INTRODUCTION

Cassia siamea Lamk. and Delonix regia Rafin., are the medicinal plants of sub family caesalpiniaceae, Cyamopsis tetragonoloba Taubert., Samanea saman Merr. and Vigna trilobata Verdc. belongs to sub family papilionaceae, comes under the family leguminoseae. The stem bark of Cassia siamea Lamk. is used as a mild purgative and its decoction is given in diabetes. The roots antiemetic activity was determined by calculating the mean decrease in number of retching orally, using chick emesis model. Emesis was induced in male chicks by the oral administration of copper sulphate (50 mg/Kg body weight). The antiemetic activity was determined by calculating the mean decrease in number of retching as compare with control. All the extracts showed antiemetic activity when compared with standard drug chlorpromazine (150 mg/kg body weight orally). Among all extracts, Delonix regia showed highest (96.74%) and Cassia siamea lowest (18%) antiemetic activity.

Keywords: Leguminoseae, Antiemetic, Cassia siamea, Cyamopsis tetragonoloba, Delonix regia, Samanea saman, Vigna trilobata.

MATERIALS AND METHOD

Plant material

The leaves of Cassia siamea Lamk., Cyamopsis tetragonoloba Taubert., Delonix regia Rafin., Samanea saman Merr., and Vigna trilobata Verdc., were collected from Karachi during summer 2011 and identified by a taxonomist. Voucher specimen of Cassia siamea (CS-03-11), Cyamopsis tetragonoloba (CT-04-11), Delonix regia (DR-05-11), Samanea saman (SS-06-11) and Vigna trilobata (VT-07-11) were deposited in the herbarium of the department. The plant materials were soaked in methanol for seven days at room temperature then solvent was evaporated by a rotary evaporator at 40°C.

Animals

Young male chicks 4 days of age, weighing from 32-52 g were taken from local market. All chicks were kept under laboratory conditions at room temperature allowed free access to food and water ad libitum. The groups of animals (seven groups of six animals each) were transferred in different cages with their identification mark. Permission and approval for animal studies were obtained from Board of Advanced Studies and Research, University of Karachi [BASR.Res.No.5(4)-2007].

Antiemetic activity

The antiemetic activity was determined by using chick emesis model following the protocols of Akita et al, 1998. The extracts of Cassia siamea Lamk., Cyamopsis tetragonoloba Taubert., Delonix regia Rafin., Samanea saman Merr. and Vigna trilobata Verdc. were dissolved in 0.9% saline containing 5% DMSO and 1% tween 80. All tested extracts were administered at a dose of 150 mg / kg body weight orally. Control group received normal saline solution. After 10 minutes copper sulphate was administered orally at 50 mg / kg, then the number of retching was observed during next ten minutes. Chlorpromazine (150 mg/kg. b.w) was used as standard antiemetic drug.

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The percent inhibition was calculated by the following formulae:

\[
\text{Inhibition (\%)} = \left( \frac{A - B}{A} \right) \times 100
\]

Where, \( A \) = Frequency of retching in control group, \( B \) = Frequency of retching in test group.

**RESULTS AND DISCUSSION**

The methanolic extracts of the leaves of *Cassia siamea* Lamk., *Cyamopsis tetragonoloba* Taubert., *Delonix regia* Rafin., *Samanea saman* Merrill, *Vigna trilobata* Verdc. showed antiemetic effect. After administration of 150 mg/kg b.w., of chlorpromazine and plant extracts, the numbers of retches were reduced. Group of chicks treated with chlorpromazine was found to have 45 retches as compared to the 69 retches of control group, thus chlorpromazine reduced the retches by 33.97 %. The extracts of *Cassia siamea* Lamk., *Cyamopsis tetragonoloba* Taubert., *Delonix regia* Rafin., *Samanea saman* Merr. and *Vigna trilobata* Verdc. showed 18, 34.39, 96.74, 76.41 and 36.32% inhibition of emesis (Table 1 and Figure 1). All extracts significantly (\( p < 0.05 \) and \( p < 0.01 \)) suppressed the frequency of copper sulfate-induced retching in young chicks. Oral copper sulfate induces emesis by peripheral action through excitation of visceral afferent nerve fibers of GIT\(^\text{23}\) and all tested extracts have protective effects against copper sulfate induced retching, possibly by peripheral action. However, investigation of responsible antiemetic compounds is further needed.

**Statistical Analysis**

Antiemetic activity is expressed as mean ± S.E.M (Table 1). Statistically significant difference \( p < 0.05 \) and \( p < 0.01 \) shows significant and most significant values respectively using unpaired student's t-test.

**Table 1: Antiemetic effect of five leguminous plants**

<table>
<thead>
<tr>
<th>Treatments (mg/kg p.o.)</th>
<th>Mean No. of retches ± S.E.M.</th>
<th>Inhibition of emesis (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal saline solution</td>
<td>69.10±2.16*</td>
<td></td>
</tr>
<tr>
<td>CS(150)</td>
<td>34.39</td>
<td></td>
</tr>
<tr>
<td>CT (150)</td>
<td>45.62±3.84*</td>
<td>33.97</td>
</tr>
<tr>
<td>DR(150)</td>
<td>22.51±1.00**</td>
<td>96.74</td>
</tr>
<tr>
<td>SS (150)</td>
<td>16.30±2.67*</td>
<td>76.41</td>
</tr>
<tr>
<td>VT (150)</td>
<td>44.00±3.82*</td>
<td>36.32</td>
</tr>
</tbody>
</table>

Key: CP-Chlorpromazine, CS-Cassia siamea, CT-Cyamopsis tetragonoloba, DR-Delonix regia, SS- Samanea saman, VT-Vigna trilobata. N=6 for each group, p.o.-per oral,S.E.M.-Standard Error of Mean,*p<0.05 & **p<0.01 vs. control showing significant and most significant values using unpaired students’ t-test

**REFERENCES**


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