

Prone Positioning: Cochrane Review Finds No Convincing Evidence



A Cochrane Review of prone positioning, published on 13 November, has found “no convincing evidence of benefit nor harm” from universal application of prone positioning (PP) in adults with hypoxaemia mechanically ventilated in intensive care units (ICUs).

Roxanna Bloomfield and David W Noble, from Aberdeen Royal Infirmary, and Alexis Sudlow from Norfolk and Norwich University Hospital conducted the review for the Cochrane Anaesthesia, Critical and Emergency Care Group. The review investigated whether prone ventilation offers a mortality advantage when compared with traditional supine or semi recumbent ventilation in patients with severe acute respiratory failure requiring conventional invasive artificial ventilation. It included evidence up to 31 January 2014, and analysed reports from 9 randomised controlled trials with 2165 participants.

Primary analyses of short- and longer-term mortality pooled from 6 trials showed a risk ratio (RR) of 0.84 to 0.86 in favour of prone positioning, but findings were not statistically significant. Short term mortality for patients ventilated in the prone position was 33.4% (363/1086) and supine 38.3% (395/1031) - an RR of 0.84 (95% confidence interval (CI) 0.69 to 1.02) marginally in favour of PP. For longer-term mortality, results showed 41.7% (462/1107) for prone and 47.1% (490/1041) for supine positions, with an RR of 0.86 (95% CI 0.72 to 1.03). The reviewers caution that the quality of the evidence for both outcomes was rated as low as a result of important potential bias and serious inconsistency.

Evidence of moderate quality showed benefit for three subgroups: patients recruited within 48 hours of meeting entry criteria (RR of 0.75); patients treated in prone position for 16 hours or more a day (RR of 0.77) and trial participants with more severe hypoxaemia at trial entry (RR of 0.77).

Adverse effects included increase in pressure sores (RR of 1.37) and tracheal tube obstruction (RR of 1.78) (95% CI 1.22 to 2.60). Reporting of arrhythmias was reduced (RR of 0.64).

The reviewers conclude: “Additional adequately powered studies would be required to confirm or refute these possibilities of subgroup benefit but are unlikely, given results of the most recent study and recommendations derived from several published subgroup analyses. Meta-analysis of individual patient data could be useful for further data exploration in this regard. They recommend that Long-term mortality data (12 months and beyond), as well as functional, neuro-psychological and quality of life data, are required.

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