

INCLUSION CRITERIA Acute onset of:

1. $\text{PaO}_2/\text{FiO}_2 \leq 300$ (corrected for altitude)
2. Bilateral (patchy, diffuse or homogenous) infiltrates consistent with pulmonary edema
3. No clinical evidence of left atrial hypertension

PART I: Ventilator setup and adjustment

1. Calculate ideal body weight (IBW)
Male = $50 + 2.3 [\text{height (inches)} - 60]$
Female = $45.5 + 2.3 [\text{height (inches)} - 50]$
2. Select Assist Control Mode
3. Set initial TV to 8 mL/kg IBW
4. Reduce TV by 1 mL/kg at intervals ≤ 2 hours until TV = 6 mL/kg
5. Set initial rate to approximate baseline VE (not >35 bpm)
6. Adjust TV and RR to achieve pH and plateau pressure goals below
7. Set inspiratory flow rate above patient demand (usually >80 L/min)

PART II: Weaning

Definition of weaning tolerance

1. RR ≤ 35 (may exceed 35 for ≤ 5 minutes) and:
2. $\text{SpO}_2 \geq 88\%$ (<15 minutes at $<88\%$ may be tolerated) and
3. Respiratory distress is absent (<2 of the following)
Pulse $>120\%$ of usual rate for >5 minutes; marked use of accessory muscles; abdominal paradox, diaphoresis; marked complaints of dyspnea.

A. Conduct a CPAP Trial daily when:

1. $\text{FiO}_2 \leq 0.40$ and PEEP ≤ 8 .
2. PEEP and $\text{FiO}_2 \leq$ values of previous day.
3. Patient has acceptable spontaneous breathing efforts. (May decrease vent rate by 50% for 5 minutes to detect effort.)
4. Systolic BP ≥ 90 mm Hg without vasopressor support.

CONDUCTING THE TRIAL:

Set CPAP = 5 cm H₂O, $\text{FiO}_2 = 0.50$

If RR ≤ 35 for 5 min.: advance to Pressure Support Weaning below.

If RR > 35 in <5 min.: may repeat trial after appropriate intervention. (e.g.: suction, analgesia, anxiolysis)

If CPAP trial not tolerated: return to previous A/C settings.

B. Pressure support (ps) weaning procedure

1. Set PEEP = 5 and $\text{FiO}_2 = 0.50$.
2. Set initial PS based on RR during CPAP trial:
 - a. If CPAP RR < 25 : set PS = 5 cm H₂O and go to step 3d.
 - b. If CPAP RR = 25-35: set PS = 20 cm H₂O then reduce by 5 cm H₂O at ≤ 5 min. intervals until RR = 26-35, then go to step 3a.
 - c. If initial PS not tolerated: return to previous A/C settings.
3. REDUCING PS (No reductions made after 1700 hrs.)
 - a. Reduce PS by 5 cm H₂O q 1-3 hr, then go to step 3d.
 - b. If PS ≥ 10 cm H₂O not tolerated, return to previous A/C settings. (Reinitiate last tolerated PS level next AM and go to step 3a.)
 - c. If PS = 5 cm H₂O not tolerated, return to PS = 10 cm H₂O. If tolerated, 5 or 10 cm H₂O may be used overnight with further attempts at weaning the next morning.
 - d. If PS = 5 cm H₂O tolerated for ≥ 2 hrs, assess for ability to sustain unassisted breathing below.

C. Unassisted breathing trial

1. Place on a T-piece, trach collar, or CPAP < 5 cm H₂O.
2. Assess for tolerance as below for two hours.
3. If tolerated, consider extubation.
4. If not tolerated, resume PS 5 cm H₂O.

Definition of Unassisted Breathing Tolerance:

1. RR ≤ 35 and
2. $\text{SpO}_2 \geq 90\%$ and/or $\text{PaO}_2 \geq 60$ mmHg and
3. Spontaneous TV ≥ 4 mL/kg IBW and
4. Respiratory distress is absent (<2 of the following):
pulse $>120\%$ of usual rate for >5 minutes, marked use of accessory muscles;
abdominal paradox, diaphoresis, marked complaints of dyspnea.