Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Respiratory Care

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EFFICACY OF EARLY PRONE POSITIONING IN PATIENTS WITH COVID-19 PNEUMONIA REQUIRING SUPPLEMENTAL OXYGEN, HIGH FLOW NASAL CANNULA, OR NONINVASIVE VENTILATION

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PURPOSE: To assess the effect of awake prone positioning (PP) in non-intubated patients with COVID-19 pneumonia and acute hypoxic respiratory failure on oxygenation, escalation to ICU, and mortality.

METHODS: A prospective observational cohort study was conducted on a dedicated COVID-19 respiratory step-down unit within an urban, tertiary care, teaching hospital from 4/30/20-5/31/20. The unit was managed by internal medicine residents and hospitalists. Inpatients with documented COVID-19 pneumonia and those under investigation who required supplemental oxygen (nasal cannula, non-rebreather face mask, high flow nasal cannula, non-invasive ventilation) were encouraged to self-prone for at least 30 minutes and up to 4 hours per day (in 2, 2 hour sessions) for 3 to 5 days. Exclusion criteria: inability to provide verbal consent, inability to self-prone or change position, primary team's safety concerns, inability to protect airway, impending intubation, acute VTE diagnosed in the past 48hr, hypotension, recent intubation or ICU stay during the current admission. SpO2, oxygen delivery modality, and S/F ratios were monitored during PP and until discharge. All patients received usual COVID-19 care according to local institutional guidance.

RESULTS: 22 patients were screened for study inclusion, 14 patients were enrolled, 1 could not tolerate PP due to back pain and 2 were transferred to the ICU within 24 hours of enrollment. Of the 11 subjects ultimately analyzed, 55% were male, 45% were female, median age was 55. 2 had underlying lung disease and 2 had no comorbid conditions. 2 died during admission (both DNI), 9 were discharged home, and none were intubated. Only one required home oxygen on discharge. 9 of 11 patients (82%) successfully completed at least 3 days of PP. The median cumulative time spent prone was 10 hours, the mean was 10.3 hours (range: 4 hours-13.5 hours). Of the 9 who survived, 100% demonstrated an improvement in S/F ratio with PP and 8 of 9 patients (89%) continued to maintain improved S/F ratios after completing the PP intervention.

CONCLUSIONS: PP is generally well tolerated, and no patients experienced desaturation with PP. Our experience is similar to others who proned patients with ARDS who required HFNC or NIV. While the optimal duration of PP remains unclear, patients who can tolerate at least 4 hours of PP appeared to maintain their S/F ratio gains through discharge. A non-sustained or lack of S/F response to PP appeared associated with worse outcomes. The impact of PP on escalation to ICU in our study remains unclear.

CLINICAL IMPLICATIONS: PP is an easily implemented, low cost, and low risk intervention that could potentially aid in improving oxygenation in patients with severe COVID-19 pneumonia who have not been intubated and require varying levels of supplemental oxygen support. A lack of improvement in oxygenation with PP may also aid in identifying patients with worse outcomes.

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