



***In vitro* evaluation of Anti inflammatory and Anti histamine activity of the Polyherbal formulation – Bala karappan kudineer (BKK)**

Sharmiladevi K K¹, Victoria S², Shanmugapriya C³, Manju Hemamalini N⁴

¹ Post graduate, Department of Kuzhanthai Maruthuvam, Govt. Siddha Medical College, Chennai

² Head of the Department, Department of Kuzhanthai Maruthuvam, Govt. Siddha Medical College, Chennai

³ Lecturer- II, Department of Kuzhanthai Maruthuvam, Govt. Siddha Medical College, Chennai

⁴ Lecturer- II, Department of Kuzhanthai Maruthuvam, Govt. Siddha Medical College, Chennai

Abstract

The Polyherbal formulation, Bala karappan Kudineer is a siddha formulation had been analysed for its anti inflammatory activity as Albumin denaturation assay procedure and anti histamine evaluation by using Isolated chick ileum. From the result of the study it was concluded that the Bala karappan Kudineer possess promising anti-inflammatory property and anti histamine activity.

Keywords: Siddha formulation, Bala karappan, Bala karappan kudineer, Anti inflammatory activity, Anti histamine activity

Introduction

The Bala karappan kudineer is a siddha poly herbal formulation, mentioned in siddha literature indicated for Bala karappan (Atopic dermatitis in children). Atopic dermatitis is a non-contagious inflammation of the skin, characterized by erythema, scaling, oedema, vesiculation and oozing. Study in India showed that Atopic dermatitis was 28.46% of childhood diseases and 35-60% of symptoms appeared in first year of life

and 48-75% in their first 5 years of life. In Siddha system of medicine, There are many medicines indicated for the treatment of Bala karappan (Atopic dermatitis in children). One among them is Bala karappan kudineer. The Bala karappan kudineer contains 7 herbals which are *Morinda tinctoria*, *Vitex negundo*, *Cleome viscosa*, *Carum copticum*, *Phyla nodiflora*, *Allium cepa*, *Acorus calamus*. It has been indicated as Therapeutic usefulness in Atopic dermatitis in children, hence the drug elucidated for its scientific validation.

Materials and Methods

Albumin Denaturation Assay Procedure

In-vitro anti-inflammatory activity BKK as studied using albumin denaturation technique. The reaction mixture consisted of bovine serum albumin (5% aqueous solution) and test sample BKK at varying concentration ranges from 100 to 500 µg/ml and standard Diclofenac sodium at the concentration of 100 µg/ml of final volume. pH was adjusted by using a small amount of 1N Hydrochloric acid. The samples were incubated at 37°C for 20 min and then heated at 57°C for 3 min. After cooling the sample, 2.5 ml of phosphate buffer solution was added into each test tube. Turbidity developed was measured spectrophotometrically at 660 nm, for control distilled water was used instead of test sample

while product control tests lacked bovine serum albumin. The experiment was performed in triplicate.

The Percentage protection from denaturation is calculated by using the formulae

$$\left[\frac{(A)_{\text{control}} - (A)_{\text{sample}}}{(A)_{\text{control}}} \right] \times 100.$$

Statistical analysis

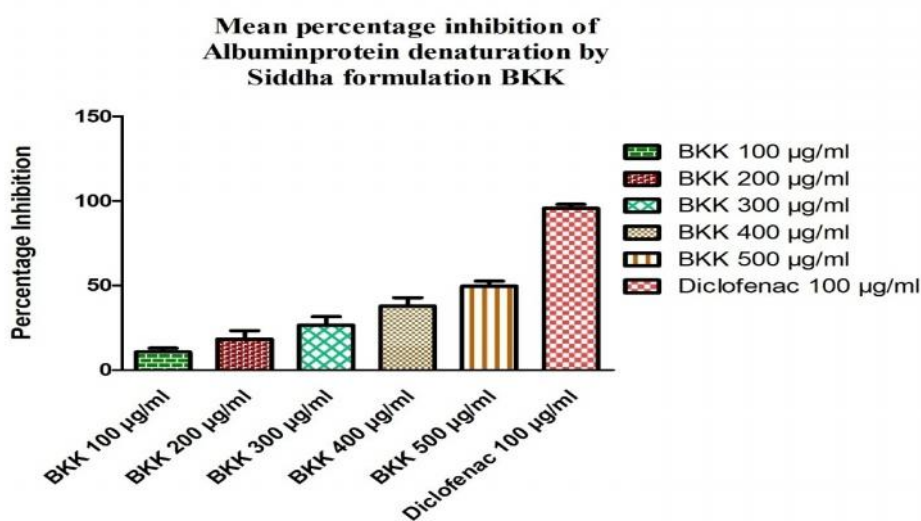
Results are expressed as Mean ± SD. The difference between experimental groups was compared by One-Way Analysis of Variance (ANOVA) followed by Dunnet Multiple comparison test.

Final Result

Concentration in µg/ml	Percentage Inhibition of Protein Denaturation
BKK 100	10.64 ± 2.453
BKK 200	18.31 ± 5.006
BKK 300	26.55 ± 5.027
BKK 400	37.87 ± 5.605
BKK 500	49.61 ± 3.839
Diclofenac sodium (100 µg)	95.73 ± 2.389

Each value represents the mean ± SD. N=3

Percentage Inhibition of Protein Denaturation by BKK and Standard



Result Analysis

The result obtained from the present clearly indicates that the test drug BKK was effective in inhibiting heat induced albumin denaturation. Maximum percentage inhibition of about 49.61 ± 3.839 % was observed at 500 $\mu\text{g/ml}$ when compare to that of the Diclofenac sodium, a standard anti-inflammatory agent with the maximum inhibition 95.73 ± 2.389 at the concentration of 100 $\mu\text{g/ml}$.

Conclusion

From the result of the study it was concluded that the test drug BKK possess promising anti-inflammatory property in protein denaturation assay.

Anti-Histamine 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 2-3cm of the ileum portion was cut and removed and immediately placed it 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 of 30 sec, and 5 min time cycle was kept for proper recording of the responses. After measuring normal response, the ileal preparation were incubated with test drug (2ml) for brief period of time and the concentration response curved 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.

Results

Effect of BKK on response of isolated chick ileum preparation

It was observed from the data's obtained from the present investigation that the height of response of concentration response curve of histamine before incubation with test drug ranges from 21 mm to 66 mm. There was a promising decrease in the height of the response curve after incubation with test drug BKK ranges from 12 mm to 38 mm. As show in table 1, figure 1&2.

Conclusion

It was concluded that the sample BKK possess promising anti histamine property

Table 1: Effect of BKK on response of isolated chick ileum preparation

Dose in mcg	Initial Response in mm (Before Incubation)	Final response in mm (After incubation with Test drug BKK)
10	21	12
20	33	19
40	49	28
80	66	38

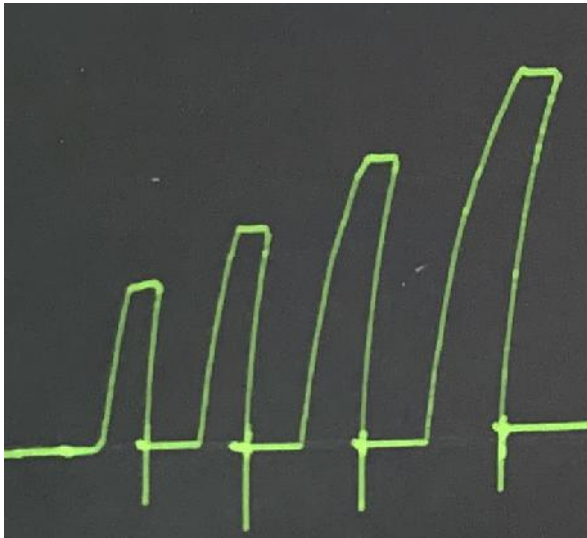


Figure 1: Concentration response curve of histamine in absence of sample BKK on Isolated chick ileum in optimized condition

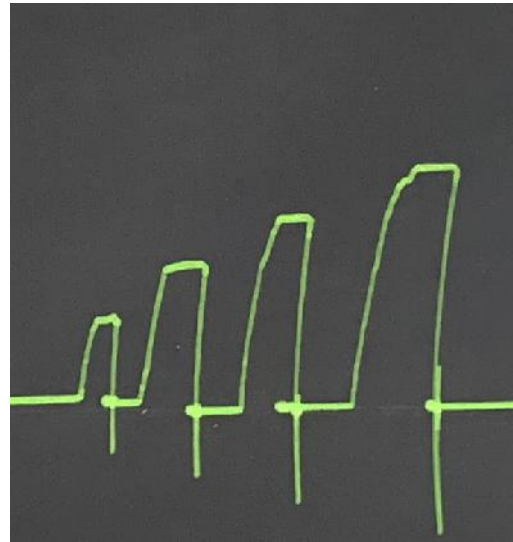
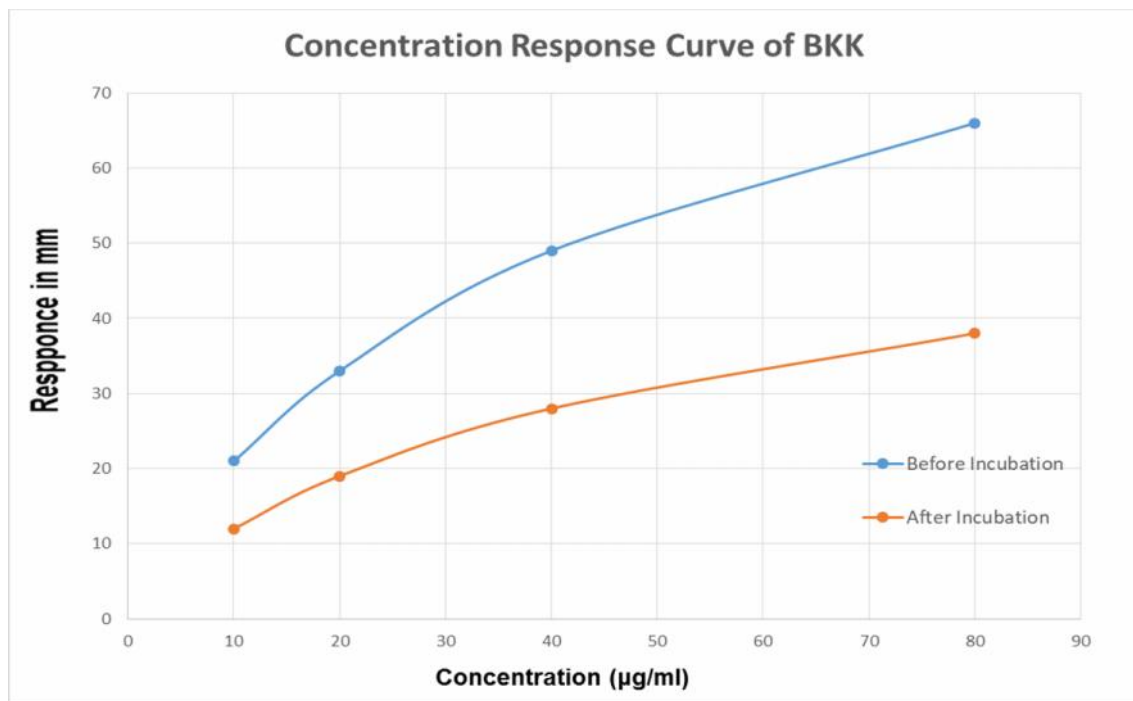


Figure 2: Concentration response curve of histamine in presence of sample BKK on Isolated chick ileum in optimized condition



Conclusion

From the result of the study it was concluded that the test drug BKK possess promising anti-inflammatory property in protein denaturation assay and Anti histamine evaluation using

isolated chick ileum. Thus, scientific validation of the siddha formulation once again brings out the greatness of siddhars and their pharmacological wisdom. This Pharmacological study is a preliminary one, which may pave the way to conduct clinical trials in human subjects.

References

1. Thiagarasa R, Yugi Vaithiya Sindhamani (Peru nool 800) part 1, 1976.
2. G. Leelaprakash, S. Mohan Dass. *In-vitro* anti-inflammatory activity of methanol extract of *Enicostemma axillare*. Int. J. Drug Dev. & Res., 2011, 3 (3): 189-196.
3. M. V. Anoop, A. R. Bindu. *In-vitro* Anti-inflammatory Activity Studies on *Syzygium zeylanicum* (L.) DC Leaves. International Journal of Pharma Research & Review, August 2015; 4(8):18-27.
4. Sophie Nutten, Atopic dermatitis: Global epidemiology and Risk factor, Nutrition and health department, Nestle Research centre, Switzerland, 2015.

Access this Article in Online	
	Website: www.ijcrims.com
	Subject: Siddha Medicine
Quick Response Code	

How to cite this article:

Sharmiladevi K K, Victoria S, Shanmugapriya C, Manju Hemamalini N. (2022). *In vitro* evaluation of Anti inflammatory and Anti histamine activity of the Polyherbal formulation – Bala karappan kudineer (BKK). Int. J. Curr. Res. Med. Sci. 8(4): 15-19.

DOI: <http://dx.doi.org/10.22192/ijcrms.2022.08.04.003>