Prone Positioning for Spontaneously Breathing Patients (COVID Pandemic)

Prone position in intubated patients with moderate to severe ARDS (PaO2/FiO2 ration < 150) decreases 90-day mortality. Proning helps recruit collapsed lung that is be pushed down by the chest wall and heart. In addition, the anterior chest wall is more flexible than the posterior chest wall, when positive airway pressure (ventilator) is applied the anterior lung is more likely to be filled. When we prone a patient (sleeping on the belly), we decrease the weight on the lung and restrict anterior chest wall to recruit the posterior collapse lung.

Benefits of Proning:

1) Improves oxygenation
2) Improves ventilation and perfusion matching of the lung
3) Helps recruit collapsed lungs

In spontaneously breathing patients it is reasonable to consider proning a patient when:

- Oxygen requirement
  - NRB Mask (non-rebreather mask, FiO₂ at 100%) or HiFlow NC FiO₂ ≥ 50% and flow ≥ 30LPM
  - SPO₂ ≤ 90

After proning:

- Clinical response should be assessed within 30 min. If clinical symptoms do not improve, team should consider escalation of management. ie. increasing FiO₂ and/or flow on Hiflow, or contacting Critical Care Medicine Command Center for assistance.
- If there is good clinical response and patient tolerates prone positioning, we encourage as staying in prone position for as long as possible with frequent breaks to relief pressure on face and other pressure points.

References:
- PROSEVA Study, Guerin et al, NEJM 2013; 368:2159-2168
- Prone positioning improves oxygenation in spontaneously breathing nonintubated patients with hypoxemic acute respiratory failure: a retrospective study. Scaravilli et al., J of Critical Care; 2015: 1390-1394
- https://images.app.googl/2KHayQNUZ7RFxb8j0