

JOURNAL CLUB

Prone positioning in severe acute respiratory distress syndrome

This prospective, randomised controlled trial assessed the effect of early application of prone positioning in patients with severe acute respiratory distress syndrome (ARDS). Primary outcome was mortality at day 28. Inclusion criteria included endotracheal intubation and mechanical ventilation for ARDS for less than 36 h and severe ARDS (defined as PaO_2 ; FIO_2 ratio of <150 mm Hg, with an FIO_2 of ≥ 0.6 ; a positive end-expiratory pressure (PEEP) of ≥ 5 cm of water, and a tidal volume of 6 ml/kg of predicted body weight). Patients were initially stabilised for 12–24 h. In the prone group, patients were turned to the prone position within the 1st hour after randomisation and were placed in a completely prone position for at least 16 consecutive hours.

Patients in the prone group had a significantly lower mortality rate at day 28 (16% vs 32.8%) and day 90 when compared with the supine group. Apart from a higher number of cardiac arrests in the supine group, there was no significant difference in other secondary outcomes. In the prone group, the PaO_2 ; FIO_2 ratio was significantly higher at days 3 and 5 and the PEEP and FIO_2 were significantly lower. It should be noted that pneumonia was the main cause of ARDS in both groups and there was significant difference in some baseline characteristics between the two groups including sepsis-related organ failure assessment score (higher in the supine group) and the use of vasopressors and neuromuscular blockers. After adjustment of these factors, mortality remained significantly lower in the prone group.

Although it is known that prone positioning improves oxygenation and can prevent ventilator induced lung injury, previous trials did not demonstrate it improves patients' survival rates. This trial demonstrated that early and long application of prone positioning improved mortality in patients with severe ARDS. However, application of prone positioning can be technically difficult and requires a team of experienced staff; its application may be challenging in units where resources are limited. An area of future research could be long term outcomes such as cognitive and functional status of patients who received prone positioning post ICU discharge.

► Guérin C, Reignier J, Richard JC, *et al.* Prone positioning in severe acute respiratory distress syndrome. *N Engl J Med* 2013;368:2159–68.

Amy H C Wong

Correspondence to Dr Amy H C Wong, Department of Surgery, Prince of Wales Hospital, 30-32 Ngan Shing Street, Shatin, New Territories, Hong Kong, China; amy.wong@doctors.org.uk

Thorax 2014;**69**:579. doi:10.1136/thoraxjnl-2013-204441