Antiimplantation Activity of Alcoholic Extract of Rivea hypocrateriformis

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Different doses of 95% alcoholic extract of whole plant of Rivea hypocrateriformis (Convolvulaceae) was tested for antiimplantation activity in female albino rats. The alcoholic extract at a dose of 200 mg/kg body weight has showed 66.66% antiimplantation activity. Whereas, at 400 mg/kg body weight, significantly prevented pregnancy by 100%. The antiimplantation activity was reversible on withdrawal of the treatment of the extract.

One approach being pursued to identify new antifertility agents is the search for their presence in natural sources. Many plant preparations are reported to have fertility regulating properties in the ancient Indian literature. Many have been tested for such effects, but with no success. Hence, the search needs to be continued R. hypocrateriformis (convolvulaceae) is a large climbing shrub, found almost throughout India. Leaves orbicular, cordate, mucronate; flowers white, fragrant, clove-scented, opening in the evening, closing during day; fruit a globose, reddish brown capsule, usually 1-4 seeded. In and around Basavakalyan (Bidar District, Karnataka), Ayurvedic physicians use R. hypocrateriformis to prevent fertility. Eventhough the plant is known for a large number of other biological activities, no systematic investigation of its biological activities has been done so far. Literature survey does not reveal any chemical or biological investigations on this plant. Hence, in continuation of our work on antifertility activity of medicinal plants, in the present investigation we have subjected R. hypocrateriformis to antiimplantation testing in female albino rats.

Fresh aerial plant parts of R. hypocrateriformis were collected during July and August, 1997 in and around Basavakalyan (Bidar District, Karnataka) and authenticated in the Herbarium, Department of Botany, Gulbarga University, Gulbarga. The shade-dried plant (350 g) was powdered and extracted with 95% alcohol (3 l) in a Soxhlet extractor exhaustively for 18-20 h. Alcoholic extract was then concentrated to dryness in a flash-evapo-

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Table 1 - Antifertility effect of 95% alcoholic extracts of *R. hypocrateriformis*

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Treatment</th>
<th>Dose mg/kg</th>
<th>No. of rats having no implantation sites on day 10</th>
<th>Mean No. of Implants±S.E.</th>
<th>% of rats having no implantation sites on day 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control</td>
<td>-</td>
<td>Nil</td>
<td>11.0±0.46</td>
<td>Nil</td>
</tr>
<tr>
<td>2</td>
<td>Alcoholic (95%) extract</td>
<td>200</td>
<td>4</td>
<td>03.0±1.92*</td>
<td>66.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>400</td>
<td>6</td>
<td>0.00±0.00*</td>
<td>100</td>
</tr>
</tbody>
</table>

Each group consisted of 6 rats. Asterisk denotes significant difference at P<0.05 when compared to control.

fetus was weighed and examined for gross defects. The litters were allowed to grow to check post-natal growth and monitor any congenital abnormalities. The results were judged significant if P<0.05.

In the present study, alcoholic extract of *R. hypocrateriformis* was tested for its antiimplantation activity. Table-1 reveals that, the alcoholic extract of *R. hypocrateriformis* at two different doses, 200 and 400 mg/kg significantly inhibited pregnancy in 4/6 rats with a mean number of implants of 3.0 ± 1.92 (P<0.05) and 6/6 rats with mean number of implants 0.00±0.00 (P<0.05), respectively.

All the experimental and control animals that continued their pregnancy delivered normally after full term. There was no defect in any of the litters and there was no appreciable changes in their weights. After discontinuation of treatment, all the animals were mated, this resulted in pregnancy and delivery of normal litters indicating that the action of alcoholic extract of *R. hypocrateriformis* was reversible.

Preliminary phytochemical studies indicated the presence of steroids in the alcoholic extract. Since various steroids are known to possess antifertility activity. The antiimplantation activity of alcoholic extract of *R. hypocrateriformis* might be due to the presence of such compounds.

REFERENCES