EVALUATION OF ANTIHISTAMINIC ACTIVITY OF SOYMIDA FEBRIFUGA ROXB. ROOT BARK IN GUINEA PIG.

*Ananta Krushna Palei¹, Hetal Aghera.², K. Nisteswar³

²Ph.D Scholar, Pharmacology Lab. IPGT & RA Gujarat Ayurved University.
³Prof. And Head Dept. of Dravyaguna. IPGT & RA Gujarat Ayurved University.

ABSTRACT

Soymida ferifuga commonly known as mamsarohini of family meliaceae, is an ayurvedic classical medicinal plant with a reputation in folk medicine. Its root bark extensively used in treating leucorrhoea, menorrhagia, dysmenorrhoea. The present study was performed to evaluate anti-histaminic activity of root bark Soymida febrifuga in guinea pig. To assess the antihistaminic activity of the test drug, the experiment was carried out on isolated guinea pig ileum and prepared according to the method described by Ghoshi. Significant results are found in this study.

Key Words: Soymida Febrifuga Roxb., Mamsarohini.

1 INTRODUCTION

India has one of the oldest, richest and most diverse traditional medicine cultures in the world. The tribal folks spread across the country make use of medicinal plants through oral traditions. Millions of households, particularly in rural areas, use medicinal plants as self medication, for preventive, promotive and curative applications. The traditional system of medicine and the folklore depend on higher plants for preparing formulation. In India several thousands of plant species are being used by thousands of ethnic communities. Tribal of Andhra Pradesh and Chhattisgarh states administered pounded root bark (10gm) or (20gm) of soymida febrifuga in the form of decoction to relieve during menstruation, reported the utility of Mamsarohini in muscular dystrophies. The bark is also reported decoction of Mamsarohini is found to be (50 ml twice daily) effectively reduced the CPK levels in 2 cases of DMDiii. The wound healing properties of stem bark are reportediv.
2 MATERIALS AND METHODS

2.1 Procurement of plant materials
Fresh plant material was collected from its natural habitat of Gandhamardana hill ranges, Bolangir, Orissa, India.

2.2 Authentication of drug
Plant for the present study was authenticated at Department of Pharmacognosy, I.P.G.T. & R.A. Gujarat Ayurveda University, Jamnagar, Gujarat, where the sample is deposited under voucher specimen No. 6007.

2.3 Drying and size reduction of plant materials
Collected root was washed thoroughly and the root bark was peeled out. The cleaned material was subjected to drying under shade and subjected for size reduction to powder (Mesh 120#) by pulverization. The powdered drug was stored in a tightly packed polythene bag in glass container (Wallis et al., 1985).

2.4 Preparation of test drug and Histamine
Test drug was dissolved in distilled water and desired concentration was prepared. Histamine (HiMedia Laboratories Pvt ltd., Mumbai-86, Lot. No- 0000067545, India) was dissolved in physiological saline. Physiological saline was widely recommended as it is known to be compatible with human tissue, and isotonicity with body fluid.

2.5 Experimental animals
Dunkin-Hartley guinea pig weighing 400-450g were procured from the animal house attached to pharmacology laboratory, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat. They were fed with food and water ad libitium. The animals were acclimatized for at least one week in lab condition before commencement of the experiment in standard laboratory conditions 12 ± 01 hour day and night cycle, maintained at 25 ± 3oC and 40 to 60 % humidity. The animal protocol was approved by the Institutional Animal Ethics Committee with approval number; IAEC/10/12/20.

2.6 Anti histaminic activity: (Effect of test drug on the guinea pig ileum - in vitro)
To assess the antihistaminic activity of the test drug, the experiment was carried out on isolated guinea pig ileum and prepared according to the method described by Ghosh. Overnight fasted guinea pig was stunned by head blow, neck vessels cut and the animal is
bled out. Abdomen was opened through a midline incision, the ileocaecal junction exposed; the terminal ileum was cut after discarding 10cm nearest to the ileocaecal junction. Isolated ileum was placed on a petri dish containing Tyrode solution (NaCl2-137.0, KCl-2.70 CaCl2-1.80, MgCl2-0.1-1.00, NaHCO3-11.90, NaH2PO4-0.40 and Glucose-5.55 mM per liter) at 37°C. A 2.5 cm long piece of the distal part of the ileum was used for the study. Experiments were performed in organ baths containing 40 mL Tyrode solution at 37°C and bubbled with Oxygen (air, O2, or 5% CO2 in O2 used for mammalian smooth muscles). The concentrations of the ileum strips to histamine were recorded on smoked kymograph paper with frontal writing lever having a 1:7 magnification and 500mg initial tension. The preparation was allowed to equilibrate for 30 min during which the Tyrode solution was changed at intervals of 10 min. Initially the dose responses were recorded with a standard spasmogenic drug i.e. histamine to select a dose producing sub-maximal response. Standard response was taken with histamine with a dose of 15ng/ml, 20ng/ml, and 25ng/ml of bath fluid. Contact time of 30 s and 15 min time cycle was followed for recording the response of Histamine. The antagonistic effect of test drug per se if any and the modulatory effect on the tissue response to histamine were recorded. The drug was added to the bath one minute before adding histamine.

3 RESULTS AND DISCUSSION

3.1 Anti histaminic activity

At the dose of (400ng/ml bath fluid) test drug is highly effective in inhibiting histamine induced contractions against 15ng/ml of histamine. However a moderate effect was observed against histamine induced contractions at 20ng/ml of histamine and mildly effective against histamine induced contractions at 25ng/ml of histamine.

<table>
<thead>
<tr>
<th>No.</th>
<th>Drug Dose</th>
<th>Histamine conc.</th>
<th>% inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>400ng/ml bath fluid</td>
<td>15ng/ml</td>
<td>17.15</td>
</tr>
<tr>
<td>2.</td>
<td>400ng/ml bath fluid</td>
<td>20ng/ml</td>
<td>15.56</td>
</tr>
<tr>
<td>3.</td>
<td>400ng/ml bath fluid</td>
<td>25ng/ml</td>
<td>7.28</td>
</tr>
</tbody>
</table>

Observed a increase in sensitivity to several contractile agents in guinea pig isolated ileum preparation has been made by number of investigators. The results obtained with histamine in guinea pig isolated ileum preparation are sensitive to histamine against at the lower concentration. This study fails to produce maximum response to this contractile agent. This investigation reveals that the samples which partially antagonist is an agent which serve to
inhibit the release or action of histamine. The drug can be describe as an histamine antagonist.

CONCLUSION

Root bark of *Soymida febrifuga* is having marked anti-spasmodic activity. The therapeutic effectiveness in the treatment of menorrhagia and dysmenorrhoea, and use in traditional medicine of this plant could be due to its spasmolytic effect.

REFERENCES

2. Dr. K. Hemadri, A Treatise on Tribal medicine, Dr. Koppula Hemadri’s house of tribal medicine, Vijayawada. 2011: pp.22.