

JOURNAL CLUB

The role of high frequency oscillatory ventilation in acute respiratory distress syndrome

The OSCAR trial randomised acute respiratory distress syndrome (ARDS) patients to either high frequency oscillatory ventilation (HFOV) or conventional ventilatory support. This UK multicentre study recruited 795 patients between 2007 and 2012 who met established diagnostic criteria for ARDS and were expected to require ventilation for at least 2 days. Those with prior prolonged mechanical ventilation (>7 days), obstructive lung disease and recent pulmonary surgery were excluded. The primary outcome measure was all-cause mortality at 30 days postrandomisation.

No statistically significant difference in 30-day mortality was observed between the patient cohorts. The primary outcome occurred in 41.7% (166/398) of the HFOV group and 41.1% (163/397) of the conventional ventilation group. Furthermore, there was no significant difference between the groups for length of ITU and hospital stay, antibiotic use or vasopressors and inotropic support. HFOV was associated with an increased use of neuromuscular blocking agents.

The recently published OSCILLATE study, demonstrated inhospital mortality rates of 47% versus 35% ($p=0.005$) for HFOV and conventional ventilation, respectively. OSCILLATE suggested harm from early use of HFOV in ARDS. Both OSCAR and OSCILLATE therefore contrast to previous meta-analysis suggesting benefit of HFOV in ARDS patients.

The OSCAR study failed to show superiority of HFOV over conventional methods. Conversely, HFOV did not cause harm. The median duration of HFOV in OSCAR was 3 days and a more prolonged treatment may be necessary to demonstrate the mortality benefit. Certainly on current evidence, HFOV cannot be recommended as initial or routine care in ARDS.

- ▶ Young D, Lamb SE, Shah S, *et al.* High-frequency oscillation for acute respiratory distress syndrome. *N Engl J Med* 2013;368:806–13.
- ▶ Ferguson ND, Cook DJ, Guyatt GH, *et al.* High-frequency oscillation in early acute respiratory distress syndrome. *N Engl J Med* 2013;368:795–805.

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