Low Volume Ventilation Protocol

Reference: ARDS Clinical Network (www.ardsnet.org)

Goals: V_T=6ml/kg, P_{pl}<30 cmH_2O, pH=7.30-7.45

Initial Setting — Mode: VAC FiO_2: 100% V_T: 8 ml/kg PEEP: 5-7 cmH_2O RR<35 /min

Δ FiO_2 Δ PEEP — Achieve PaO_2>55 mmHg or SaO_2>88%

↓V_T 1 ml/kg Q2H — Achieve V_T: 6 ml/kg

If P_{pl} >30 — ↓ V_T 1 ml/kg until P_{pl} <30 or V_T=4 ml/kg

Measure pH

- pH = 7.15-7.30 → ↑RR until pH>7.30 or RR=35 /min
- pH < 7.15 → ↑RR to 35 then ↑ V_T 1 ml/kg

VT: Tidal volume; Ppl: Plateau pressure; VAC: Volume assist Control; PEEP: Positive end expiratory pressure.

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ARDSnet Incremental FiO2/PEEP Combination

Low PEEP / High FiO_2							
FiO_2	0.3	0.4	0.4	0.5	0.5	0.6	0.7
PEEP	5	5	8	8	10	10	10
FiO_2	0.7	0.7	0.8	0.9	0.9	0.9	1.0
PEEP	12	14	14	14	16	18	18-24

High PEEP / Low FiO_2							
FiO_2	0.3	0.3	0.3	0.3	0.3	0.4	0.4
PEEP	5	8	10	12	14	14	16
FiO_2	0.5	0.5	0.5-0.8	0.8	0.9	1.0	1.0
PEEP	16	18	20	22	22	22	24

Weaning Readiness
☑ $P_aO_2 \geq 60$ mmHg on $FiO_2 \leq 40$-50% & PEEP ≤ 5-8
☑ P_aCO_2 normal or at baseline
☑ Good inspiratory effort
☑ Heart rate ≤140 bpm
☑ Normal BP w/o pressors or w/ minimal pressors
☑ Patient is arousable or GCS ≥ 13
☑ Patient is afebrile
☑ No significant electrolyte abnormality

Ventilator Measurements for Weaning	
Tidal Volume (V_T)	4-6 mL/kg
Respiratory Rate (RR)	30-38 bpm
Minute Ventilation (V_E)	10-15 L/min
RSBI (RR/V_T)	60-105 /L
Max. Insp. Pressure (Pimax)	-15 to -30 cmH_2O

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