Journal club

Salbutamol infusion worsens outcomes in ARDS

Salbutamol infusion has previously been shown to significantly reduce extravascular lung water in mechanically ventilated patients with acute respiratory distress syndrome (ARDS). This double-blind randomised placebo-controlled study investigated the effects of early salbutamol infusion on the clinical outcome of patients with ARDS. The authors recruited a total of 326 patients from 46 UK intensive care units and randomly assigned them to receive either intravenous salbutamol or placebo for 7 days. Exclusion criteria included patients requiring continuous or regular aerosolized β_2 agonists and those receiving β-adrenergic antagonists. All other treatment measures were carried out according to local practice. The trial was terminated early due to safety concerns.

When compared with those in the placebo arm, patients receiving continuous salbutamol infusion demonstrated significantly higher mortality rates at 28 days (34% vs 23%, RR 1.47, 95% CI 1.03 to 2.08). There was also a trend towards increased adverse rates necessitating drug withdrawal, including tachycardia (14% vs 1%), arrhythmias (9% vs 2%) and lactic acidosis (6% vs <1%). This effect maintained statistical significance even after adjustment for age, cause, PaO_2/FiO_2 ratio and sex. Secondary outcome measures, including organ failure-free days and ventilator-free days, were also adversely affected by salbutamol infusion.

In conclusion, the results suggest that salbutamol infusion in patients with ARDS leads to detrimental outcomes. The drug was poorly tolerated by patients, resulting in an increased incidence of drug side effects, serious adverse effects or death. Routine use of β_2 agonist therapy in ARDS cannot be recommended.

► **Gao Smith F,** Perkins GD, Gates S, *et al*. Effect of intravenous β_2 agonist therapy on clinical outcomes in acute respiratory distress syndrome (BALTI-2): a multicentre, randomised controlled trial. *Lancet* 2012;**379**:229–35.

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