

ICM Editorial Team

## Editor's picks, 2011–2012: fifteen articles in open access in *Intensive Care Medicine*

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ICM Editorial Team (✉)  
Hôpital Saint-Louis, 1 avenue Claude Vellefaux,  
75010 Paris, France  
e-mail: journal.icm@sls.aphp.fr

Dear ICM readers,

It is our pleasure to present you a small compendium of articles published in our journal in 2011 and 2012. In order to make the data more accessible, these articles are now open access and available in the “Editor's picks” section of the Springer ICM page (<http://www.springer.com/medicine/critical+care+and+emergency+medicine/journal/134?detailsPage=press>).

We hope that you will be as thrilled as we are to (re)discover the following papers.

### 1. Highly virulent *E. coli* strains involved in VAP: new therapies on the horizon? [1]

We invite you to read a very interesting study that establishes antibioresistance and genotypic characteristics of *E. coli* isolates isolated from VAP in adult ICU patients. These isolates are highly virulent, suggesting potential targets for new therapies.

### 2. How early should we think about invasive pulmonary aspergillosis (IPA) in critically ill H1N1 patients? [2]

In a retrospective study, IPA was diagnosed in as many as 23 % of critically ill patients with severe H1N1 virus infection at a median of 3 days after ICU admission! The data suggest that use of cephalosporins 7 days before ICU admission is an independent risk factor for fungal superinfection. These findings point out the need for increased

awareness of IPA, especially in those critically ill H1N1 patients already receiving CS.

### 3. (1 → 3)-β-d-Glucan as a tool discriminating between colonization and invasive *Candida* infection. [3]

In neutropenic critically ill patients with severe abdominal condition at ICU admission, β-d-glucan >259 pg/mL with a positive *Candida albicans* germ tube antibody accurately differentiated *Candida* colonization from deep-seated candidiasis.

### 4. Ultrasound-guided vascular access: a “third eye” for ICU clinicians. [4]

There is a clear advantage of 2D vascular screening prior to cannulation, and a real-time ultrasound needle guidance with an in-plane/long-axis technique optimizes the probability of correct needle placement. Ultrasound guidance can be used not only for central venous cannulation but also in peripheral and arterial cannulation. Ultrasound can also be used in order to check for immediate and life-threatening complications as well as for the catheter's tip position.

### 5. How objective are we in end-of-life decision making process? [5]

Patients who spend their birthday in the ICU receive a higher intensity of life-sustaining therapies and have a longer ICU stay. However, this increased therapeutic intensity does not translate into survival benefits compared to matched controls. Staff members caring for patients whose birthdays fall during their ICU stay should be aware that this feature can bias end-of-life decisions, leading to inappropriate goals of care.

### 6. Coagulation day 2010: thromboprophylaxis for the critically ill. [6]

Increasing awareness about diagnosis and prevention of venous thromboembolism by education, training and

communication may improve quality of care and adherence to guidelines. Especially the use of mechanical prophylaxis combined with anticoagulants and appropriate drug monitoring should be encouraged.

### **7. Extracorporeal membrane oxygenation (ECMO) in severe pediatric pneumonia: an evaluation. [7]**

Survival in children with pneumonia supported with ECMO can reach up to 90 % and is almost comparable to that in patients only requiring invasive mechanical ventilation. 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.

### **8. Recommendations from the ESICM Working Group on Abdominal Problems: back to the roots... and definitions! [8]**

The ESICM working group on abdominal problems suggests definitions of gastrointestinal dysfunction, as well as experts' opinions about patient management. This group also encourages further research to better define the characteristics of GI function in critically ill patients. More recently, the World Society of the Abdominal Compartment Syndrome (WSACS) updated their 2006 consensus definitions and suggested guidelines on intra-abdominal hypertension and the abdominal compartment syndrome [16].

### **9. Epidemiology of contrast-associated AKI: what's new? [9]**

Contrast-associated acute kidney injury occurs in one out of six ICU patients who undergo a contrast-enhanced noncoronary radiography examination and is associated with worse short- and long-term outcomes (i.e., renal replacement therapy, kidney function at discharge, increased length of ICU and hospital stays, and mortality). Preventive measures are used in only two-thirds of at-risk patients and do not translate into lower incidence of AKI.

### **10. The ALIEN study: incidence and outcome of acute respiratory distress syndrome in the era of lung-protective ventilation. [10]**

This is the first study to prospectively estimate ARDS incidence during routine application of lung-protective ventilation. The findings support previous estimates in Europe and are an order of magnitude lower than those reported in the USA and Australia. Despite the use of lung-protective ventilation, overall ICU and hospital mortality of ARDS patients remains as high as 40 %.

### **11. EUROBACT: characteristics and determinants of outcome in hospital-acquired bloodstream infections (BSI). [11]**

This study provides contemporary information on outcomes associated with hospital-acquired BSI within

the context of increasing rates of antimicrobial resistance, particularly among gram-negative pathogens. Both MDR pathogens and failure to administer adequate antimicrobials were associated with day-28 mortality. Furthermore, the results of EUROBACT confirm the importance of source control in critically ill patients with severe infections.

### **12. Cost-effectiveness of the Surviving Sepsis Campaign protocol for severe sepsis? [12]**

The SSC protocol is a cost-effective option for treating severe sepsis in Spanish ICUs. Future research, guided by value of information methods, should be conducted to determine whether this is also true in other countries. More recently, the Surviving Sepsis Campaign Guidelines Committee including The Pediatric Subgroup have updated their guidelines for management of severe sepsis and septic shock [17].

### **13. Sepsis after AKI: incidence, outcomes, interactions and quality improvement. [13]**

More than half of patients with AKI who are free of sepsis at the time of AKI diagnosis develop sepsis during hospitalization, half of them within 5 days after AKI diagnosis. Mortality from sepsis following AKI is similar to that for sepsis occurring before AKI diagnosis. It is likely that sepsis complicating AKI can contribute to the overall poor outcomes in this patient population. New preventive strategies in AKI patients might help to reduce the exceptionally high rate of mortality and morbidity associated with AKI in the critically ill.

### **14. Analgesia in ICU: do old drugs still do a good job? [14]**

Critically ill patients require analgesia for pain associated with their underlying medical conditions and to facilitate life-support technology. The focus of this study was to investigate a possible difference between fentanyl and remifentanyl in achieving an analgesia target. The use of remifentanyl-based analgesia in critically ill patients was not superior to fentanyl-based analgesia with regard to the achievement and maintenance of sufficient analgesia.

### **15. The variability of critical care bed numbers in Europe: an important confounder when assessing outcomes in different settings... [15]**

This study collected prospective data on the number of critical care beds for each country in Europe (July 2010–July 2011). Strikingly, a marked heterogeneity in the number of critical care beds across European countries was found, even after correction for population size and age distribution, gross domestic product, expenditure on healthcare, and number of total acute care beds.

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