PRELIMINARY OBSERVATIONS IN THE RABBIT
ON THE ANTI-OVULATORY ACTIVITY PRESENT
IN TAXUS BACCATA LINN. LEAVES


Department of Pharmacology, Postgraduate Institute
of Medical Education and Research, Chandigarh, India

(Received 10th November 1969, revised 6th January 1970)

Taxus baccata Lin., a tree which grows abundantly in India, has been reported
to possess an antifertility effect (Kirtikar & Basu, 1935; Chopra, Nayar &
Chopra, 1956; Chopra, Chopra, Handa & Kapoor, 1958; Chaudhury, 1966).
Khanna, Garg, Vohora, Walia & Chaudhury (1969) recently reported that
anti-implantation activity is present in the leaves. Possible anti-ovulatory
activity of different extracts of leaves of Taxus baccata has been screened on
fifty-eight, adult, non-pregnant rabbits, each weighing between 1.5 and 2.0 kg.
The rabbits were obtained from a local source and housed in independent
cages for at least 3 weeks before use.

The air-dried, powdered leaves of Taxus baccata were successively extracted
with petroleum ether (b.p. 60 to 80°C), alcohol (95%) and distilled water and the
extracts were administered as a suspension with gum acacia, by a soft rubber
catheter, at different intervals before induction of ovulation. Ovulation was
induced by injecting copper acetate intravenously (4-0 mg/kg), a method
which has been standardized in this laboratory (Khanna & Chaudhury,
1968). Earlier investigators have used induction of ovulation by cupric gluconate
(Suzuki & Bialy, 1964) as a method for testing anti-ovulatory substances. To
assess ovulation, laparotomies were carried out on the rabbit 48 hr after the
copper acetate injection and the bleeding points on each ovary were noted.

The results of the experiments are shown in Table 1. The results indicate
that, when administered at a dose of 200 mg/kg for 2 days, the petroleum
ether and alcoholic extracts of the leaves of Taxus baccata did not prevent
ovulation to any marked degree. When the aqueous extract of the leaves was
administered at a dose of 400 mg/kg for 2 days, maximal anti-ovulatory activity
was detected (100%). When the same dose of the aqueous extract was adminis-
tered for only 1 day, there was no anti-ovulatory activity. Activity was also
detected when doses of 200 and 250 mg/kg were administered for 2 to 3 days
before induction of ovulation. When the average numbers of bleeding points
(ovulation points) in the different groups of animals were compared, it appeared
that there were fewer in rabbits when Taxus baccata had been administered at a
dose of 200 mg/kg for 3 days (1.00), 250 mg/kg for 2 days (1.60), and 400 mg/kg
for 1 day (1.80). However, bleeding points were present after administration of
copper acetate in these animals while there were no bleeding points seen in ten
**Table 1**

ANTI-OVULATORY ACTIVITY OF DIFFERENT EXTRACTS OF *Taxus baccata* Linn. LEAVES

<table>
<thead>
<tr>
<th>Extract</th>
<th>Dose (mg/kg)</th>
<th>Days of administration</th>
<th>No. of rabbits used</th>
<th>No. of bleeding points without bleeding points</th>
<th>No. of bleeding points in individual rabbit</th>
<th>Mean ± S.E. of bleeding points/rabbit when calculated on the basis of all rabbits in the group</th>
<th>Percentage of rabbits failing to ovulate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>—</td>
<td>—</td>
<td>5</td>
<td>Nil</td>
<td>5, 5, 3, 2, 4</td>
<td>3·80 ± 0·58</td>
<td>Nil</td>
</tr>
<tr>
<td>Petroleum ether</td>
<td>200</td>
<td>2</td>
<td>4</td>
<td>Nil</td>
<td>2, 3, 5, 6</td>
<td>4·00 ± 0·91</td>
<td>Nil</td>
</tr>
<tr>
<td>Alcoholic</td>
<td>200</td>
<td>2</td>
<td>4*</td>
<td>1</td>
<td>2, 4</td>
<td>2·00 ± 0·81</td>
<td>33·30</td>
</tr>
<tr>
<td>Aqueous</td>
<td>200</td>
<td>2</td>
<td>15</td>
<td>10</td>
<td>3, 1, 1, 5, 1</td>
<td>0·73 ± 0·34</td>
<td>66·60</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>3</td>
<td>10</td>
<td>6</td>
<td>4, 2, 1, 3</td>
<td>1·00 ± 0·38</td>
<td>60·00</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>4, 4</td>
<td>1·60 ± 0·76</td>
<td>60·00</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>2</td>
<td>10</td>
<td>10</td>
<td>Nil</td>
<td>Nil</td>
<td>100·00</td>
</tr>
<tr>
<td></td>
<td>400</td>
<td>1</td>
<td>5</td>
<td>Nil</td>
<td>4, 1, 2, 1, 1</td>
<td>1·80 ± 0·56</td>
<td>Nil</td>
</tr>
</tbody>
</table>

* One animal in this group died after administration of the extract.
rabbits when *Taxus baccata* had been administered at a dose of 400 mg/kg for 2 days. In control rabbits, which were given the vehicle alone, bleeding points were always seen (3.80).

The results indicated that the aqueous extract of *Taxus baccata* possesses anti-ovulatory activity. Further chemical and pharmacological investigations are being conducted with this extract.

The work was sponsored by the Indian Council of Medical Research, New Delhi. The technical help of Mr. J. K. Chhabra is acknowledged.

REFERENCES


