WIRKUNGEN AUF DAS HERZ BEI ANWENDUNG VON ADRENALIN UND FELYPRESSIN ZUR VASOKONSTRIKTION IN DER LOKALANAESTHESIE BEI EINGRIFFEN IM MUND UNTER DIAZEPAM-SEDIERUNG

ZUSAMMENFASSUNG

Kurzdauernde, steile Herzfrequenzanstiege bis zu 40 Schlägen pro Minute wurden bei 19 von 27 Zahnpatienten beobachtet, die 2 perzent Lignocain mit Adrenalin (1:80 000) als Lokalanästhetikum erhielten. Nach 3 prozent Prilocain mit Felypressin (0,03 l.u./ml) wurden keine Herzfrequenzanstiege beobachtet. Die Kombination mit Felypressin scheint daher günstiger zu sein für Patienten mit kardiovaskulären Erkrankungen.

CORRESPONDENCE

CARDIOVASCULAR EFFECTS OF CHLORMETHIAZOLE

Sir,—We must reluctantly disagree with the interpretation Dr. Wilson and his colleagues (Brit. J. Anaesth. (1969) 41, 840) make of their experimental findings with chlormethiazole. In supine conscious subjects the infusion of this drug was followed by a 48.7 per cent increase in heart rate with no significant change in cardiac output or mean arterial pressure, indicating a fall in stroke volume. Central venous pressure showed a tendency to rise during the first few minutes of the infusion but returned to the control levels during the course of the infusion, a point the authors do not comment on. In their discussion they say that the mechanism of these changes is obscure, “but in quality it appears similar to that produced by atropine, i.e. an increase in heart rate without an increase in cardiac output”.

The intravenous injection of atropine is characterized by an increase in cardiac output roughly proportional to the increase in heart rate. The rise in output appears to depend on an adequate right atrial filling pressure. Weissler et al. (1957) observed marked falls in stroke volume in conscious subjects given atropine when tilted 60 degrees head-up. Berry and his co-workers (1959) studied supine subjects in whom they observed falls of central venous pressure and stroke volume after the injection of atropine, accompanied by rises in cardiac output. When they increased plasma volume by infusing albumen into their subjects there was no longer any fall in stroke volume after atropine.

We do not consider the response to chlormethiazole to be atropine-like because the cardiac output failed to increase, and because the venous pressure rose. The latter effect is partly accounted for by the rapid infusion of fluid (125–250 ml altogether).

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REFERENCES


Sir,—We are grateful for the opportunity of replying to the comments of Drs. Farman and Kennedy.

We accept that we rather lightly passed over the central venous pressure changes, but they did not appear to be significant (mean average rise from control levels was +1.21 mm Hg). In addition, if one makes a comparison of the calculated stroke volume changes with the measured central venous pressure table it is obvious that there is little correlation between the two; certainly not a straight-line relationship.

<table>
<thead>
<tr>
<th>Case</th>
<th>Central venous pressure change (mm Hg)</th>
<th>Stroke volume change (calculated) (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+2.6</td>
<td>-24.4</td>
</tr>
<tr>
<td>2</td>
<td>+0.56</td>
<td>-0.84</td>
</tr>
<tr>
<td>3</td>
<td>+2.6</td>
<td>-15.0</td>
</tr>
<tr>
<td>4</td>
<td>-4.8</td>
<td>-20.0</td>
</tr>
<tr>
<td>5</td>
<td>+5.1</td>
<td>-33.0</td>
</tr>
</tbody>
</table>

Further, as regards cardiac output, our series did show an increase of 9.7 per cent (mean average per cent increase from resting state).

When one looks closely at the figures for the c.v.p. it is, as Drs. Farman and Kennedy state, obvious that this small increase occurred during the period of rapid infusion of 125/250 ml of the solution; the c.v.p. after this initial rise fell rapidly to its original figure, or below. We feel that this small and unsustained rise in central venous pressure is entirely related to the speed and volume of the solution infused.

It is significant that in the clinical areas of the operating theatre and the intensive care unit, heart rate changes, such as we have found in the experimental field, do not occur; in all probability this is due to the much smaller and slower infusion of the solution in these situations.

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