ICM Editorial Team

Editor's picks, 2012–2013: sixteen articles in free access in *Intensive Care Medicine*

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Dear ICM readers,

We are happy to present this selection of 16 articles published in 2012 and 2013. In order to make this data more accessible, they are now temporarily available for free under the “Editor's picks” section of the ICM Springer homepage [1].

We hope that you will take the opportunity to (re)discover the following papers:

1. Importance of informed consent in critical care research I: substitute decision makers' perspective [2].

The major motivations when substitute decision makers agree to have a critically ill relative participate in a research study are potential patient benefit, altruism, and the desire to advance medical progress. Substitute decision makers who decline are not opposed to research in principle, but are too apprehensive about their loved ones to consider research.

2. Importance of informed consent in critical care research II: delayed consent in the NICE-SUGAR study [3].

This study supports the continued use of delayed consent in randomized controlled trials that evaluate

available standard intensive care treatments in critically ill patients. Most former ICU patients enrolled in the NICE-SUGAR study would have agreed to participate in the study had they been able to be asked. Most reported that consent had been sought from the person from whom they would have wished and that they were content with the decision made.

3. Importance of informed consent in critical care research III: consent in pediatric critical care research [4].

The consent rates described in this study provide pediatric critical care researchers with a source of data for determination of recruitment rates, sample size calculations, budget estimations, and study timelines. We should be aware of the lower consent rates in the cardiac surgery population. We should also consider routine research assistant involvement prior to attempting consent.

4. Safety and quality of care for critically ill patients [5].

A European Society of Intensive Care Medicine Task Force on Quality and Safety identified nine indicators that could be used to improve quality in routine intensive care practice. These indicators are related to the structures (ICU fulfils national requirements to provide intensive care, 24-h availability of a consultant level intensivist, adverse event reporting system), processes (presence of routine multidisciplinary clinical ward rounds and standardized handover procedure for discharging patients), and outcomes of intensive care (reporting and analysis of SMR, ICU readmission rate within 48 h of ICU discharge, the rate of central venous catheter-related bloodstream infection, and the rate of unplanned endotracheal extubations).

5. **Variability in critical care bed numbers in Europe [6].**
Critical care bed numbers vary considerably between countries in Europe. On average there are 11.5 critical care beds per 100,000 head of population, with marked differences between countries (Germany 29.2, Portugal 4.2). Better understanding of these numbers should facilitate improved planning for critical care capacity and utilization in the future.
6. **Lung ultrasound guidelines [7].**
This is the first document reporting 73 evidence-based recommendations on clinical use of point-of-care lung ultrasound. The advantages of correct use of bedside lung ultrasound in the emergency setting are striking, particularly in terms of saving from radiation exposure, delaying or even avoiding transportation to the radiology department, and guiding life-saving therapies in extreme emergency.
7. **Ultrasound-guided vascular access: a “third eye” for ICU clinicians [8].**
There is a clear advantage of 2D vascular screening prior to cannulation and real-time ultrasound needle guidance with an in-plane/long-axis technique that optimizes the probability of needle placement. Ultrasound guidance can be used not only for central venous cannulation but also in peripheral and arterial cannulation. Ultrasound can be used in order to check for immediate and life-threatening complications as well as the catheter’s tip position.
8. **Visual anatomical lung CT scan assessment of lung recruitability [9].**
The computation of lung recruitability in acute respiratory distress syndrome (ARDS) is advocated to set positive end-expiratory pressure (PEEP) for preventing lung collapse. The quantitative lung CT scan, obtained by manual image processing, is the reference method but it is time consuming. Visual anatomical analysis can classify patients into those with high and low lung recruitability allowing more intensivists to get access to lung recruitability assessment.
9. **Berlin definition in infancy: multicenter evaluation and expert consensus [10].**
This retrospective study demonstrates the validity of the Berlin definition in infancy and early childhood. The good performance of the Berlin definition seems to be mainly related to the “severe” ARDS category. The Berlin definition must not be thought of as a prognostic tool, but it may be useful for optimizing clinical assistance, research, and health services planning in pediatric critical care.
10. **Etomidate increases susceptibility to pneumonia in trauma patients [11].**
In this sub-study of the HYPOLYTE trial, etomidate was found to be an independent risk factor for hospital-acquired pneumonia (HAP) in intubated trauma patients, and hydrocortisone was found to significantly decrease the rate of HAP and the duration of mechanical ventilation (MV) for etomidate-exposed patients. These results should alert physicians to limit the use of etomidate for the intubation of severe trauma patients unless they use hydrocortisone to counteract the deleterious effects of the drug.
11. **Extracorporeal membrane oxygenation (ECMO) in severe pediatric pneumonia: an evaluation [12].**
Survival in children with pneumonia supported with ECMO can reach up to 90 % and is almost comparable to patients only requiring invasive MV. Venoarterial ECMO may be associated with more serious complications and should be reserved for children with profound hemodynamic instability and severe ventricular dysfunction. Risk factors for poor outcome include the need to change the ECMO circuit and the need for renal replacement therapy.
12. **Old and very old [13].**
Elderly and very elderly patients will continue to be a significant and increasing proportion of ICU patients. With advancing age, the proportion of various preexisting comorbidities as well as the primary reason for ICU admission changes. Mortality in this cohort is substantial, and advanced age should be regarded as a significant independent risk factor specifically for ICU patients older than 75.
13. **ICU environment and the course of delirium [14].**
As the ICU environment appears to influence the course of delirium, non-pharmacological anti-delirium measures deserve more attention in intensive care medicine. This study is the first to assess the influence of ICU environment on delirium in the ICU.
14. **Dobutamine does not improve mortality of severe heart failure: systematic review [15].**
Dobutamine, despite its wide use in the management of severe heart failure, was not found to be associated with improved mortality. Moreover, a trend towards an increase in mortality with use of dobutamine compared with placebo or standard care was evident, although this did not reach statistical significance. Further methodologically sound studies would be beneficial to identify which patient populations are most likely to receive benefit, or indeed harm, from this agent.

15. Gelatin vs. albumin or crystalloids for volume resuscitation: systematic review and meta-analysis [16].

Gelatins were introduced into clinical practice before legislation in the aftermath of the thalidomide tragedy made clinical proof of safety mandatory. Among 40 randomized controlled trials published between 1976 and 2010, no study was adequately powered to investigate patient-important outcomes. Despite over 60 years of clinical experience with its use, the safety of gelatin in all settings in which it is used cannot be reliably assessed and confirmed.

16. Spending a birthday in ICU: a risk for an inappropriate level of care? [17].

Clinicians must be aware that patients spending their birthday in the ICU are at risk of an inappropriate level of care. Patients spending their birthday in the ICU are often admitted after unscheduled events and sudden illnesses (e.g., trauma or sepsis), and have greater disease severity than the other patients. Decisions to forgo life-sustaining treatment are made later in these patients.

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