Is fasting necessary before prilocaine Bier's block?

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Abstract
Objective—To determine whether fasting is necessary before intravenous regional anaesthesia (Bier’s block).
Methods—A questionnaire study was carried out to assess accident and emergency (A&E) departments’ policies and opinions in relation to Bier’s block anaesthesia. Questionnaires were sent to 282 A&E consultants, of whom 216 replied (77% response rate).
Results—About 5000 Bier’s block procedures are carried out each year in the United Kingdom. Intravenous regional anaesthesia appears safe. Over one third of units did not fast their patients. The complication rate was similar in fasted and unfasted groups.
Conclusions—Starvation of the patient before intravenous regional anaesthesia is not necessary and should be abandoned.

Key terms: Bier’s block; fasting; prilocaine; complication rate

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Figure 1 The questionnaire

DO YOU HAVE A FASTING POLICY
IF YES IS IT
IS IT SPECIFIC TO A & E
IS IT AGREED WITH ANAESTHETISTS DEPT.
WHAT IS YOUR MINIMUM AGE LIMIT
WHAT ARE YOUR CUP TIME LIMITS
HAVE YOU EVER RECORDED ANY COMPLICATIONS WITH PRIOCAINE BIER'S BLOCK?
SYSTEMIC
CARDIOVASCULAR
RESPIRATORY
NEUROLOGICAL
ALLERGIC
OTHERS (PLEASE SPECIFY)
LOCAL (RELATED TO BLOCK ITSELF)
TRAUMATIC
VASCULAR
NEUROLOGICAL
ALLERGIC
OTHERS (PLEASE SPECIFY)
EQUIPMENT FAILURE
BIERS BLOCK FAILURE
(MINOR INJURIES, OPHTHALMOLOGICAL EMERGENCIES, OR PEDIATRICS). A further four
Table 1  Selected responses from the questionnaire

<table>
<thead>
<tr>
<th></th>
<th>A&amp;E staff only (n = 42)</th>
<th>Anaesthetic staff only (n = 54)</th>
<th>A&amp;E, anaesthetic staff jointly (n = 25)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a fasting policy</td>
<td>26% (n = 11)</td>
<td>85% (n = 46)</td>
<td>56% (n = 14)</td>
</tr>
<tr>
<td>Ever had complications</td>
<td>14% (n = 6)</td>
<td>22% (n = 12)</td>
<td>20% (n = 5)</td>
</tr>
<tr>
<td>Added IV sedation/analgesia</td>
<td>12% (n = 5)</td>
<td>23% (n = 12)</td>
<td>16% (n = 4)</td>
</tr>
</tbody>
</table>

Table 2  Complications reported with Bier’s block

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Complication</td>
<td>Frequency</td>
</tr>
<tr>
<td>Transient hypotension</td>
<td>3</td>
</tr>
<tr>
<td>“Fits”</td>
<td>1</td>
</tr>
<tr>
<td>Transient twitching</td>
<td>1</td>
</tr>
<tr>
<td>Vasovagal (emotional)</td>
<td>1</td>
</tr>
<tr>
<td>Radial nerve neuropraxia</td>
<td>3</td>
</tr>
<tr>
<td>Ulnar nerve neuropraxia</td>
<td>1</td>
</tr>
<tr>
<td>Cuff intolerance</td>
<td>4</td>
</tr>
<tr>
<td>Local swelling or bruising</td>
<td>7</td>
</tr>
</tbody>
</table>

Discussion

Bier’s block is frequently employed in A&E departments. It provides good analgesia and has the advantage of speedy progress and early discharge unless the patient is fasted. Haematoma block has been gaining popularity yet produces less analgesia and a less satisfactory anatomical result after fracture manipulation. Surprisingly, patients are often not fasted for haematoma blocks yet potentially toxic systemic levels of local anaesthetic have been shown to occur during fracture manipulation under haematoma block.

Prilocaine Bier’s block is safe. While minor systemic leaks of prilocaine may occur and our study recorded 18 reported cuff leaks, no prilocaine associated deaths have ever been reported to the Committee on Safety of Medicines.

Some users advocate a strict starvation policy for Bier’s block. Others regard it as unnecessary and some question the need. Reasons cited for imposing starvation include possible pulmonary aspiration. Our study confirmed that prilocaine Bier’s block is safe
and showed that non-fasting does not incur any increased risk of complications. Those complications which have been reported did not include any airway risk.

We found that A&E staff achieve similar analgesia yet are less likely to fast their patients than their anaesthetist colleagues. A&E staff are also less likely to use supplemental sedation or analgesia and are less likely to experience complications. This may reflect the fact that the IVRA is usually performed by more senior A&E staff, who are more familiar with the procedure than the anaesthetic staff, who are often senior house officers new to the technique.

CONCLUSION

Prilocaine intravenous regional anaesthesia should be conducted by doctors experienced in the technique and in the recognition, prevention, and treatment of systemic local anaesthetic toxicity.

We believe that Bier’s block is a safe procedure, to be carried out by experienced staff, without previous starvation of the patient.

We would like to thank all those who replied to our questionnaire and the audit department of Kent and Canterbury Hospital for their assistance.


