	Test for amino acid One or two drops of the extract is placed on a filter paper and dried well. After drying, 1% ninhydrin is sprayed over the same and dried it well.	Violet colour is formed	Presence of amino acid
14.	Test for zinc The extract is treated with Potassium Ferro cyanide.	No white precipitate is formed	Absence of zinc

DISCUSSION**Effect of KC on response of isolated chick ileum preparation**

- It was observed from the data's obtained from the present study that the height of response of concentration response curve of histamine before incubation with test drug ranges from 20 mm to 47 mm. There was a promising decrease in the height of the response curve after incubation with test drug KC ranges from 15 mm to 39mm. As shown in table 1, figure 1-3.
- The qualitative phytochemical test revealed that KC contains Sulphate, Chloride, Starch, Ferrous iron, unsaturated compound and amino acid.

CONCLUSION

From this invitro study it was concluded that KAAL KADUVAN CHOORANAM possess promising anti histamine activity. This result can be further analysed invivo and more promising results may be expected.

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