

is powered to detect one particular outcome measure, but also reports the statistical significance of a secondary outcome for which is not powered. Authors may be tempted to make reference to ‘trends’ in significance, but would be incorrect to do so. Despite the compelling findings about procedural time and the strength of its significance ($p < 0.001$), we decided that further commentary about this (underpowered) result was not warranted, and so simply reported the data.

We agree with Lambert and Anwar that EuroSCORE 2 has been shown to be superior to other surgical risk stratification scores, but is still relatively poor at predicting short-term outcome after TAVI [2, 3]. Clearly, the development of a TAVI-specific risk stratification score is needed. Given the methodological difficulties in conducting a propensity match for a high number of variables in our relatively small study, the likelihood of achieving balance across multiple variables (and potentially generating a negative balance improvement for some) would be difficult. With the risk of generating further statistically and clinically significant differences between the cohorts (beyond age and history of hypertension), we elected to simplify the match to minimise the risk of a negative impact on the data set.

L. F. Miles

A. A. Klein

G. Martinez

J. F. Irons

Papworth Hospital,

Cambridge, UK

Email: lachlan.miles@gmail.com

No external funding or competing interests declared. Previously posted on the *Anaesthesia* correspondence website: www.anaesthesiacorrespondence.com

References

1. Miles LF, Joshi KR, Ogilvie EH, et al. General anaesthesia vs. conscious sedation for transfemoral aortic valve implantation: a single UK centre before-and-after study. *Anaesthesia* 2016; **71**: 892–900.
2. Cockburn J, Dooley M, Trivedi U, De Belder A, Hildick-Smith D. Which surgical risk score is best for predicting outcome in patients undergoing trans-catheter aortic valve implantation: comparison of additive EuroScore, logistic EuroScore, EuroScore II, and the society of thoracic surgery global scoring systems. *Journal of Cardiovascular Surgery (Torino)*. March 2016. Epub ahead of print. <http://www.ncbi.nlm.nih.gov/pubmed/26981704> (accessed 23/08/2016).
3. Watanabe Y, Hayashida K, Lefèvre T, et al. Is EuroSCORE II better than EuroSCORE in predicting mortality after transcatheter aortic valve implantation? *Catheter Cardiovascular Interventions* 2013; **81**: 1053–60.

doi:10.1111/anae.13697

Can linear cognitive aids always be used in anaesthesia?

Marshall et al. showed that using a linearly-designed cognitive aid improves treatment of anaphylactic reactions during anaesthetic simulations [1], in accordance with what has long been used in cockpit checklists [2]. In our own institution, we use linear cognitive aids whenever possible. Ninety-six and 83% of algorithms in the Stanford and Harvard emergency manuals [3, 4], respectively, are presented linearly. Marshall et al. [1] designed

a branched model and compared it with the linear model used by the Australia and New Zealand Anaesthetic Allergy Group. Given that most anaphylaxis checklists are linear; it is perhaps not surprising that 37.5% of teams in the study did not access the branched cognitive aid.

However, some clinical circumstances cannot be standardised easily with a linearly-designed cognitive aid. For example, difficult airway management protocols include branched options. Other algorithms subdivide long linear checklists into smaller task checklists [2, 5]. Linearity can be regained if the branches are separated into separate cognitive aids. For example, the Harvard booklet [4] considers airway and non-airway fire in a single branched protocol, whereas two separate cognitive aids are presented in the Stanford manual [3]. Linear, separated cognitive aids are easier to read but require a greater number of forms, whereas a single form is complex but encompassing, possibly improving situational awareness by suggesting options that may not have been considered by the physician.

The formatting and design of medical checklists requires further evaluation to improve operator compliance and patient outcome [6].

A. Blanie

D. Benhamou

Assistance Publique – Hôpitaux de Paris,

Paris, France

Email: antonia.blanie@aphp.fr

No external funding or competing interests declared. Previously posted on the *Anaesthesia* correspondence website: www.anaesthesiacorrespondence.com

References

1. Marshall SD, Sanderson P, McIntosh CA, Kolawole H. The effect of two cognitive aid designs on team functioning during intra-operative anaphylaxis emergencies: a multi-centre simulation study. *Anaesthesia* 2016; **71**: 389–404.
2. Degani A, Wiener EL. Cockpit checklists: concepts, design, and use. *Human Factors* 1993; **35**: 345–59.
3. Emergency manual. Cognitive aids for perioperative critical events 2014, V2. Stanford Anesthesia Cognitive Aid Group. <http://emergencymanual.stanford.edu/> (accessed 16/07/2016).
4. Operating Room Crisis Checklists. Brigham and Women's Hospital and Harvard School of Public Health. <http://www.projectcheck.org/checklists.html> (accessed 16/07/2016).
5. Library Guides: Australian and New Zealand Anaesthetic Allergy Group (ANZAAG). <http://libguides.anzca.edu.au/library/anzaag> (accessed 16/07/2016).
6. Hales B, Terblanche M, Fowler R, Sibbald W. Development of medical checklists for improved quality of patient care. *International Journal of Quality in Health Care* 2008; **20**: 22–30.

doi:10.1111/anae.13651

Abandoning cricoid pressure – 2

We would like to add further points for discussion to those made by Turnbull et al. about the use of cricoid pressure in rapid sequence induction (RSI) [1].

A recent survey of registered European Trauma Course (ETC) Instructors from eight medical specialties in 25 countries found a wide variation in the use of cricoid

pressure during emergency intubation of trauma patients [2]. The mean reported use of cricoid pressure was only 49.8%, but in the UK, 83.1% of respondents used it in trauma patients compared with only 39.4% in the rest of Europe. Overall, anaesthetists were the specialty least likely to apply cricoid pressure (35.6%), with emergency medicine physicians the most likely (83.3%). This would indicate that cricoid pressure use in trauma patients, a group where traditionally this has been seen as standard practice, is far from universal, even within the UK.

The clinical scenarios in which a patient may be at risk of regurgitation are heterogeneous. In a patient with small bowel obstruction and uncertain nil-by-mouth duration, RSI with cricoid pressure would seem a sensible approach. However, in a patient with traumatic brain injury, Glasgow coma score (GCS) < 8/15 and unknown fasting duration, actual/suspected cervical spine injury managed with a semi-rigid cervical collar or manual in line stabilisation may make laryngoscopy and intubation more difficult [3], and additional cricoid pressure, especially if imperfectly performed, could further hinder intubation [4]. Prolonged attempts or failure to intubate in this group of patients risks hypoxaemia, which is associated with a worse outcome [5].

Clearly, the risk versus benefit ratio of cricoid pressure in each situation is different, but this is not reflected or acknowledged by the authors of the editorial in advocating its 'default application in the context of RSI.' Good practice in anaesthesia should aim to tailor the

various 'components' to the particular needs of each individual patient, whenever possible using an evidence-based approach. The use of RSI and cricoid pressure is no different. Therefore, rather than debating whether to use cricoid pressure at all, shouldn't we be working towards rational and clear guidelines for when it should be applied?

M. T. Gwinnutt

Aintree University Hospital NHS Foundation Trust,
Liverpool, UK

Email: mgwinnutt@doctors.org.uk

J. A. Gwinnutt

Walton Centre NHS Foundation Trust,
Liverpool, UK

MG and JG contributed to the survey quoted as reference 2. No external funding or competing interests declared. Previously posted on the *Anaesthesia* correspondence website: www.anaesthesiacorrespondence.com

References

1. Turnbull J, Patel A, Athanassoglou V, Pandit JJ. Cricoid pressure: apply – but be ready to release. *Anaesthesia* 2016; **71**: 999–1012.
2. Gwinnutt MT, Gwinnutt JA, Robinson D. The use of cricoid pressure during rapid sequence induction in trauma patients: UK and European practice compared. *Trauma* 2016; **18**: 21–7.
3. Heath KJ. The effect on laryngoscopy of different cervical spine immobilization techniques. *Anaesthesia* 1994; **49**: 843–5.
4. Haslam N, Parker L, Duggan JE. Effect of cricoid pressure on the view at laryngoscopy. *Anaesthesia* 2005; **60**: 41–7.
5. Chi JH, Knudson MM, Vassar MJ, et al. Prehospital hypoxia affects outcome in patients with traumatic brain injury: a prospective multicenter study. *Journal of Trauma* 2006; **61**: 1134–41.

doi:10.1111/anae.13711