The widely held view that the obese are prone to regurgitation and that laryngoscopy is likely to be difficult has led many anaesthetists to use a classic rapid sequence (RSI) technique using only thiopentone and suxamethonium when faced with an obese patient. Both classic RSI and the use of thiopentone were found to be risk factors for awareness in NAP5. Both are rarely used by bariatric anaesthetists.

Third, if there are any delays or difficulties with the airway, supplemental doses of propofol may be given. Some anaesthetists routinely administer supplemental propofol before laryngoscopy.

Fourth, there are proponents of the use of target controlled infusion (TCI) techniques in the obese. TCI has the advantage of avoiding ‘the gap’ altogether. However, we would advise caution, as the complexities of drug dosing in the obese become even more relevant. TCI in the obese patient should only be used by those with a detailed understanding and experience in the technique and, in agreement with the NAP5 report, should ideally incorporate some form of depth of anaesthesia monitoring.

In summary, we very much welcome the NAP 5 report but would urge caution in following any recommendation to dose obese patients to total body weight. We are very concerned that significant overdosing of obese patients during induction, to try to avoid the small but important risk of awareness might engender more immediate patient safety problems. As an alternative we would encourage the use of initial dosing to lean body weight, with adoption of some of the techniques described.

We completely agree that further research is required.

Declaration of interest
None declared.

References

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Appropriate dosing of lipid-soluble anaesthetics in obese patients: NAP5 recommendations

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Editor—We welcome the comments made by the SOBA committee on the NAP5 Report.1–3 They make specific points in relation to site of anaesthetic induction, the need for prompt tracheal intubation, the avoidance of thiopentone (especially in the rapid sequence setting), and the need for better training and research in total i.v. anaesthesia techniques. We broadly agree, and their comments mirror recommendations we made in the NAP5 Report.

They draw attention to our speculation in paragraph 8.51, related to dosing anaesthetic agents by total, rather than lean, body weight (but they concede that what we said was correct). We think they will agree with our Recommendation 8.6: ‘Obesity should be considered a risk factor for AAGA [accidental awareness during general anaesthesia] at induction, especially if RSI [rapid sequence induction] is planned. Careful dosing is required to ensure adequate but not excessive dosing.’

Nevertheless, we defend our choice of wording. Although cardiovascular instability is a potential risk when dosing the obese patient to total body weight during induction, the evidence that this genuinely occurs is difficult to find (and the SOBA committee offer no references). Indeed, the data of Lam and colleagues5 suggest, reassuringly, that cardiovascular instability does not occur when dosing to total body weight in the obese.

Our speculation was underlined by the following reasoning. General anaesthetics act on specific target receptors in the brain,5 distal to the blood–brain barrier and hence parallel to (or even possibly distal to) any fat compartments. Thus, highly lipid soluble anaesthetic must first equilibrate with the fat compartment to attain the threshold ‘effect site’ concentration near the relevant receptors. Logically, dosing by total body weight (which takes into account the fat mass) will better ensure this threshold concentration is attained. Using an algorithm that ‘ignores’ the size of the fat compartment (i.e. dosing to lean body weight) makes it less likely that the threshold concentration is reached (because drug will be ‘lost’ in the fat, before reaching the distal brain receptors).

Anaesthetics also act on cardiovascular receptors, which lie proximal to any fat compartments (i.e. an anaesthetic injected i.v. acts immediately on receptors in the heart and blood vessels, before reaching the capillary bed or fat compartments). If cardiovascular instability is to be avoided, it is logical to dose by lean body weight. Note that the reasoning above applies only to highly lipid-soluble drugs. For lipid-insoluble agents (such as neuromuscular blocking drugs or some analgesics), the same logic dictates that dosing should be to lean body weight (because dissolution in the fat compartment is less relevant).

Trying to resolve this dilemma by titrating anaesthetic dose to clinical effect will be only partly effective. It is now becoming clearer that there are distinct grades of unconsciousness,6,7 and adequate anaesthesia is ultimately a balance between an arousing stimulus and drug-induced conscious depression. Loss of response to verbal or mild tactile stimulation after i.v. induction
does not guarantee adequate anaesthesia for surgery. Hence, the large number of reports NAPS found where obese patients reported ‘falling asleep’ only to wake up during airway manipulation, positioning, or at the start of surgery.1–3

There is therefore a dilemma. Dosing general anaesthetics to lean body weight will better ensure cardiovascular stability but increase the risk of inadequate anaesthesia. Dosing to total body weight will better ensure adequate anaesthesia but increase the risk of cardiovascular instability. Which method is advisable in practice cannot be determined by logic or by expert guidance, but must be settled by experiment; hence the careful wording of our paragraph 8.51. The answer to the question remains open; the results we obtained do indeed raise the possibility (i.e. a hypothesis) that in the obese patient, dosing to total body weight for some drugs (e.g. lipid-soluble general anaesthetics) may turn out to be the most appropriate advice.

Declaration of interest
J.J.P. sits on The Association of Anaesthetists of Great Britain and Ireland Working Party ‘Guidelines for anaesthesia in the obese’. T.M.C. is an Associate Editor of the BJA.

Open visiting policies in Intensive Care Units may not affect consent to organ donation

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Open Intensive Care Unit’s (ICU’s) visiting policies have been introduced since 19844 contributing to the humanization of the care of patients and families.5 6 The expected effects of open ICU policies include increased physical contact between relatives and patients and improved communication with the ICU staff. There is still a lack of strong evidence of the positive effects of open ICUs on the overall prognosis of patients, but it is believed that open ICUs policies, and family presence during cardiopulmonary resuscitation, could improve the perception of both patients and relatives about the quality of ICU stay, which in turn could affect positively the consent to organ donation (OD). On this basis, we assumed that the liberalization of visiting policies could reduce the opposition rates to OD from the relatives of brain dead patients (BDPs).

After approval from the Ethics Committee, we conducted a descriptive study to determine the status of implementation of open visiting policies in the ICUs of the Tuscany Region, where 3,800,000 people live. A questionnaire was developed by a focus group of five researchers working in ICUs. The retrospective phase of the study was conducted through the registry data of the Regional Transplant Centre, related to procurement activities from 2004 to 2013, to determine the number of OD oppositions from the families of BDPs. All data were analysed in anonymous fashion.

We sent 44 questionnaires by email, and 21 were returned (48%). 15 ICUs (71.4%) stated that they had open visiting policies. 12 (86%) adults ICUs were open, while only one of the two pediatric ICUs and 2 (40%) mixed patients ICUs have adopted open visiting policies (P=0.118). 50% of open ICUs implemented their liberalized visiting policies from 2011 to 2013. The mean visiting time of relatives between open ICUs and not open ICUs was significantly different (mean (SD) 10.9 (6.5) h and 4 (4) h respectively; t-test 2.370, P=0.029).

We retrieved data on 877 BDPs. We did not find any significant difference between the weighted average percentage rates of OD oppositions from the current and the previous ‘not open’ status ICUs and the open ICUs (25.3% and 27.6% respectively; χ² test 0.2310, P=0.6308), from the actual 6 ‘not open’ ICUs and the 9 open ICUs (27.6% and 23.3%, respectively; χ² test 0.6580, P=0.4173), and from university hospitals and non-university hospitals’ open ICUs (26% and 34%, respectively; χ² test 1.527, P=0.217).

At the present we cannot show any association between open visiting policies in ICU and the relatives’ oppositions to OD. Therefore, despite of our belief in the ethical force of opening ICUs, these results suggest that there is still not a clear awareness about ‘how’ we’re opening our organizations to the relatives.

References

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