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Potency of Vasanthakusumakara Mathirai for Anti-Histamine Activity by Vascular Permeability Model In Rats

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Abstract
Respiratory allergies are the major disorder of hypersensitivity of airway. There has been some limitation while treating this problem. In Siddha system of medicine many herbals and minerals are used to cure this disorder. Here, Vasanthakusumakara mathirai (VKM) a herbomineral formulation which is indicated to Kabakasam (Asthma & TB) was validated scientifically for Anti – histamine activity. The result shows that the test drug has significance when compare to standard. Hence, the Vasanthakusumakara mathirai proves to be the best Anti – histamine drug.

Keywords: *Vasanthakusumakara mathirai, Anti – histamine activity, Allergy, vascular permeability test, Hypersensitivity.*

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I. Introduction

Respiratory allergies are the major cause of morbidity in both children and adult. Airway hyper responsiveness is defined as the narrowing of the airways as response to a variety of stimuli, such as allergens and nonspecific triggers and infections. Asthma symptoms include recurrent wheezing, coughing, chest tightness, and dyspnoea, with nightly and early morning symptoms being more prevalent, whereby quality of life is often reduced [1].

Modern medicine is much advanced in treating the infectious diseases but has limitations in treating endogenous diseases like Asthma, Diabetes Mellitus etc however it provides only palliative treatment. In treatment of bronchial asthma extensive use of bronchodilators, antibiotics, steroids and other measures are helpful.[2]1n prolonged use of steroid therapy hoarseness of voice, dysphonic, sore throat, asymptomatic or symptomatic oropharyngeal candidiasis and suppression of immune response etc are seen in users while GIT, CNS and CVS toxicity occurs with theophylline and methylxanthines which are potent bronchodilators[2a].

In all over the world, requirement of phytopharmaceuticals is increased, because of side effect and many unwanted adverse effects of synthetic drugs [3]. In traditional medicine, large group of medicinal plants are used which have potential to cure many diseases. The *Vasanthakusumakara Mathirai* (VKM) is a herbo mineral formulation, mentioned in Siddha literature[4] indicated for *Kabakasam* (Asthma/TB) *Thummal* (Sneezing), *Suram* (Fever).This trial drug consists of ten raw drugs namely, *Lingam (*Cinnabar), *Vengaram (*Borax), *Lavangam (Syzygium aromaticum), Thipilli (Piper longam), Kostam (Costus speciosus), Akirakaaram (Anacyclus pyrethrum), Adhimathuram (Glycyrrhiza glabra), Korosanam (felbovinum purifactum) , Kunguma poo (Crocus sativus), Pachaikarpooram (Borneo camphor)*. It has been indicated as therapeutic usefulness; hence the drug has been elucidated for its scientific validation.

II. Methods

Animal study:

The experimental protocol was approved by the institutional ethical committee (IAEC) under CPCSEA (approval no: IAEC/XLIV/22/CLBMCP/2014) by the institution C. L. Biad Metha college of pharmacy, Thuraipakkam, Chennai.

Evaluation of anti-histamine activity:

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). VKM gave orally 30 min in rats prior to the injection of phlogistics. Thirty minutes later, the animals are sacrificed by overdose of anaesthesia, 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 [5].

Calculation:

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

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

Group I : Control group
Group II : Standard drug Cetirizine 20mg/kg
Group III : VKM 100mg/kg
Group IV : VKM 200mg/kg

III. Result

Table: 1 Anti histamine effect of *Vasanthakusumakara Mathirai*

S.No	Grouping	Area of protection from exudation of Dye in mm
1	Control	462.57±1.29
2	Cetirizine (STD)	132.94±1.51**
3	VKM 100mg	181.57±1.15**
4	VKM 200mg	161.89±2.73*

*Values are expressed as mean ± SEM (Dunnet's test) *p<0.05 – Significant, **p<0.01-Highly significant, ***p<0.001-Extremely significant n=6*

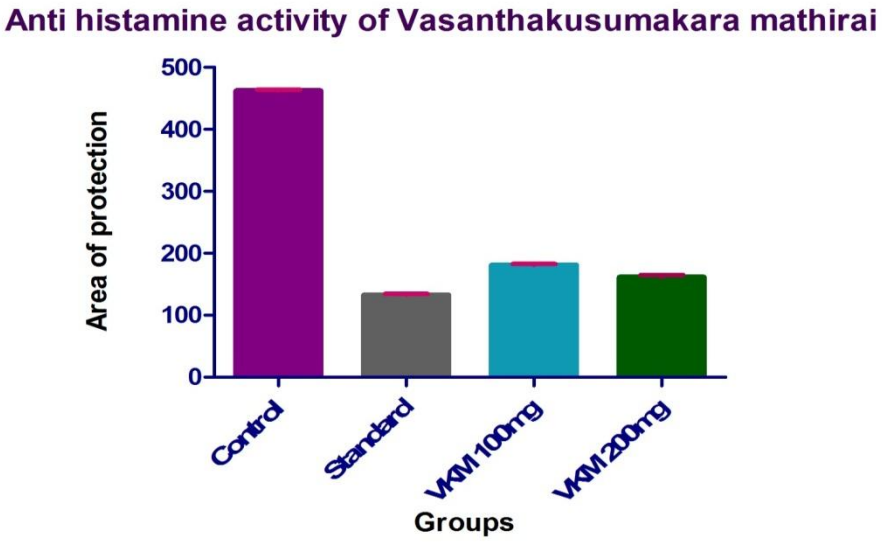

Figure 1: Diagrammatic representation of Anti-histamine activity

IV. Discussion

Mediators like histamine, serotonin, and acetylcholine are implicated in various ways in the pathogenesis of Asthma. Histamine is the most implicates mediator in broncho constriction that accompany asthma although the role of serotonin in asthma is uncertain.VKM inhibited the histamine induced bronchospasm (vascular permeability) in rats, when compare with Cetirizine as standard. Here, VKM possess highly significant in 100mg when compare to standard.

V. Conclusion

Hence, the study has been demonstrated that the drug VKM has highly significant anti-histaminic activity by the suppression of increased vascular permeability in rats. It has been concluded that the potent Anti-histaminic activity of VKM in rats and this results contribute towards the validation of the traditional use of VKM in the treatment of Asthma. Thus, this animal study validates the traditional medicine scientifically.

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