My Patient is Developing ARDS... Now What Do I Do?

1) **Confirm the Presence of ARDS and Classify Severity**
   Patients are deemed to have ARDS if they meet all 4 of the following criteria:
   - Acute onset (<7 days) from known cause (e.g., COVID-19 infection)
   - Bilateral opacities on chest radiograph
   - $P_aO_2 / F_iO_2$ (P/F ratio) < 300 while on PEEP of 5 cm $H_2$O
   - Not entirely due to pleural effusions, volume overload or cardiogenic edema

   Classification of Severity: ($P_aO_2$ obtained from ABG; $F_iO_2$ expressed as a decimal)
   - Mild: 200 $\leq P_aO_2 / F_iO_2 < 300$
   - Moderate: 100 $\leq P_aO_2 / F_iO_2 < 200$
   - Severe: $P_aO_2 / F_iO_2 < 100$

2) **Initiate low tidal volume ventilation (often referred to as lung protective ventilation)**
   Change tidal volume ($V_T$) to 6 ml/kg *predicted* body weight (PBW)
   Goals:
   - Plateau Pressure $< 30$ cm $H_2$O:
     - If $P_{plateau}$ $> 30$ cm $H_2$O: consider decreasing $V_T$ further, to as low as 4 ml/kg PBW
     - If $P_{plateau}$ $< 30$ cm $H_2$O: maintain 6 ml/kg
   - $S_aO_2$ 88 – 95% (or $P_aO_2$ 55 – 80 mmHg):
     - Use the PEEP/ $F_iO_2$ ladder. Start with the low ladder
     - Monitor for hypotension due to increased PEEP
     - **Call for Help! with persistent or worsening hypoxemia**
   - pH $> 7.20$ (Tolerate increases in $P_aCO_2$, “permissive hypercapnia”)

3) **If $P_aO_2 / F_iO_2 < 150$ consider prone positioning**
   Note this requires substantial personnel to safely perform, so consider available resources
   Protocol: Prone for 16 hours, then return to supine position
   Repeat daily
   Stop when P/F $> 150$ on PEEP $< 10$ cm$H_2$O and $F_iO_2 < 0.6$ or if ineffective

4) **If $P_aO_2 / F_iO_2 < 150$ and patient is not synchronous with the ventilator, start neuromuscular blockade**
   48-hour infusion of cis-atracurium
   Ensure deep sedation (RASS -4 to -5)

5) **Call for Help! if hypoxemia persists despite prone positioning and neuromuscular blockade**

Critical Care Skills for Non-Critical Care Providers
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