Timely safe airway management in critically ill patients

Editor—We thank Jayaram and Manickam for their e-letter in the BJA online, and also a letter in the Bulletin1 in response to our article,2 and note that they identify several important issues relating to airway management in intensive care unit (ICU).

We agree that airway interventions in critically ill patients are associated with an increased rate of difficulty and complications.3 4 Our survey supports the NAP4 findings that preparation for management of potentially difficult airway in ICUs is often incomplete, which risks patient harm. Jayaram and Manickam recommend slowing down the process of rapid sequence induction (RSI). We take a slightly different approach in that we prefer to use a structured plan to enable prompt safe intubation, including RSI when indicated. To encourage adequate preparation for airway interventions in remote locations, both NAP4 and a recent article by Bowles and colleagues4 highlighted the importance of a pre-intubation checklist and both described the one developed by the senior ICU trainees of our region: the RTIC pre-intubation checklist. In our hospital, this checklist has been rapidly adopted and is now, taught and routinely used for airway interventions in ICU and the Emergency Department. The checklist focuses attention on the preparation of the patient, the skills and equipment available, and explicit planning for failed primary interventions. The use of the RTIC pre-intubation checklist is augmented by early identification of patients with ‘at risk airways’ (another issue cited in NAP4) and the creation, documentation, and communication of a specific plan for airway interventions. Our airway trolley is also designed and stocked to the same standard as in theatres. All these components are part of institutional preparedness and encourage clinicians in their individual preparedness. Following these principles enables airway management in a pre-formulated, structured, and prompt manner. The checklist takes approximately the same time to complete as does thorough pre-oxygenation and the two processes run concurrently. When an immediate airway intervention is required, the checklist may take too long and we have therefore recently introduced an adapted version of the HEMs RSI rapid intubation checklist: the RTIC and modified HEMs checklists are on either side of a laminated sheet attached to the airway trolley. We believe that these pre-intervention checks are likely to assist in the unhurried, efficient, and safer securing of an airway.

Regarding the RSI technique itself, the technique, though still controversial, is a mainstay of emergency airway management. We should not forget that NAP4 identified pulmonary aspiration of gastric contents to the single most common cause of airway deaths during anaesthesia, accounting for 50% of all such deaths. Numerous deaths occurred when techniques were inappropriate for the aspiration risk, including failure to use RSI when indicated. Controlled RSI (CRSI) is a technique largely confined to paediatric practice, while delayed RSI (DRSI) is specific to emergency medicine, particularly out-of-hospital practice: both still emphasize the central tenets of protection of the airway with cricoid pressure after induction of anaesthesia, maintenance of oxygenation, and prompt intubation facilitated by rapid-onset neuromuscular block. Neither has been studied in any detail in the adult ICU setting and this is clearly an opportunity. The RSI technique itself is rather poorly defined and there is longstanding evidence that the technique is often modified by clinicians to suit current needs and expectations: with the use of drugs other than thiopental and succinylcholine and co-administration of opioids being commonplace.5 It is unlikely that RSI is indicated in all ICU intubations, but a high proportion cannot be guaranteed to have an empty stomach.

Jabre and colleagues6 7 have shown that protocolized RSI can improve patient safety by reducing physiological decompensation, and Mort8 9 has identified high rates of complications associated with intubation outside the operating theatre, but in both cases, practices may not reflect the current UK practice. There is a potential opportunity to study RSI and its variations in ICU. Both CRSI and DRSI may have a role in selected patients, but other questions such as the efficacy of a checklist, use of induction agents such as ketamine,6 of neuromuscular blockers such as rocuronium (with sugammadex back-up), and the importance of skilled assistance are equally ripe for study. Other factors might include further study of techniques that might prolong the time to hypoxia, such as patient positioning, continuous positive airways pressure, and continuous nasal oxygen after induction.10 Bowles and colleagues are formally examining the impact of their checklist on processes and outcomes. We hope the ICU community might grasp the opportunities described above in an attempt to make airway management in ICU more reliable and safer.

Declaration of interest

T.M.C. was the co-lead of the Fourth National Audit Project of the Royal College of Anaesthetists.

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Bedside approach to optimizing the positioning of intra-aortic balloon pumps

Editor—An intra-aortic balloon pump (IABP) is frequently used to support patients with haemodynamic instability, such as that associated with cardiogenic shock, ischaemic heart disease, postsurgical myocardial dysfunction, or septic shock. The efficacy of IABP therapy depends on the optimal positioning of the tip of the balloon, which should be placed 2–3 cm distal to the origin of the left subclavian