KETAMINE AS THE SOLE ANAESTHETIC AGENT FOR LAPAROSCOPIC STERILIZATION

The effects of premedication on the frequency of adverse clinical reactions


SUMMARY

Ketamine, as the sole anaesthetic agent, was assessed in a double-blind study of 135 female patients who underwent laparoscopic sterilization. The patients were allocated randomly to one of four groups according to the type (pentobarbitone or droperidol) and route (i.v. or i.m.) of premedication. In addition all the patients received hyoscine i.m. Neither pentobarbitone nor droperidol prevented adverse emergence reactions and the total frequency of dream-like activity. However, patients who received pentobarbitone i.v. did not recall unpleasant dream-like activity. Patients who received droperidol i.v. had the shortest recovery time after ketamine anaesthesia. There was a high incidence of visual disturbances in all groups. Droperidol protected against the initial increase of heart rate, and pentobarbitone against the increase in arterial systolic pressure associated with ketamine.

Persistent, vivid dream-like experiences have contributed to the poor acceptance of ketamine and hypertension and tachycardia have reduced the scope of its clinical use (Coppel, Bovill and Dundee, 1973; Langher and Neuhaus, 1973; Krestow, 1974; Liang and Liang, 1975). The use of ketamine as sole anaesthetic agent for intra-abdominal procedures has been controversial as a result of the alleged lack of adequate protection of the patient against visceral reflexes produced by surgical stimulation (Azar and Ozonek, 1973; Langher and Neuhaus, 1973). Barbiturates have been used as premedication agents for ketamine anaesthesia with variable results (Knox, Bovill and Clark, 1970; Dawson, Michenfelder and Theye, 1971; O’Neill, Minnie and Zadigan, 1972). However, since these earlier reports, a great deal of experimental and clinical data indicate that the barbiturates may antagonize some of the undesirable central actions of ketamine (Dawson, Michenfelder and Theye, 1971; Magbagbeola and Thomas, 1972; Winters, Ferrer-Allado and Guzman-Flores, 1972; Yung Fong Sung and Holtzman, 1973).

Droperidol has been accepted as a premedicant agent for ketamine anaesthesia to reduce emergence phenomena (Bovill, Clarke and Dundee, 1971; Becsey, Malamed and Radnay, 1972; Bovill and Dundee, 1972; Erbgurth, Reiman and Klein, 1972). However, according to some reports, droperidol increases the frequency of unpleasant dream-like experiences (Knox, Bovill and Clarke, 1970; Bovill, Clarke and Dundee, 1971; Erbgurth, Reiman and Klein, 1972). Its effectiveness in controlling the initial cardiovascular stimulation produced by ketamine has been questioned (Bovill, Clarke and Dundee, 1971; Wilson, Thomas and Ashy, 1974). Therefore, we have examined the effects of pentobarbitone and droperidol in a double-blind randomized clinical trial on the frequency and intensity of adverse reactions after ketamine anaesthesia. In addition, the effects of ketamine alone on visceral reflexes produced by surgical stimulation were assessed.

METHODS

One hundred and thirty-five female patients aged 21–35 yr (weight range 41–72 kg) undergoing laparoscopic sterilization were allocated randomly to one of four groups. Patients with a history of hypertension, hyperthyroidism or psychiatric disorders were excluded from the study.

Pentobarbitone 1.5 mg kg⁻¹ was administered i.v. (group I) or i.m. (group II) and droperidol 0.075 mg kg⁻¹ given i.v. (group III) or i.m. (group IV). The i.m. premedication for groups II and IV was...
administered together with hyoscine 0.4 mg i.m. 30–45 min before surgery. The i.v. premedication for groups I and III was given immediately before the administration of ketamine, but both groups also received hyoscine 0.4 mg i.m. 30–45 min before surgery. The premedication was given in a double-blind manner.

The anaesthetic technique was the same for all groups. Anaesthesia was induced with ketamine 2.2 mg kg\(^{-1}\) i.v. and the larynx and trachea were sprayed with 2 ml of lignocaine 4% before the trachea was intubated. Anaesthesia was maintained with i.v. infusions of ketamine 0.05% and suxamethonium 0.12%, adjusted separately to provide optimal operating conditions. The patients were ventilated manually with 100% oxygen using a flow rate of 6 litre min\(^{-1}\) in a semi-closed circuit. The trachea was intubated. Anaesthesia was maintained by i.v. infusions of ketamine 0.05% and suxamethonium 0.12%, adjusted separately to provide optimal operating conditions. The patients were ventilated manually with 100% oxygen using a flow rate of 6 litre min\(^{-1}\) in a semi-closed circuit. The ketamine infusion was stopped after the first fallopian tube was cut and cauterized, usually 5–10 min before the end of surgery.

The total dose of ketamine by infusion was adjusted for the patient's weight and time (mg kg\(^{-1}\) min\(^{-1}\)) to compare with the dose groups described by Little, Chang and Chucot (1972).

After the operation the patient was taken to the quietest available area in the recovery room where vital signs, the time required for the patient to become oriented and any adverse emergence reactions were recorded. Return of consciousness was determined on the basis of regained orientation to name, space and time by questioning the patient at 15-min intervals. Subsequently the patients were interviewed by one of the staff anaesthetists within 12 h following administration of anaesthesia.

Various measures have been used to compare the four groups. Some of these, such as the patient's age and weight and the duration of anaesthesia, have been used to assess the effects of simple random allocation to premedication groups. Other observations, such as restlessness, unpleasant dreams and visual disturbances, represent emergence phenomena of which the association with treatment is of interest.

Data have been compared statistically using the \(\chi^2\) test, the Fisher \(F\) test, and the Kruskel Wallis \(H\) test (Sokal and Rohlf, 1969). The significance level for all tests was taken as 0.05.

### RESULTS

Using the Fisher \(F\) test, the differences among the four groups with respect to mean age, mean weight and the mean duration of anaesthesia can be accounted for on the basis of chance alone (table I).

Using the Kruskel Wallis \(H\) test there was no difference among the four groups for either the initial dose of ketamine (mg kg\(^{-1}\)) or the dose of ketamine by infusion corrected for weight and time (mg kg\(^{-1}\) min\(^{-1}\)) (table I).

There was a significant association between the recovery times and the two premedicant drugs. The proportions of patients in the three recovery time categories (table II) are respectively 0.33, 0.53, 0.13 for group I; 0.24, 0.55, 0.21 for group II; 0.55, 0.47, 0.00 for group III; and 0.54, 0.35, 0.11 for group IV.

Further statistical examination provided evidence for association between the premedicant agents and time to orientation, whereas there was no association between method of administration and time to orientation.

### Table I. Patients and drug doses

<table>
<thead>
<tr>
<th>Group</th>
<th>Age (yr)</th>
<th>Wt. (kg)</th>
<th>Duration of anaesthesia (min)</th>
<th>Ketamine i.v. drip</th>
<th>Ketamine i.v. drip</th>
<th>Suxamethonium i.v. drip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(mg)</td>
<td>(mg kg(^{-1}) min(^{-1}))</td>
<td>(mg)</td>
</tr>
<tr>
<td>I—Pentobarbitone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 mg kg(^{-1}) i.v.</td>
<td>Mean</td>
<td>27.00</td>
<td>61.30</td>
<td>42.00</td>
<td>134.80</td>
<td>150.03</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>± 3.10</td>
<td>± 15.31</td>
<td>± 12.49</td>
<td>15.31</td>
<td>65.27</td>
</tr>
<tr>
<td>II—Pentobarbitone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 mg kg(^{-1}) i.m.</td>
<td>Mean</td>
<td>28.00</td>
<td>59.61</td>
<td>40.78</td>
<td>131.13</td>
<td>141.26</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>± 4.10</td>
<td>± 19.78</td>
<td>± 11.94</td>
<td>19.78</td>
<td>53.80</td>
</tr>
<tr>
<td>III—Droperidol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75 mg kg(^{-1}) i.v.</td>
<td>Mean</td>
<td>27.83</td>
<td>56.28</td>
<td>42.33</td>
<td>123.72</td>
<td>145.86</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>± 3.87</td>
<td>± 11.09</td>
<td>± 17.05</td>
<td>11.19</td>
<td>44.61</td>
</tr>
<tr>
<td>IV—Droperidol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75 mg kg(^{-1}) i.m.</td>
<td>Mean</td>
<td>28.86</td>
<td>55.76</td>
<td>43.78</td>
<td>127.73</td>
<td>132.05</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>± 4.36</td>
<td>± 13.88</td>
<td>± 11.69</td>
<td>13.88</td>
<td>46.14</td>
</tr>
</tbody>
</table>
KETAMINE FOR LAPAROSCOPIC STERILIZATION

There is no association between the four premedication groups and the presence or absence of any of the variables listed in Table III. However, after pentobarbitone i.v., no patients experienced unpleasant dreams, whereas 20% of patients in the i.v. droperidol group had such experience. The test for association between the two premedication groups and unpleasant dreams for i.v. administration was \( \chi^2 = 4.62 \) (d.f. = 1, \( P<0.05 \)). A similar comparison for i.m. administration produced \( \chi^2 = 0.09 \) (d.f. = 1, \( P>0.05 \)). No association between method of administration and unpleasant dreams within each of the premedication drugs was found (the \( \chi^2 \)s are 2.5 and 0.001 for pentobarbitone and droperidol respectively (table III*)).

There was no association between future acceptance and unpleasant dreams for each of the four groups, whereas such association existed for the pooled data (table IV).

During the initial 15 min after the administration of ketamine, of the 68 patients given pentobarbitone, nine had heart rates in excess of 120 beat min\(^{-1}\), whereas none of the 67 patients given droperidol exhibited these values (\( \chi^2 = 9.50 \), d.f. = 1, \( P<0.05 \)). During the second 15 min following the administration of ketamine there was no difference in heart rate between the groups (table V).

During the first 15 min following the administration of ketamine there was a significant difference in the systolic arterial pressure between the i.v. and i.m. groups receiving pentobarbitone (\( \chi^2 = 9.41 \), d.f. = 1, \( P<0.05 \)). Of the 38 patients in group II, 23 had changes in systolic arterial pressure of more than 20 mm Hg; whereas in group I, seven of 30 patients had changes of more than 20 mm Hg (\( \chi^2 = 9.40 \), d.f. = 1, \( P<0.05 \)). In group III, 11 of 30 patients had changes greater than 20 mm Hg and in group IV, 14 of 37 patients had such changes (\( \chi^2 = 0.01 \), d.f. = 1, \( P>0.05 \)). The difference between the groups tended to persist during the second 15-min period following administration of ketamine.

A sinus tachycardia persisting for longer than 30 min or a delayed tachycardia was present in 12 patients (9%). Sinus bradycardia was present in 17 (13%).

### Table II. Recovery times to orientation in patients given premedicant drugs by different routes

<table>
<thead>
<tr>
<th>Group</th>
<th>Recovery time to orientation (h)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1–2</td>
</tr>
<tr>
<td>I—Pentobarbitone i.v.</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>II—Pentobarbitone i.m.</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>III—Droperidol i.v.</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>IV—Droperidol i.m.</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

Association between recovery time and treatment groups: \( \chi^2 = 14.18 \); d.f. = 6; \( P<0.05 \).
Association between type of medication and time to recovery: \( \chi^2 = 10.81 \); d.f. = 2; \( P<0.05 \).
Association between method of administration and time to recovery: \( \chi^2 = 2.78 \); d.f. = 2; \( P>0.05 \).
Interaction between method of administration, type of medication and time to recovery: \( \chi^2 = 0.59 \); d.f. = 2; \( P>0.05 \).

### Table III. Adverse clinical reactions occurring after operation in four groups of patients

<table>
<thead>
<tr>
<th>Group</th>
<th>Delirium</th>
<th>Restlessness</th>
<th>Hallucinations or illusions, or both</th>
<th>Anxiety</th>
<th>Visual disturbances</th>
<th>Recalled dream-like experiences</th>
<th>Unpleasant dream-like experiences</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>I—Pentobarbitone i.v.</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>17</td>
<td>8</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>II—Pentobarbitone i.m.</td>
<td>2</td>
<td>11</td>
<td>6</td>
<td>4</td>
<td>23</td>
<td>15</td>
<td>5</td>
<td>38</td>
</tr>
<tr>
<td>III—Droperidol i.v.</td>
<td>1</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>IV—Droperidol i.m.</td>
<td>1</td>
<td>11</td>
<td>3</td>
<td>5</td>
<td>18</td>
<td>14</td>
<td>5</td>
<td>37</td>
</tr>
<tr>
<td>Frequency</td>
<td>5</td>
<td>32</td>
<td>15</td>
<td>12</td>
<td>69</td>
<td>46</td>
<td>16</td>
<td>135</td>
</tr>
<tr>
<td>Incidence (%)</td>
<td>3.7</td>
<td>23.32</td>
<td>11.11</td>
<td>8.88</td>
<td>51.11</td>
<td>34.7</td>
<td>11.8</td>
<td>100</td>
</tr>
</tbody>
</table>

* The information for this detailed analysis is derived from table III; for example, the association between unpleasant dreams and drugs for i.v. administration is based on a 2 × 2 table whose rows are respectively 0, 30 and 6, 24.

† Tests of association between premedication groups and the various responses were as follows (d.f. = 3): Delirium: \( \chi^2 = 0.39 \); restlessness: \( \chi^2 = 3.33 \); hallucinations or illusions, or both: \( \chi^2 = 1.92 \); anxiety: \( \chi^2 = 5.08 \); visual disturbance: \( \chi^2 = 4.31 \); recalled dream-like experience: \( \chi^2 = 1.68 \); unpleasant dream-like experience: \( \chi^2 = 6.09 \). None of the \( \chi^2 \) values is significant at the 0.05 level.
Despite the fact that the dose of ketamine used in our study was small compared with the "high dosage group" of Little, Chang and Chucot (1972), we have found a relatively high frequency of adverse reactions. The failure of premedication to control these reactions may be related to the relatively short duration of surgery (Bovill, Clarke and Dundee, 1971; Dundee, Bovill and Clarke, 1971; Erbguth, Reiman and Klein, 1972) (mean duration 42.3 min), the special affinity of ketamine for cerebral tissue which has been demonstrated in rats (Cohen, Chan and Way, 1973) and the sex and age of the patients (Knox, Bovill and Clarke, 1970; Galloon, 1971; Becsey, Malamed and Radnay, 1972). The use of hyoscine also may have increased the frequency of adverse clinical reactions. Hyoscine may produce restlessness, hallucinations and delirium (Innes and Nickerson, 1975). This drug was chosen as an anticholinergic agent in preference to atropine because of its greater sedative, antialogue and anti-dreaming properties (Domino and Corssen, 1967; Innes and Nickerson, 1975). Hyoscine, in combination with a tranquilizer, has been shown to decrease the frequency of nausea, vomiting and unpleasant dream-like activity after ketamine administration (Galloon, 1971), but the use of atropine as premedication for ketamine anaesthesia has been shown to increase the frequency of unpleasant dreams (Bovill, Clarke and Dundee, 1971; Morgan, Loh and Single, 1971). Morgan, Loh and Single (1971) have reported that premedication with hyoscine and droperidol was associated with the lowest frequency of emergency phenomena.

### TABLE V. Heart rate and changes in systolic arterial pressure

<table>
<thead>
<tr>
<th>Group</th>
<th>Time period (min)</th>
<th>0-15</th>
<th>16-30</th>
<th>0-15</th>
<th>16-30</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Heart rate</td>
<td></td>
<td></td>
<td>Changes in systolic pressure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heart rate</td>
<td></td>
<td></td>
<td>Changes in systolic pressure</td>
<td></td>
</tr>
<tr>
<td>I—Pentobarbitone i.v.</td>
<td>r&lt;100</td>
<td>18</td>
<td>10</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>r&gt;120</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>II—Pentobarbitone i.m.</td>
<td>(n = 38)</td>
<td>20</td>
<td>11</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>r&lt;100</td>
<td>11</td>
<td>7</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>r&gt;120</td>
<td>9</td>
<td>1</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>III—Droperidol i.v.</td>
<td>(n = 30)</td>
<td>26</td>
<td>4</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>r&lt;100</td>
<td>4</td>
<td>0</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>r&gt;120</td>
<td>28</td>
<td>2</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>IV—Droperidol i.m.</td>
<td>(n = 37)</td>
<td>29</td>
<td>8</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>r&lt;100</td>
<td>8</td>
<td>0</td>
<td>14</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>r&gt;120</td>
<td>34</td>
<td>2</td>
<td>19</td>
<td>99</td>
</tr>
</tbody>
</table>

*P < 0.05.
The dose of ketamine used in this study may delay recovery to full orientation for up to 4 h, even when administered without premedication (Kreuscher and Bornemann, 1970). Our results confirm previous reports that droperidol reduces the time to recovery to full orientation after ketamine anaesthesia (Becsey, Malamed and Radnay, 1972).

The high frequency of visual disturbances (51%), irrespective of the type or route of premedication, confirms the known effects of ketamine in disturbing visual function (Knox, Bovill and Clarke, 1970; Galloon, 1971; Erbguth, Reiman and Klein, 1972).

In our series, the frequency of unpleasant dream-like activity (12%) is similar to those of previous reports (Bovill, Clarke and Dundee, 1971; Galloon, 1971; Morgan, Loh and Single, 1971; Becsey, Malamed and Radnay, 1972). However, the significant absence of unpleasant dreams in group I (pentobarbitone i.v.) is important as a result of the inverse relationship existing between unpleasant dreams and acceptance of ketamine by patients (Morgan, Loh and Single, 1971; Harvey and Hustead, 1972; Krestow, 1974).

We have confirmed the findings of others that droperidol, while apparently reducing the frequency of some of the adverse clinical reactions to ketamine, actually increases the occurrence of unpleasant, vivid dreams (Knox, Bovill and Clarke, 1970; Bovill, Clarke and Dundee, 1971; Erbguth, Reiman and Klein, 1972).

The mechanisms for the initial increase in heart rate and systolic arterial pressure induced by ketamine are still obscure, but experimental and clinical studies suggest that there may be a central stimulation producing an overall sympathetic response with a concomitant vagal inhibition (Dowdy and Kaya, 1968; Traber, Wilson and Priano, 1970; Tweed, Minuck and Mymin, 1972; Stanley, 1973).

Many attempts have been made to control the haemodynamic effects of ketamine with the β-adrenergic blocking properties of droperidol (Bovill, Clarke and Dundee, 1971; Becsey, Malamed and Radnay, 1972; O’Neill, Minnie and Zadigan, 1972; Wilson, Thomas and Ashy, 1974). In our study droperidol failed to prevent or reduce the initial increase in systolic arterial pressure. This is contrary to the results of previous studies (Becsey, Malamed and Radnay, 1972; Bovill and Dundee, 1972), but it supports the hypothesis that several mechanisms are involved in the cardiovascular responses to ketamine (Dowdy and Kaya, 1968; Traber, Wilson and Priano, 1970; Tweed, Minuck and Mymin, 1972).

Pentobarbitone protected against the increase in arterial pressure to a greater extent than droperidol, suggesting antagonism of the effect of ketamine on the central nervous system (Dawson, Michenfelder and Theye, 1971; Winters, Ferrer-Allado and Guzman-Flores, 1972; Yung Fong Sung and Holtzman, 1973), in addition to the effect of the barbiturates in reducing peripheral vascular resistance.

It has been suggested that the tachycardia produced by ketamine results from a vagal inhibition rather than a chronotropic stimulation (Traber, Wilson and Priano, 1970). Our finding that droperidol reduces the tachycardia produced by ketamine suggests that there are other mechanisms involved (Dowdy and Kaya, 1968; Traber, Wilson and Priano, 1970; Tweed, Minuck and Mymin, 1972; Stanley, 1973). Patients receiving pentobarbitone exhibited a greater tachycardia than those receiving droperidol (table V).

This may conceivably be related to the effects of barbiturates in decreasing baroreceptor sensitivity (Bristow, Prys-Roberts and Fisher, 1969), together with direct effects of ketamine. This may account for our findings that 10 patients in group II (pentobarbitone i.m.) exhibited heart rates greater than 120 beat min⁻¹.

According to Vatner and Braunwald (1975), during anaesthesia there is a balance between increased vagal tone and reduced sympathetic activity. When this equilibrium is disturbed, as occurs when there is imbalance between the depth of anaesthesia and the degree of surgical stimulation, reflex bradycardia or tachycardia may occur. Ketamine produces surgical anaesthesia by mechanisms different from the traditional agents (Winters, Ferrer-Allado and Guzman-Flores, 1972; Ferrer-Allado, Brechner and Dymond, 1973; Yung Fong Sung and Holtzman, 1973). Acting as a central stimulant, ketamine produces a sympathetic response with a concomitant vagal inhibition (Traber, Wilson and Priano, 1970) resulting in an initial tachycardia which may mask a tachycardia of reflex origin. Persistent or delayed tachycardia may be interpreted as a reflex response to visceral stimulation. In our study, 13 of 135 patients (10%) exhibited this type of response. Ketamine also inhibits the vagus, and sinus bradycardia following its administration may be a result of imbalance between the depth of anaesthesia and the degree of surgical stimulation.

In our study the total dose of ketamine for each group was lower than the large dose recommended by a previous report in which ketamine was used as the
sole agent to block visceral pain during intra-abdominal surgical procedures (Langher and Neuhaus, 1973). However, only 17 patients (13%) developed sinus bradycardia. This was corrected readily with atropine 0.4 mg i.v., without increasing the dose of ketamine. This suggests that, in the dose used in our study, ketamine protects adequately against reflexes of visceral origin and may be used as the sole anaesthetic agent for intra-abdominal procedures, if atropine is administered when sinus bradycardia occurs.

REFERENCES

KETAMINE FOR LAPAROSCOPIC STERILIZATION

LA KETAMINE: SEUL AGENT ANESTHESIANT POUR LA STERILISATION PAR LAPAROSCOPIE

Effets de la prémedication sur la fréquence de réactions adverses cliniques

RESUME
On a évalué, au cours d’une étude à double inconnue, effectuée sur 135 femmes stérilisées par laparoscopie, la valeur de la ketamine en tant que seul agent anesthésiant. Les malades ont été réparties au hasard entre les quatre groupes, suivant le type (pentobarbitone ou droperidol) ou le mode d’administration (intraveineuse ou intramusculaire) de la prémédication. On a, de plus, administré à toutes les malades une injection intramusculaire d’hyoscine. Ni le pentobarbitone ni le droperidol n’ont empêché les réactions adverses de l’émersion et la fréquence d’une réaction semblable à un rêve. Quoi qu’il en soit, les malades auxquelles on avait administré le pentobarbitone par voie intraveineuse ne se sont pas souvenus d’avoir eu des rêves désagréables. On a constaté que les malades auxquelles on avait administré le droperidol par voie intraveineuse ont eu le temps de récupération le plus court après anesthésie par la ketamine. L’incidence de troubles visuels a été élevée dans tous les groupes. Le droperidol a assuré leur protection contre l’augmentation initiale de la fréquence cardiaque, alors que le pentobarbitone les a protégées contre l’augmentation de la pression systolique artérielle associée à la kéta mine.

KETAMINE ALS EINZIGES BETÄUBUNGSMITTEL FÜR LAPAROSKOPISCHE STERILISATION

Die Wirkungen der Premedikation auf die Häufigkeit von ungünstigen klinischen Einwirkungen

ZUSAMMENFASSUNG

KETAMINA COMO UNICO AGENTE ANESTESICO PARA ESTERILIZACION LAPAROSCOPICA

Los efectos ejercidos por la premedicación sobre la frecuencia de reacciones clínicas adversas

SUMARIO
Se estudió el empleo de ketamina como único agente anestésico en una prueba de doble anonimato comprendiendo 135 pacientes femeninas, sometidas a esterilización laparoscópica. Las pacientes fueron asignadas al azar a cuatro grupos según el tipo (pentobarbitona o droperidol) y ruta (intravenosa o intramuscular) de premedicación. Además, todos los pacientes recibieron hioscina i.m. Si pentobarbitona o droperidol evitaron la ocurrencia de reacciones adversas y la frecuencia de actividad en sueños. Sin embargo, los pacientes que recibieron pentobarbitona intravenosa no recordaron haber experimentado sueños desagradables. Los pacientes que recibieron droperidol intravenosa experimentaron el tiempo de recuperación más corto después de anestesia por ketamina. En todos los grupos se presentó un alto grado de trastorno visual. El droperidol dio defensa contra el aumento inicial de rapidez del corazón, y la pentobarbitona contra el aumento de la presion arterial sistólica asociada con ketamina.
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