## MANAGEMENT OF ARDS

### Inclusion Criteria:

- $PaO_2/FiO_2$ less than or equal to 200 mmHg
- Hypoxemic Respiratory Failure
- Bilateral Infiltrates
- No evidence of left atrial hypertension
- Mechanically ventilated for greater than or equal to 24 hrs

### Exclusion Criteria:

- Severe COPD, Interstitial lung disease
- Raised intracranial pressure, Tricyclic overdose
- Sickle cell disease

## Respiratory

☒ Heated and Humidified Ventilator Circuit

☒ Calculate Predicted Body Weight (PBW): _____ kg

☒ Set initial VT 6 mL/kg PBW

☒ Set initial rate (RR) to approximate baseline VE (not greater than 35 bpm). Avoid auto-PEEP

☐ Volume Control Mode

☐ Pressure Control Mode

## Ventilation

### Oxygenation Goal:

☒ $PaO_2$ 55 – 80 mmHg or $SpO_2$ 88 – 92%

### Setting Initial PEEP:

☐ Decremental PEEP Study - Optimal PEEP Measurement

**OR**

☐ $PEEP/FiO_2$ table

☒ Notify Physician if patient unresponsive to increasing increments in PEEP

| **$FiO_2$** | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 | 0.9 | 0.9 | 0.9 | 1 | 1 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PEEP** | 5 | 5 | 8 | 8 | 10 | 10 | 10 | 12 | 14 | 14 | 14 | 16 | 18 | 20 | 22 | 24 |

**Recruitment Maneuver**

☐ Recruitment maneuver: 40 $cmH_20$ for 40 seconds with upward changes in PEEP or circuit disconnection

**Weaning PEEP/$FiO_2$**

☒ Wean $FiO_2$ to 0.50 then reduce PEEP

☒ Do not reduce PEEP more than 2 $cmH_2O$ every 2 hours

**If $PaO_2/FiO_2$ less than 150 after 24 hours of mechanical ventilation**

☐ Adjust sedation/analgesia to achieve RASS minus 5

☒ Notify Intensivist if unable to achieve RASS minus 5 at max ordered sedation/analgesia infusion rates

☒ Notify Intensivist upon initiation of neuromuscular blocking agent (NMBA) infusion as below

**Initiate:**

☐ Rocuronium IV 0.3 mg/kg/h, titrate to max 0.6 mg/kg/h to achieve desired level of neuromuscular blockade or clinical response

**OR**

☐ Cisatracurium 15 mg IV Loading Dose immediately followed by 37.5 mg/h continuous infusion (preferred agent for patients with renal and/or hepatic dysfunction)

☒ Once patient started on NMBA, do not decrease sedation/analgesia infusion rates (RASS minus 5)

**Eye Care**

☒ Ocular Lubricant 2 drops to each eye q4h while patient receiving NMBA

☒ Keep eyes closed with saline moistened pads

☐ Initiate Prone Positioning

**If $PaO_2/FiO_2$ less than 60 after 24 hours of mechanical ventilation**

☐ Initiate Inhaled Epoprostenol (Flolan®) for ARDS Clinical Protocol

**AND/OR**

☐ Contact Criticall 1-800-668-4357 to consult with ECMO centre

**If $PaO_2/FiO_2$ less than 70 after above therapies**

☐ Refer to Intensive Care High Frequency Oscillation Clinical Protocol by a RRT for rescue therapy

**Plateau Pressure Goal (Pplat)**

☒ If Pplat less than or equal to 30 $cmH_2O$ **OR** less than _____ $cmH_2O$
  ☒ Check and document Pplat, VT and calculate Driving Pressure after each change in PEEP, VT or Inspiratory Pressure

☒ If Pplat greater than 30 $cmH_20$: decrease VT by 1 mL/kg steps **(min = 4 mL/kg)** provided pH greater than 7.15
  ☐ Adjust sedation/analgesia to achieve RASS minus 5
    ☒ Notify Intensivist if unable to achieve RASS minus 5 at max ordered sedation/analgesia infusion rates
    ☒ Notify Intensivist upon initiation of neuromuscular blocking agent (NMBA) infusion as below

    **Initiate:**
    ☐ Rocuronium IV 0.3 mg/kg/h, titrate to max 0.6 mg/kg/h to achieve desired level of neuromuscular blockade or clinical response

    **OR**
    ☐ Cisatracurium 15 mg IV Loading Dose immediately followed by 37.5 mg/h continuous infusion (*preferred agent for patients with renal and/or hepatic dysfunction)*
    ☒ Once patient started on NMBA, do not decrease sedation/analgesia infusion rates (RASS -5)

    **Eye Care**
    ☒ Ocular Lubricant 2 drops to each eye q4h while patient receiving NMBA
    ☒ Keep eyes closed with saline moistened pads

☒ If Pplat less than 25 $cmH_20$ and VT less than 6 mL/kg
  ☒ Increase VT by 1 mL/kg until VT = 6 mL/kg

☒ If Pplat less than 20 $cmH_20$ and breath stacking occurs
  ☒ Increase VT in 1 mL/kg increments **(max = 8 ml/kg)**

**pH Goal:**
☒ Greater than or equal to 7.15

☐ Permissive hypercapnea less than _____ mmHg permitted

**Ventilation Monitoring**
☒ Document Pplat, Driving Pressure & Intrinsic PEEP with changes to Mean Airway Pressure (MAP)
☒ Notify Intensivist if:
- Patient/ventilator asynchrony
- Driving Pressure greater than 13 and/or Pplat greater than 30 $cmH_2O$

☒ ABG q4h x first 24 hours, then daily and PRN