moderate pain and only one woman reported mild pain in NRS (3/10). At these doses intranasal fentanyl was well tolerated, some fatigue was reported by five and mild sedation by two subjects during fentanyl administration. In conclusion, intranasal fentanyl up to a total dose of 250 µg may be a feasible option for maternal pain relief in situations where regional blocks are not readily available. However, a larger study is warranted to ensure maternal and fetal safety.

Declaration of interest
None declared.

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References

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Neonatal safety of maternal fentanyl during labour

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Editor—Opioids are common in early stages of labour as they are highly effective for visceral and somatic pain. The main concern of opioids in labour analgesia is the neonate exposure.1 We have evaluated the early neurological outcome of the new-born infants of 15 healthy parturient, aged 21–40 yr, who were given intranasal fentanyl 100–250 µg (Instanyl® nasal spray 50 µg dose−1,
Fentanyl in plasma

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fentanyl group n=15</th>
<th>Control group n=34</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal vein at the time of birth (ng ml⁻¹)</td>
<td>0.13 [BLQ - 0.52]</td>
<td>NA</td>
</tr>
<tr>
<td>Umbilical artery at the time of birth (ng ml⁻¹)</td>
<td>0.06 [BLQ - 0.11]</td>
<td>NA</td>
</tr>
<tr>
<td>Umbilical vein at the time of birth (ng ml⁻¹)</td>
<td>0.05 [BLQ - 0.17]</td>
<td>NA</td>
</tr>
<tr>
<td>Umbilical cord venous/maternal ratio (n=8)</td>
<td>0.44 [0.33-0.55]</td>
<td>NA</td>
</tr>
<tr>
<td>Umbilical cord arterial/maternal ratio (n=8)</td>
<td>0.47 [0.19-0.53]</td>
<td>NA</td>
</tr>
<tr>
<td>Umbilical blood acid-base status at birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ua-pH</strong></td>
<td>7.24 [7.16-7.51]</td>
<td>7.24 [7.16-7.32]</td>
</tr>
<tr>
<td><strong>Uv-pH</strong></td>
<td>7.35 [7.29-7.45]</td>
<td>7.35 [7.21-7.47]</td>
</tr>
<tr>
<td><strong>Ua-BE</strong></td>
<td>−5.1 [−10.0−8.8]</td>
<td>−4.1 [−8.8-2.3]</td>
</tr>
<tr>
<td><strong>Uv-BE</strong></td>
<td>−5.1 [−9.6-1.7]</td>
<td>−4.0 [−8.7-1.5]</td>
</tr>
</tbody>
</table>

Declarations of interest

None declared.

Funding

Funding was provided by Finnish Governmental Research Funding. This study is a part of the Kubico (Kuopio Birth Control) consortium (www.kubico.fi) for M.K., S.H. and H.K.

References

Does anaesthetic dose really not contribute to mortality?

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Editor—We read with great interest the article by Willingham and colleagues1 evaluating the association between the duration of electroencephalographic (EEG) suppression and 90-day mortality, using the retrospective cohorts from B-Unaware and BAG-RE-CALL trials. Their results show that >5 min of intraoperative EEG suppression increases the risk of 90-day mortality (OR=2.19) when adjustment was not made for confounding variables. However, after adjustment, there was no significant between-group difference. The ‘EEG suppression×low MAP’ factor was an independent predictor of mortality, while low MAP by itself was not. This leads to the conclusion that patients with intraoperative EEG suppression >5 min and MAP<55 mm Hg are at a high risk of 90 day mortality (OR=2.96).

The fact that EEG suppression in the absence of other covariates was not predictive of mortality would reinforce the idea that higher anaesthetic agent utilization per se may not be associated with higher mortality. While the interaction term ‘EEG suppression×low MAP’ does help to identify a subgroup of patients with higher risk of mortality, we wish to point out that both the factors contributing to the interaction term could result from a high dose of anaesthetic. The interpretation becomes even more complicated if one considers the fact that hypotension by itself may cause EEG suppression2 and hypotension may have resulted from a high dose of anaesthetic. This ambiguity could be resolved by using the anaesthetic dose as a covariate in the logistic regression model. If significance of the predictive model is still retained, then one may confidently rule out the association of higher anaesthetic doses with mortality.

Declaration of interest
None declared.

References

Perioperative management of diabetic patients: new controversies

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Editor—We read with interest the recent editorial Perioperative management of diabetic patients: new controversies.1 This is indeed a topic which continues to cause confusion amongst those involved in the perioperative care of these patients.

We agree with the assertion that the guidelines published by the National Health Services Diabetes in the UK2 act as a useful ‘work in progress’ to help guide our management of diabetic patients, and also with the author’s suggestion that such guidelines will need to continue evolving over time, as new treatments are developed and fresh evidence emerges.

However, we would like to raise a note of caution regarding the conclusion that all diabetic patients, with normal renal function, who are being treated with metformin should continue their medication throughout the perioperative period. Whilst the risk of developing metformin-associated lactic acidosis is indeed low for such patients in most circumstances,3,4 the specific conditions that arise in patients undergoing liver surgery (fluid restriction and impaired liver function secondary to both the pathological process and the treatment for it (i.e. resection with or without neo-adjuvant chemotherapy) make them a particularly high risk group for suffering this complication.

Our unit is a tertiary hepatobiliary centre and routinely performs over 100 liver resections each yr. In the last decade we have seen a handful of diabetic patients with metformin-associated lactic acidosis who had inadvertently continued their metformin up until the morning of surgery. One such patient,