Has mortality from acute respiratory distress syndrome decreased over time?

Authors: Phua J et al.


URL: http://ajrccm.atsjournals.org/cgi/content/full/179/3/220

Comment: Mortality due to acute respiratory distress syndrome (ARDS) and acute lung injury (ALI) is thought to have decreased recently. However, Phua et al. found that mortality due to ARDS did not decrease between 1994 (when the consensus definition for ARDS was published) and 2006, based on a systemic review of previous prospective observational studies and randomized controlled trials (RCTs). The expected risk of mortality due to ARDS was 40-45% based on observational studies and 35-40% based on RCTs.
Intensive versus conventional glucose control in critically ill patients

Authors: The NICE-SUGAR Study Investigators
URL: http://content.nejm.org/cgi/content/full/360/13/1283

Comment: There remains considerable controversy about how tightly blood glucose should be controlled in critically ill patients. Since Van den Berghe et al. reported the benefit of tighter glucose control (N Engl J Med 2001; 345: 1359-67), many studies have been performed, but the results are conflicting. The balance between benefits, and risks such as severe hypoglycaemia, has been unclear. To answer this question, the NICE-SUGAR Study was performed as a collaboration between Australian, New Zealand, and Canadian physicians. Intensive glucose control (81-108 mg/dL, average 107) (4.5-6.0 mmol/L, average 5.94) and conventional glucose control (≤180 mg/dL, average 142) (≤10 mmol/L, average 7.88) were compared. This RCT demonstrated that intensive glucose control increased mortality (27.5% in the intensive control group vs. 24.9% in the conventional control group). In addition, severe hypoglycaemia was reported in 6.8% of patients in the intensive control group but in only 0.5% of patients in the conventional control group. Taken together, these results indicate that strict control of blood glucose cannot be recommended in critically ill adult patients. Based on this report, the Surviving Sepsis Campaign guidelines have been updated (http://www.survivingsepsis.org/About_the_Campaign/Documents/SSC%20Statement%20on%20Glucose%20Control%20in%20Severe%20Sepsis.pdf), and a goal of blood glucose concentrations approximating 150 mg/dL (8.33 mmol/L) is now recommended.

Prone positioning in patients with moderate and severe acute respiratory distress syndrome

Authors: Taccone P et al.
URL: http://jama.ama-assn.org/cgi/content/full/302/18/1977
http://jama.ama-assn.org/cgi/content/abstract/302/18/1977

Comment: Prone positioning of patients with acute respiratory distress syndrome (ARDS) has been recognized as a beneficial procedure for avoiding severe hypoxaemia. However, no randomized controlled trial (RCT) has demonstrated a significant impact on mortality. This RCT was performed with a lung protective strategy and a prolonged period in the prone position (18 h/day for up to 28 days). The results indicated that prone positioning did not improve mortality at 28 days or at 6 months. Although patients ventilated in the prone position required a lower fraction of inspired oxygen to maintain sufficient oxygenation, they also had more complications, such as the need for increased sedation, airway obstruction, haemodynamic instability etc. The editorial accompanying this article, which is subtitled "The seduction of physiology", is also worth reading (JAMA 2009; 302: 2030-2. http://jama.ama-assn.org/cgi/content/full/302/18/2030).
Outcomes associated with delirium in older patients in surgical ICUs

Authors: Balas MC et al.
URL: http://chestjournal.chestpubs.org/content/135/1/18.full

Comment: The population of many countries is now aging. More elderly patients are being admitted to hospitals and undergoing surgical operations. Delirium is one of the major complications after surgery. Balas et al. prospectively analyzed the association between delirium in the surgical intensive care unit (SICU) and functional ability after discharge, in elderly patients (≥65 years old). Delirium in the SICU and the occurrence of complications were strongly associated in older patients. Elderly patients experiencing an episode of delirium during their SICU stay showed decreased functional ability on discharge from hospital and were discharged to a place other than their home.


Early physical and occupational therapy in mechanically ventilated, critically ill patients: a randomized controlled trial

Author: Schweickert WD et al.
URL: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60658-9/fulltext

Comment: Physical debility and neuropsychiatric dysfunction are often seen in patients who have undergone prolonged mechanical ventilation. As expected, physical and occupational therapy during daily periods of interruption of sedation resulted in better functional outcomes, a shorter duration of delirium, and more ventilator-free days.

Effectiveness of treatments for severe sepsis

Author: Ferrer R et al.
URL: http://ajrccm.atsjournals.org/cgi/content/full/180/9/861

Comment: In a large observational study of ICU patients with severe sepsis, only early administration of broad-spectrum antibiotics and administration of human-activated protein C were independently associated with survival. No benefit was observed with fluid resuscitation or with low-dose corticosteroids. However, the patients evaluated in this study were severely ill and it is open to discussion whether patients with less severe sepsis may benefit.

Non-invasive ventilation in acute respiratory failure

Authors: Nava S, Hill N.
URL: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60496-7/fulltext

Comment: Although most Respirology readers would be familiar with non-invasive mechanical ventilation, this is a good review article for residents to read.

Comparison of routine and on-demand prescription of chest radiographs in mechanically ventilated adults: a multicentre, cluster-randomized, two-period crossover study

Authors: Hejblum G et al.
URL: http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)61459-8/fulltext

Comment: The American College of Radiology recommends routine daily chest radiographs for mechanically ventilated patients in intensive care units (ICUs). Hejblum et al. compared routine and on-demand strategies, and found that on-demand requests for chest radiographs, when warranted by the patient's clinical status was sufficient for patient care. An on-demand strategy decreased the use of chest radiographs without a reduction in the quality of care or safety of the patients.
International study of the prevalence and outcomes of infection in intensive care units

Authors: Vincent J-L et al.


URL: http://jama.ama-assn.org/cgi/content/full/302/21/2323
http://jama.ama-assn.org/cgi/content/abstract/302/21/2323

Comment: Half of the patients in intensive care units (ICUs) worldwide have active infections, most commonly of the lungs (64%). Vincent et al. analyzed 13,796 adult patients in 1,265 ICUs in 75 nations on one single day. Gram-negative bacteria were present in 62% of patients. The most common pathogen was Staphylococcus aureus, and half the strains were methicillin resistant. Other pathogens identified included Pseudomonas species (20%), Candida albicans (17%), and Escherichia coli (16%). Infection in the ICU was an independent risk factor for hospital deaths.

Implementation and impact of a translational research training program in pulmonary and critical care medicine

Authors: Schnapp LM et al.


URL: http://chestjournal.chestpubs.org/content/135/3/688.full

Comment: The Pulmonary and Critical Care Medicine Division at the University of Washington has developed a Translational Research Training Program to fill a gap between basic science and clinical research. This seems to be an excellent approach to developing successful new treatments for patients with severe disease and complications in the intensive care unit (ICU).

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