Global research on antifertility agents is going on to tackle the problems of 'Population Explosion'. Hormonal drugs are available for fertility control but they are not free from side effects. Hence, the search for a product from indigenous plants is proposed which could be effectively used in place of the 'Pill'.

In India, there are many plants with anti-fertility properties. They are enlisted under the heading of possible antifertility plants (Chaudhury, 1966; Saxena, 1973; Farnsworth et al., 1975; Kamboj and Dhawan, 1982; Singh, 1990, Singh et al., 2000).

*A. precatorius* Linn. (Family - Leguminaceae), a perennial twinner plant is one of them and commonly called as 'Ratti' or 'Gunchi' or 'Gunja'. The seeds are said to be a local contraceptive and used by Indian women for family planning. In present communication, effect of the 50% alcoholic extract of seeds of *A. precatorius* on implantation of female rats is reported.

### Phytochemistry:

Misra et al. (1968) obtained protein components by paper electrophoresis from the seeds of *A. precatorius*. These protein components are responsible for haemagglutinating activity. The activity was same as shown by globulin under identical experimental condition. Two new alkaloids, the methyl ester of N, N-dimethyl tryptophan metho-cation and picatorine were isolated from the seeds of *A. precatorius*. Later on, abrine, hypaphorine and two earlier known alkaloids now identified as choline and trigonelline were also isolated from the seeds. In addition to above, Ghosal and Dutta et al., (1971) indicated that trigonalline as the gallic acid ester was highly active principle. Recently, Baijal and Mathur (1981) obtained steroidal fraction of seed oil from *A. precatorius* and elucidated the antifertility activity in male albino rats.

### MATERIALS AND METHODS

Twenty, healthy, adult, cyclic female albino rats (*Rattus rattus norvegicus*) weighing between 100 to 125 gms were procured for the present experiment. They were maintained under good husbandry conditions as per guidelines of Institutional Animal Ethical Committee appointed by Principal of the College. The anti-implantation study was conducted after successful mating of all 20 female rats with proven fertile male rats. Two females were left for overnight with one male (2 : 1). Next morning, the successful mating was confirmed by presence of spermatozoa in the vaginal smear. Such female rats were designated as day first (D1) of pregnancy. They were divided into 04 groups each with 05 pregnant rats.

The dried seed powder of *A. precatorius* was soxhleted with 50% alcohol. The extract was evaporated to dryness under low temperature on the water bath and thus the dried extract as powder was given to experimental rats in the form of doses. Three doses 10, 20 and 30 mg/kg were administered orally as aqueous suspension in distilled water (w/v) were administered orally as aqueous suspension with the help of soft catheter tube fitted into a syringe. First group of rats (05 first rats in each group) served as control (vehicle treated). The dose 10 mg dissolved in distilled water in such a way that corresponded 02 ml of water and given to second group of pregnant rats. Similarly, other doses 20 and 30 mg/kg were prepared and given. All the doses were given to D1 to
D7 of pregnancy continuously. On D10 of pregnancy, all the treated rats were killed and their uteri examined for implants. They were counted and compared with the implants of control pregnant female rats. The significance of difference of number of implants treated and control rats was assessed by the student ‘t’ test taking p < 0.05 as significant.

RESULTS AND DISCUSSION

The anti-implantation effect of various doses of 50% alcoholic extract of seeds of *A. precatorius* is presented in Table 1. The dose 10 mg/kg was failed to exert any effect on implantation while the dose 20 mg/kg prevented the pregnancy in 80% of rats. The implantations were also greatly reduced. These were 1.65 ± 0.30 in comparison to the number of implants (8.20 ± 2.15) in control rats. The dose 30 mg/kg was highly effective as it caused inhibition of pregnancy in 100% of treated rats. The rats were without implants in their uterici. Thus, this dose showed anti-pregnancy or anti-implantation effect.

The dose 30 mg/kg of 50% alcoholic extract of *A. precatorius* seeds appeared highly effective to prevent pregnancy as no implants were found in the uterus on day tenth (D10) of pregnancy. According to Desai and Sirsi (1964), the powdered seeds of this plant when taken orally by females can disrupt their function of uterus, inhibit conception and cause abortion. Desai and Rupawala (1967) reported antifertility activity of the steroidal fraction (oil) extracted from the seeds of this plant on female rats and mice.

In the present study, the dose 30 mg/kg clearly demonstrated the anti-implantation effect of 50% alcoholic extract of *A. precatorius* seeds. Agarwal et al. (1970) found out antifertility activity in the roots of *Abrus precatorius*. Saxena (1973) reported the traditional use of *A. precatorius* seed as contraceptive. Jain and Khan (1996) studied antifertility activity of petroleum ether extract of seeds of *A. precatorius* and found altered sexual behaviour of albino rats. Some Indian plants like *Sesbaina sesban* seeds, *Hibiscus rosasinensis* flower, *Carica papaya* seeds also reported with similar effects in female albino rats (Singh and Singh, 1992 and Kholkute and Udupa, 1974). According to Farnsworth et al. 1975, the active principle that is may be steroid responsible for anti-implantation effect of such plants. Many plant parts, seeds, leaves, flowers, roots etc. bearing non-steroidal compounds (Lerner, 1969) which may alter the physiological state of uterus of female mammals including human beings so that implantation does not occur.

CONCLUSION

It is concluded from the present study that the 50% alcoholic extracts of seeds of *Abrus precatorius* Linn prevent implantation in the uterus of female albino rats.

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REFERENCES


Table 1: Effect of *Abrus precatorius* seed (50% alcoholic extract) on implantation in female albino rats administered from D1 to D7 of Pregnancy

<table>
<thead>
<tr>
<th>Doses (mg/kg)</th>
<th>No. of rats mated and used</th>
<th>No. of rats without their implants in uterus</th>
<th>Percentage of Anti-implantation activity</th>
<th>No. of Implantations (M ± S.E.) on D 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>05</td>
<td>Nil</td>
<td>Nil</td>
<td>8.20 ± 2.15</td>
</tr>
<tr>
<td>10 mg</td>
<td>05</td>
<td>01</td>
<td>20%</td>
<td>6.30 ± 1.53</td>
</tr>
<tr>
<td>20 mg</td>
<td>05</td>
<td>04</td>
<td>80%</td>
<td>1.65 ± 0.30</td>
</tr>
<tr>
<td>30 mg</td>
<td>05</td>
<td>05</td>
<td>100%</td>
<td>Nil</td>
</tr>
</tbody>
</table>

1. SINGH AND PUROHIT (322)
ANTI-IMPLANTATION EFFECT OF ABRUS PRECATORIUS


