April 1971
Ind. J. Physiol. & Pharmac.

Extract of Momordica charantia had
ature female rats were treated for
100 g while in control animals it
activity in the extract.

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steroids on implantation in rats. J.

ENHANCEMENT OF MORPHINE ANALGESIA BY A NEW ADRENERGIC BETA
RECEPTOR ANTAGONIST, 1—ISOPROPYLAMINO-3-(4-INDANOXY)—2-PROPA
HCl (USVC—6524)

Sir,

On the basis of potentiation of morphine analgesia by tolazoline and its blockade by pro-
prazol, it was postulated by Gupta and Deshpande (3) that adrenergic alpha and beta receptors,
with opposing actions, exist in central nervous system. A suggestion implied in their work was
that the stimulation of beta receptors accounted for the analgesic activity of morphine. Hence
the ability of a new adrenergic beta receptor antagonist, USVC-6524 [1-isopropyl-amino-3-(4-
indanoxy)-2-propanol HCl] to modify morphine analgesia has been investigated in the present
study.

The experiments were performed on adult albino rats of both sexes weighing 80-140 g. The
method of Gupta and Kulkarni (2) for testing the analgesic activity with a Techno Analgesiometer
was followed in all essential details. The animals were divided into 4 groups and the reaction time
was recorded before and 30 min after the intraperitoneal administration of drugs.

**TABLE I : Analgesic effect of 1-isopropyl-amino-3-(4-indanoxy)-2-propanol HCl with morphine (USVC-6524)
alone and in combination**

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of animals</th>
<th>Drug and dose</th>
<th>Mean reaction time in sec ± S.E.</th>
<th>Net increase in reaction time (± S.E.)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>10</td>
<td>USVC-6524, 5 mg/kg</td>
<td>5.1 ± 0.42</td>
<td>5.8 ± 0.36</td>
<td>0.7 ± 0.4</td>
</tr>
<tr>
<td>II*</td>
<td>18</td>
<td>USVC-6524, 10 mg/kg</td>
<td>4.4 ± 0.37</td>
<td>7.0 ± 0.75</td>
<td>2.6 ± 0.58</td>
</tr>
<tr>
<td>III*</td>
<td>7</td>
<td>Morphine, 5 mg/kg</td>
<td>5.1 ± 0.45</td>
<td>9.1 ± 1.14</td>
<td>4.0 ± 0.94</td>
</tr>
<tr>
<td>IV*</td>
<td>10</td>
<td>Morphine, 5 mg/kg plus, USVC-6524, 10 mg/kg</td>
<td>4.2 ± 0.51</td>
<td>11.6 ± 1.09</td>
<td>7.4 ± 1.1</td>
</tr>
</tbody>
</table>

*Comparison of analgesic activity in group IV with that in groups II and III showed statistically significant differences:

Group IV Versus III : P<0.01
Group IV Versus II : P<0.001
The results are summarized in Table I. Since USVC-6524, a potent adrenergic beta receptor blocking agent (5), enhances the activity of morphine as well as exhibits significant analgesic action of its own in the present study, involvement of central adrenergic beta receptors in mediating morphine analgesia is not possible. This is also corroborated by the previously reported lack of evidence for the existence of clearly demarcated adrenergic alpha and beta receptors in the brain (1, 4).

ACKNOWLEDGEMENT

Grateful acknowledgement is made to USV Pharmaceutical Corporation, New York for the generous supply of USVC-6524.

REFERENCES