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| **Supplemental Table 1.** Working group consensus on intrinsic patient physiology recommendations | |
| **Physiology** | **Recommendations** |
| Hypoxemia | 1. Patients with hypoxemic respiratory failure are at high risk of desaturation during intubation. *100% agreement (SD 0%)* 2. Desaturation is the biggest risk factor for cardiopulmonary arrest. *87% agreement (SD 29%)* 3. Reduced functional residual capacity, atelectasis, alveolar filling, shunt physiology and increased dead space all contribute to difficulty with adequate preoxygenation. *100% agreement (SD 0%)* |
| Hypotension | 1. Patients with peri-intubation hypotension are at high risk of decompensation with intubation. *100% agreement (SD 0%)* 2. Risk factors for decompensation include vascular and cardiac effects of induction agents and effects of positive pressure ventilation. *99% agreement (SD 3%)* 3. Peri-intubation hypotension is independently associated with poor outcomes, including mortality, length of stay and end organ injury. *96% agreement (SD 12%)* 4. Shock index (heart rate/systolic blood pressure) can be useful for predicting PHI, but a normal shock index does not indicate low risk. *98% agreement (SD 7.5%)* 5. Patients should be screened for risk of decompensation. *97.9% agreement (SD 6.2%)* 6. Patients should have intravenous access sufficient for rapid fluid administration prior to intubation. *100% agreement (SD 0%)* 7. Patients should be screened for high risk of hemodynamic collapse with intubation. Those with a shock index >0.7 are at increased risk. *99% agreement (SD 1.5%)* 8. Hypotensive patients due to obstructive shock secondary to acute or acute on chronic RV failure should be managed per the RV failure guidelines. *99% agreement (SD 3%)* 9. Fluid responsive and tolerant patients should be fluid resuscitated prior to intubation, or at least during the intubation attempt. *99.5% agreement (SD 1.5%)* 10. When possible, vasopressor infusions should be started prior to intubation in patients that are not volume responsive or fluid tolerant. *99.5% agreement (SD 1.5%)* 11. When vasopressor infusions are not possible, bolus-dosed vasopressors should be available and used to maintain systemic pressure during and after the intubation, until an infusion can be started. *100% agreement (SD 0%)* 12. When bolus-dosed vasopressors are used, diluted epinephrine should be considered as the vasopressor of choice in patients with depressed myocardial function. *97% agreement (SD 5.6%)* 13. Hemodynamically neutral induction agents should be used. *100% agreement (SD 0%)* |
| Right ventricular Dysfunction | 1. Patients should be screened for significant RV dysfunction prior to intubation given the risk of decompensation with the transition to positive pressure ventilation. *94% agreement (SD 11%)* 2. When RV dysfunction is present, patients should be evaluated for RV systolic function, and fluid and vasopressor tolerance. Empiric fluid resuscitation without this evaluation can further reduce RV function. *98% agreement (SD 4%)* 3. Fluid and vasopressor tolerant patients should be resuscitated accordingly. *99.9% agreement (SD 0.3%)* 4. Intolerant patients should have RV afterload reduced with inhaled or intravenous pulmonary vasodilators. *96% agreement (SD 8%)* 5. ECMO cannulation should be considered if available in patients with RV failure induced shock. *98% agreement (SD 6%)* 6. Diuretics should be considered in patients with RV volume overload. *100% agreement (SD 0%)* 7. Hypercapnia should be avoided. *97% agreement (SD 8%)* 8. Mean arterial pressure should be augmented to maintain coronary perfusion pressure. In patients with chronic pulmonary arterial hypertension, a higher mean arterial pressure should be targeted to keep mean arterial pressure > mean pulmonary artery pressure. *100% agreement (SD 0%)* 9. Ventilation strategy after intubation should include a low mean airway pressure and a higher PEEP to avoid atelectasis. *94% agreement (SD 15.7%)* |
| Severe metabolic acidosis | 1. *Patients with severe metabolic acidosis are at high risk of decompensation due to volume depletion and inadequate alveolar ventilation after intubation.* 100% agreement (SD 0%) 2. *Patients with high minute ventilation requirements should be considered for awake intubation to maintain spontaneous respiration.* 99% agreement (SD 3%) 3. *Consider a spontaneous breathing mode after intubation in patients with very high minute ventilation requirements.* 99% agreement (SD 3%) |
| Neurologically injured patient | 1. Eucapnia should be maintained before, during, and after intubation. *99.9% agreement (SD 0.3%)* 2. Hemodynamically neutral induction agents should be used. *100% agreement (SD 0%)* 3. Patients should be positioned 30 degrees upright, when possible. *100% agreement (SD 0%)* 4. Post intubation management should include limiting PEEP to promote cerebral venous drainage. *92.5% agreement (SD 23.7%)* |
| **Supplemental Table 2.** Working group consensus on physician interventions to alter patient physiology | |
| **Intervention** | **Recommendations** |
| Preoxygenation | 1. All patients should be maximally preoxygenated prior to intubation. *96% agreement (SD 12%)* 2. Preoxygenation should be performed using high flow oxygen for at least 3 minutes, or 8 vital capacity breaths. *99% agreement (SD 4.5%)* 3. Maintenance of oxygenation should be performed to prolong the duration of safe apnea. *100% agreement (SD 0%)* 4. Apneic oxygenation can be performed with a standard nasal cannula at 15 LPM or HFNO systems at 40-60 LPM. Research is lacking in the optimal delivery method. *99% agreement (SD 3%)* 5. If a tight-fitting NRB or NIPPV face mask is not available for preoxygenation, assisted spontaneous respirations with a bag-valve mask with a PEEP valve and one-way exhalation port should be used. *100% agreement (SD 0%)* 6. If the patient cannot tolerate a tight-fitting NRB or NIPPV mask, heated high-flow nasal oxygen systems with 40-70 LPM of flow should be used. *99% agreement (SD 4.5%)* 7. If the patient has significant shunt physiology or reduced functional residual capacity (e.g., pregnancy, obesity, ARDS), preoxygenation should be performed with PEEP using NIPPV. *98% agreement (SD 7.5%)* 8. Inhaled pulmonary vasodilators can be considered to improve ventilation-perfusion mismatch prior to intubation in patients with severe hypoxemia. *90% agreement (SD 18%)* 9. When higher levels of PEEP are required, an extraglottic device should be considered for preoxygenation. *76% agreement (SD 40%)* 10. Awake intubation to maintain spontaneous respiration should be strongly considered for patients with refractory hypoxemia. *95% agreement (SD 9%)* 11. Patients should be preoxygenated in the upright position when possible. *98% agreement (SD 6.3%)* 12. Ramped positioning should be performed when possible to improve grade of view, improve maintenance of oxygenation, and reduce aspiration risk. *99% agreement (SD 3.1%)* |
| Delayed sequence intubation | * + - 1. When DSI is used, the operator should be ready for emergent intubation as the dissociative ketamine dose can be unreliable. *99.5% agreement (SD 1.5%)*       2. We recommend using small doses of ketamine (10-20 mg aliquots) or dexmedetomidine to avoid apnea from a dissociative dose. *97% agreement (SD 7.5%)* |