Acceptability of auricular vs frontal bispectral index values

Editor—Bispectral index (BIS) monitoring is a useful adjunct to monitoring depth of anaesthesia and reducing the risk of awareness for high-risk groups. Its placement is traditionally over the frontotemporal region which may not be possible for certain neurosurgical procedures. The only other alternative studied so far is an occipital placement of the BIS sensor which has produced conflicting results. This also requires the shaving of the scalp over the occiput. We therefore assessed the feasibility of an auricular approach compared with the values obtained from a frontotemporal approach in patients undergoing surgery.

After ethics approval, we consented patients aged 18–70 yr undergoing laparoscopic cholecystectomy to have BIS sensors applied in both the frontotemporal and auricular regions (Fig. 1). Anaesthesia was induced with propofol and fentanyl, and maintained with either sevoflurane or desflurane. Signal quality index (SQI) and BIS values were recorded continuously. Recordings were started after verifying an SQI more than 95% and electrode impedance of <5 kΩ. The averages were calculated over every 3 min and the two data sets were then compared using the Bland and Altman random effects model analysis. A clinically acceptable level of agreement would differ by <10 BIS units.

We collected 1812 paired readings from 16 patients. The 95% limits of agreement ranged between −17.6 and +33.1. There was a 0.8% incidence of potential awareness (BIS > 60) measured by the frontotemporal approach which was not picked up by the auricular approach.

The results of this study demonstrate that the limits of agreement are too wide for the auricular approach to be used in substitution of the frontotemporal approach. Using the auricular approach not only increases the risk of not detecting awareness, but also under-estimates the depth of anaesthesia by a larger margin. This could potentially lead to the anaesthetist increasing the depth of anaesthesia unnecessarily, which is then associated with an increased risk of morbidity and mortality.

Declaration of interest
None declared.

B. Brown*
M. Edwards
S. Tay
Casuarina, Australia
*E-mail: brigid.brown@gmail.com

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Ferric carboxymaltose increases epoetin-α response and prevents iron deficiency before elective orthopaedic surgery

Editor—Interest for ‘Patient Blood Management’ is increasing because of accumulating evidence that blood transfusion may be deleterious. Correction of preoperative anaemia is the first pillar of this management and is recommended before elective orthopaedic surgery. Different strategies are used across Europe to correct anaemia, epoetin-α (EPO)