Commentary

Restrictive transfusions, experienced radiologists and prone positioning

Jonathan Ball

Department of Anaesthesia & Intensive Care, St George's Hospital Medical School, University of London

Correspondence: Jonathan Ball, j.ball@sghms.ac.uk

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The volume of published research in critical care continues to increase with each passing month. In this issue of *Critical Care* a few of the less well publicised but clinically important papers are reported on.

A continuing theme over recent months has been to reaffirm the potentially harmful effects of specific interventions. The Canadian Clinical Trials Group published the third paper from their investigations into the effects of a restrictive strategy of blood transfusion (see paper report) [1]. Their restrictive strategy sets the threshold for packed red cell transfusion at haemoglobin levels <8 g/dl, as opposed to their liberal strategy that sets the transfusion threshold at <10 g/dl. This latest study looks at the effects of the restrictive strategy on weaning from mechanical ventilation. Like the two previous studies from this group [2,3], the restrictive strategy is found to be at least as good as, if not significantly better than, the liberal transfusion strategy. On a similar theme, Putensen and colleagues (see paper report) [4] have published a trial that adds to the growing body of evidence that minimising sedation and maximising patient respiratory effort in patients with acute lung injury/adult respiratory distress syndrome (ARDS) is of significant benefit.

In the trauma literature, Davis and colleagues (see paper report) [5] report the results of a trial of imaging to exclude cervical spine injury. Their approach using dynamic fluoroscopy appears both thoughtful and sensible but perhaps most importantly they stress the need for, and value of, an experienced radiological opinion in the management of these patients.

From a French group comes a paper that demonstrates the vital importance of study design (see paper report) [6]. In their paper, the group eloquently show that a detailed understanding of the distribution of disease outcome is necessary to adequately power an outcome study and dictate the specific group to be targeted to answer a study hypothesis. They rightly stress that not adopting this approach is not only a waste of precious resources but also unethical. This issue is pertinent to the recently published and keenly anticipated Italian trial of prone positioning in ARDS patients (see paper report) [7]. When presenting the results of this trial prior to their publication, Gattinoni emphasised that, with hindsight, the design of this trial was flawed, thus the negative result fails to answer the question of whether or not to employ this intervention in ARDS patients [8]. Considerable basic research into prone positioning continues to be published with at least 5 papers published in the last 3 months. The optimal use of this strategy, in particular the duration of prone positioning, must be established before a further randomised control trial of this intervention is attempted.

In addition to these studies a number of other papers are worthy of general attention [9–13].

Competing interests

None declared.

References

1. Hébert PC, Blajchman MA, Cook DJ, Yetisir E, Wells G, Marshall J, Schweitzer I: **Do blood transfusions improve outcomes related to mechanical ventilation?** *Chest* 2001, **119**:1850-1857. (see paper report)
2. Hébert PC, Yetisir E, Martin C, Blajchman MA, Wells G, Marshall J, Tweeddale M, Pagliarello G, Schweitzer I: **Is a low transfusion threshold safe in critically ill patients with cardiovascular diseases?** *Crit Care Med* 2001, **29**:227-234.
3. Hébert PC, Wells G, Blajchman MA, Marshall J, Martin C, Pagliarello G, Tweeddale M, Schweitzer I, Yetisir E: **A multicenter, randomized, controlled clinical trial of transfusion requirements in critical care. Transfusion Requirements in Critical Care Investigators, Canadian Critical Care Trials Group [see comments].** *N Engl J Med* 1999, **340**:409-417.
4. Putensen C, Zech S, Wrigge H, Wrigge H, Zinserling J, Stuber F, Von Spiegel T, Mutz N: **Long-term effects of spontaneous breathing during ventilatory support in patients with acute lung injury.** *Am J Respir Crit Care Med* 2001, **164**:43-49. (see paper report)

ARDS = adult respiratory distress syndrome.

5. Davis JW, Kaups KL, Cunningham MA, Parks SN, Nowak TP, Bilello JF, Williams JL: **Routine evaluation of the cervical spine in head-injured patients with dynamic fluoroscopy: a reappraisal.** *J Trauma* 2001, **50**:1044-1047. (see paper report)
6. Riou B, Landais P, Vivien B, Stell P, Labbene I, Carli P: **Distribution of the probability of survival is a strategic issue for randomized trials in critically ill patients.** *Anesthesiology* 2001, **95**: 56-63. (see paper report)
7. Gattinoni L, Tognoni G, Pesenti A, Taccone P, Mascheroni D, Labarta V, Malacrida R, Di Giulio P, Fumagalli R, Pelosi P, Brazzi L, Latini R: **Effect of prone positioning on the survival of patients with acute respiratory failure.** *N Engl J Med* 2001, **345**:568-573. (see paper report)
8. Ball J, Venn R: **Meeting report from the 21st International Symposium on Intensive Care and Emergency Medicine, Brussels, Belgium, 20-23 March 2001.** *Crit Care* **5**:138-144.
9. Bergmans DC, Bonten MJ, Gaillard CA, Paling JC, van Der Geest S, van Tiel FH, Beysens AJ, de Leeuw PW, Stobberingh EE: **Prevention of ventilator-associated pneumonia by oral decontamination. A prospective, randomized, double-blind, placebo-controlled study.** *Am J Respir Crit Care Med* 2001, **164**: 382-388.
10. Ammann P, Fehr T, Minder EI, Gunter C, Bertel O: **Elevation of troponin I in sepsis and septic shock.** *Intensive Care Med* **27**: 965-969.
11. Wu AH: **Increased troponin in patients with sepsis and septic shock: myocardial necrosis or reversible myocardial depression?** *Intensive Care Med* 2001, **27**:959-961.
12. Cole L, Bellomo R, Journois D, Davenport P, Baldwin I, Tipping P: **High-volume haemofiltration in human septic shock.** *Intensive Care Med* **27**:978-986.
13. Stiell IG, Hébert PC, Wells GA, Vandemheen KL, Tang ASL, Higginson LAJ, Dreyer JF, Clement C, Battram E, Watpool I, Mason S, Klassen T, Weitzman BN: **Vasopressin versus epinephrine for inhospital cardiac arrest: a randomised controlled trial.** *Lancet* 2001, **358**:105-109.