Research in brief: Prone positioning in COVID-19: What's the evidence

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Background

Summary of Chad T, Sampson C. Prone positioning in conscious patients on medical wards: A review of the evidence and its relevance to patients with COVID-19 infection. *Clin Med* 2020;20:e97–103.

Prone positioning (PP) in non-COVID-19 acute respiratory distress syndrome (ARDS) has an established evidence base, particularly in intubated and mechanically ventilated (IMV) patients.[1] First proposed in the 1970s, clinical trials have shown that the majority of prone patients (>70%) with moderate to severe ARDS have considerable improvements in oxygenation, with average increases in PaO_2/FiO_2 ranging from 34–62%, and a significant reduction in both mortality and ventilator-associated pneumonia (VAP).[2–6]

Recruitment of dorsal (dependent) alveoli (thus improving ventilation/perfusion (V/Q) matching), a more homogenous pulmonary perfusion pattern and drainage of secretions are the physiological mechanisms by which PP works.[3,7,8]

The majority of data concerning PP centres around IMV patients in the intensive care unit (ICU) setting. Following a recent worldwide surge in the demand for high-dependency monitoring and ICU admission, can this evidence be extrapolated to conscious, non-ventilated, ward-based patients with COVID-19?

Review of the literature

Several reports have emerged concerning PP in conscious patients who fail to respond to non-invasive oxygenation, either via high-flow nasal cannula (HFNC) circuits or continuous positive airway pressure (CPAP) ventilation.[9–11] With limitations in study design and differences in both inclusion criteria and outcome data, it is difficult to categorically determine whether PP was an effective intervention. This is further compounded by lack of pre-pandemic study into PP on ward-based settings.

In short, the existing evidence base is too small for conclusions to be made regarding the efficacy of PP in conscious patients. While preliminary findings, in regards to improved oxygenation (25–100% of patients) coupled with intelligible underlying physiological mechanisms are encouraging, for PP to be definitively considered a useful intervention in the management of COVID-19 on ward-based patients, further evaluation is needed.[12]

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What does this mean in practice?

> PP is an achievable and relatively safe intervention that has been shown to improve oxygenation in a proportion of conscious ward-based patients.

> PP can be trialled on suitable patients on the wards if respiratory deterioration is observed. It is not a substitute for IMV but may defer the need for IMV (further study is needed).

> 'Prone teams' can facilitate in the identification and proning of suitable patients. This is particularly important in the significant cohort of obese patients observed with COVID-19.

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