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ANTI HISTAMINIC ACTIVITY OF HINGULAD RASA SINDOOR AN EXPERIMENTAL STUDY

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ABSTRACT :

Allergic Respiratory diseases are on increasing edge. Many medicines has been advocated to treat the condition still *Rasasindoora* holds upper hand in the treatment. *Rasasindoora* prepared with Hingula would be more efficacious in treating such disorders hence evaluating Anti-Histaminic Activity of *Hingulad Rasa Sindoor* in Histamin Aerasole induced Bronco spasm was carried out. Materials and Methods: - Anti-Histamine activity of *Hingulad Rasa Sindoor* was evaluated by using Histamine aerosol induced anaphylactic bronco spasm in guinea pig it was observed that *Hingulad Rasa Sindoor* was statistically significant in increasing the pre-convulsive dyspnoea in guinea pigs at low and higher doses. The present study suggests efficacy of *Hingulad Rasa Sindoor* as novel Anti-Histamine formulation in Histamine aerosol induced guinea pigs by prolonging the Pre convulsive dyspnoea.

Key words: Anaphylactic Bronco spasm, Guinea pigs, Histamine, *Hingulad Rasa Sindoor* , Pre-convulsive dyspnoea.

INTRODUCTION:

Allergy and intolerance are explained in *Ayurveda* literatures as a concept of *asatmya*[1]. Intolerance happens when the body can no longer accept the change and adverse reaction occurs. Intolerance and allergy are both conditions of hypersensitivity, a reaction of the body to factors that it can no longer deal within a healthy way. *Allergic rhinitis*[2] is an allergic inflammation of nasal cavity. It occurs when *allergens* such as *pollen, dust*, or animal dandruff is inhaled by an individual which a sensitized immune system in such individuals the allergen triggers production of antibody IgE, which binds to mast cells and basophills containing *Histamin*e. this usually causes sneezing, *itchy* and *watery eyes swelling* and inflammation of nasal passages can increase mucous production. The goal of rhinitis treatment is to prevent or reduce symptoms caused by inflammation of affected tissue. Intranasal corticosteroids are preferred treatment[3]. Keeping this in mind, *Hingulad Rasa Sindoor*[4] evaluated for its *Anti-Histaminic activity*.

MATERIALS AND METHODS:-

Animals: Healthy Dunken Hartley strain guinea pigs of either sex weighing 400-600gms were selected randomly and used for experimental study. The animals were purchased from Sri. Venkatesh Enterprises, Bangalore, India. All the studies conducted were approved by the Institutional Animal Ethical Committee

(IAEC) of SET'S College of Pharmacy, Dharwad, India (REG.No.112/1999/CPCSEA) according to prescribed guidelines of Committee for the Purpose of Control and Supervision of Experiments on Animal (CPCSEA), Government of India.

Materials: *Hingula* and *Gandhaka* were procured from the pharmacy of pg dept of Rasashastra & B.K. Ayurveda Mahavidyalaya, Hubballi.

Preparation of Hingulad Rasa Sindoor: Hingulad rasa sindoor was prepared as per the guidelines of Rasa Tarangini. Here Author has explained that the qualities of *Hingulad Rasa Sindoor* are same as that of dwiguna balijarita *Rasa Sindoor* .

Ingredients:*Shodhita Hngula 200gms*
Shodhita Gandhaka 200gms

*Kajjal*i was prepared with above mentioned ratio *of Shodhita Hingula and Shodhita Gandhaka*.

Then *Kajjali* was taken in Mritkapatita Kacha kupi and was placed in Valuka yantra in bhrashtri. Kramagni pattern of agni was given for 36 hours. After swangasheeta *Hingulad Rasa Sindhoor* was obtained as *Kanthastha* product.Total obtained product weighed as 280 gms.

Dose Calculation:

Guinea pig dose = Human dose X surface area of guinea pig

= 125#0.186

= 23.25mg/1.5 kg body wt

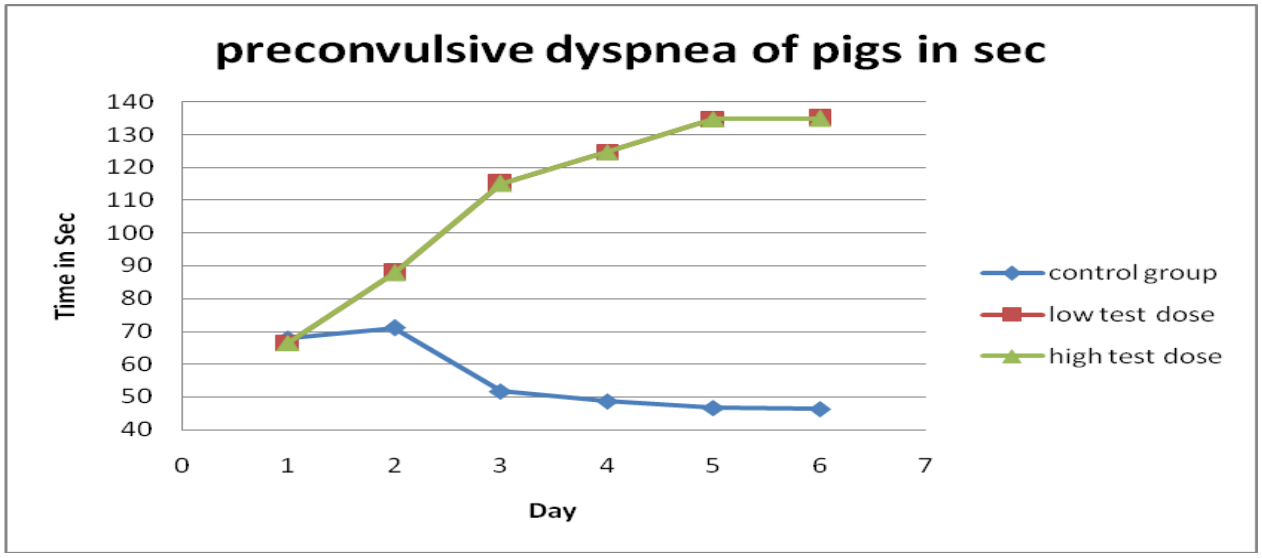
Bronchospasm induction in guinea pigs:

Bronchospasm was induced in guinea pigs by exposing them to 1% Histamine aerosol under constant pressure 1 kg/cm2 in an aerosol chamber(24*24*24cm) made of perplex glasses. Of the two groups of five animals each, group1 served as control and group 2 served as received test drug *Hingulad Rasa Sindoor* 23.25 mg/1.5 kg m p.o, diluted in 0.5 ml of distilled water once a day for 5 days. The animals were exposed to 1% Histamine aerosol under constant pressure (1 kg/cm2) in an aerosol chamber on day 0 without any treatment. The end point, the animals were removed from the chamber and exposed to fresh air. This PCD was taken as day 0 value. On the days 1,2,3,4 and 5, 2hr after the administration of the drug, the time for the onset of PCD was recorded as on day 0.

Statistical Analysis: All the data were expressed in mean ± S.E. Statistical significance was determined by ANOVA test

RESULTS:

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Groups	97982.72	2	48991.36	69.3056	0.0000	3.097698
Days	19926.44	5	3985.289	5.637787	0.0001	2.315689
Interaction	30703.5	10	3070.35	4.343469	0.0001	1.937567
Within	63620	90	706.8889			
Total	212232.7	107				



DISCUSSION: *Hingulad Rasa Sindoor* efficacy on Histamine induced Bronchospasm in guinea pigs was conducted to establish its Anti Histaminic Activity. The study showed statistically significant at p<0.0001. *Hingulad Rasa Sindoor* prolonged latent period of *pre-convulsive dyspnoea* (PCD) following Histamine aerosol, peaks were observed in 4th and 5th day of the study PCD latent period increased from 3rd day onwards, this may be suggestive of anti histaminic activity of *Hingulad Rasa Sindoor*.

Sulphur content present in the *Hingulad Rasa Sindoor* which actively blocks the Histamines receptors as well as mast cell stabilization indicative of its Anti Histaminic activity. The effect of drug showed steadily increased action from 3rd day more on 4th and 5th day.

PROBABLE MODE OF ACTION OF HINGULAD RASA SINDOOR: As Rasa yogas are literary evidences written after past observation and discussions, a new concept of reverse pharmacology is now taking its turn in research. This is well explained in Ayurveda as *karyat karanaanumanam*.[5] According to *loka purusha samyata*,[6] the universe and the human body are composed of panchamahabhoota. The drug composition of these *mahabhootas* is known by inferences on the basis of their properties like *rasa, guna, virya, vipaka and prabhava*. Which are inherent in drug on which pharmacodynamics depends.

In the allergic activity adjustment goes haywire and the smooth muscles of the airways go in to spasm of contraction due to variety of stimuli, leading to narrowing of airways lumen. The other factors in the pathogenesis of allergic phenomena are hyper secretion of mucus and fluids in to the lumen of the airways which slowly dries up and produce plugging of the airways.

The essential lesion of Allergic Activity is *Pranavaha sroto-avarodha* (narrowing of the lumen). The process to be well-regarded (*samprapti vighatana*) is vitiated *vata* (Bronchospasm) and *kapha* (mucosal inflammation and excessive mucus production).

Kapha dosha obstructing the *Pranavaha srotas* is treated by *Kaphahara, Kaphavilayana* and *kaphanissaraka dravya*. *Kasa* should be treated by *Kasagna chikitsa*. *Pranavilomata* is treated by*Prana Anulomana, Srotomardava chikitsa. Hingulad Rasasindoor* is presumed to achieve it in the following manner.

The dietetic factors involved in this disease are *vata* and *kapha prakopaka* in nature responsible for *sroto-avarodha* at the level of *Pranavaha* and *Udanavaha srotas* and *Vibandha* at the level of *Annavaha srotas*.

Shodhita Hingula having properties like *Tridoshagna, Amapachana,Kaphagna* according to Rasaratna Samuchayam.[7] which helps in pacification of allergens which are produced from *Udhwa Amashayastha Kapha.*

Shodhita Gandhaka having properties *like kaphavatahara,*[8] rasa like *katu,tikta,kashaya* helps in expectoration of mucus from lumen and removes the obstruction by pacifying the vitiated vata.

"***Prano Udanah Annavahini Srotamsi Dushayan***"[9]. *Vata and kapha doshas* are invariably involved in the pathogenesis and hence both should be treated simultaneously. Since the treatment of these doshas is actually contradictory a balanced therapeutic procedure should be followed so that further aggravation of any of these should be prevented. *Hingulad Rasa sindoor* is having *tridosha-shamaka*[10.] property and hence it can best manage and alleviate the *dosha prakopa*.

Hingulad Rasa sindoor may be absorbed from Gastro-Intestinal tract and distributed to various tissues including brain. Hence, the biological activity can be well correlated.

As a result of its *Kledana guna* it liquefies and expectorates the mucus. *Deepana, pachana* properties of *HRS* causes *amapachana in urdhwa amashaya* which is the seat of origin of production of allergen in the body. By these properties *kledaka kaphotpatti* is regulated so as to enable it to perform its normal functions which prevent sroto-avarodha.

Inflammation of bronchial smooth muscle resulting in increased air resistance, decreased FEV (Forced Expiratory Volume) and flow rate and hyperinflation of the lungs is counteracted by anti-inflammatory action of HRS.

Hence, on the basis of present study the effect of HRS is found to be very useful as it relieves the allergic activity in more Number of Guinea pigs in low dose as well as high dose group also which is statistically evident.

CONCLUSION: Animal experimental study of *Hingulad Rasa Sindoor* was carried out on guinea pigs under all necessary precautions. Study showed significant increase in pre convulsive dyspnoea of pigs as the drug was administered in lower and higher doses. it showed statistically significant ($p<0.0001$) PCD in Low and High dose group.

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