Critical Care Survival Guide

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Endotracheal Intubation

- Blade: Mac 3 or 4; Tube: F:7-8 mm; M:7.5-8.5; depth:21-23 cm
- Preoxygenate 3-5mim
  - Etomidate: 0.3 mg/kg (20 /30), 15-45sec, 3-12min
  - Midazolam: 0.1 to 0.3 mg/kg (7/10), 30-60s, 15-30m
  - Propofol: 1.5 to 3mg/kg (100 /150), 15-45s, 5-10m
  - Succinylcholine: 1.5 mg/kg (100/150),45-60s, 6-10m
    - avoid: CVA, HyperK+,Rhabdo, MG
  - Rocuronium: 1 mg/kg (70 /100), 45-60s, 45min
  - Vecuronium: 0.1 mg/kg (7-10), 75-90s, 45min

ACLS - Pressor q 3-5 min (Epi first, then vasopressin)

VF/ pulseless VT

- 100-200 J biphasic defibrillator (360 for mono)
- Epinephrine 1mg (10 ml of 1:10,000) q3-5min
- Vasopressin 40 U
- Amiodarone 300mg ± 150mg in 3-5min or
- Licodaine 1-1.5 mg/kg
- Mg++: 1-2g (if torsades)

Asystole/PEA

- Epinephrine 1mg (10 ml of 1:10,000) q3-5min
- Vasopressin 40 U

Narrow-Tachycardia

- Sinus Massage / Vagal maneuvers
- Adenosine 6mg, then 12mg
- Diltiazem 15-20mg, 5-15mg/h
- Metoprolol 5mg q5min
- Sync Cardiovert 100 J biphasic (A-fib: 200 J)

Wide- Tachycardia (Regular)

- Adenosine 6mg once, then 12mg
- Amiodarone 150mg
- Licodaine 1-1.5 mg/kg
- Sync Cardiovert 100 J biphasic

Brady

- Atropine 0.5mg q3-5min
- Transcutaneous pacing (Mobitz 2 or 3rd °) or
- Dopamine 2-10 mcg/kg/min or
- Epinephrine 2-10 mcg/min

Shock:

- Norepinephrine 1-30mcg/min (1 > 1)
- Vasopressin 0.04units/min (V1)
- Phenylephrine 10-100mcg/min (1)

Sedation:

- Midazolam 1-4mg IV bolus, then 1-2mg/hr (max 10mg/hr)
- Lorazepam 1-4mg IV bolus, then 1-2mg/hr (max 10mg/hr)
- Propofol 5 mcg/kg/min IV (max 80mcg/kg/min)
- Haldol 2-10 mg q 20-30 min (for acute agitation; monitor QTc)

Analgesia

- Morphine 2-4mg IV bolus, then 1-5mg /hr (max 10-15mg/hr)
- Fentanyl 25-50mcg IV bolus, then 25-100mg/h (max 300-500mg/hr)

A-a Gradient

- Normal (Age/4) + 4 OR 0.3 x Age
- DA-aO2 = (713 x FiO2) – (PaO2 + 1.25PaCO2)
  - 713 x .21 = 150
  - 713 x .35 = 250

Deciding to Intubate

- failure of airway protection: GCS 8, pooling secretions
- failure of ventilation
- failure of oxygenation: restlessness, agitation, cyanosis
- anticipated need for intubation
- pulse ox, vs, mental status, resp status

Recognize the Difficult Airway

Look externally: facies, unusual anatomy, or significant obesity

Evaluate: 3-3-2; fingers btwn incisors, mandible, laryngeal notch

Mallampati score: inability to visualize uvula predicts difficulty

Obstruction of airway: mass, hematoma, injury

Neck mobility: ability to achieve the sniffing position

NIPPV:

- **Uses**: HF (acute cardiogenic pulmonary edema), COPD
- **Eligibility**: Alert, able to protect airway/clear sections, RR<24, pH<7.35, PaCO2>45mmHg, SpO2<90%
- **Contraindications**: Arrest, arrhythmia, airway obstruction, SBP<90, pH<7.2, FiO2>0.5
- **Initial Setting**: IPAP: 8-20 cmH2O; EPAP: 5 cmH2O; Rate 4

Vents:

- Initial Settings:

Acid Base

AG Met Acid: Methanol, Uremia, DKA/EtOH KA, Paraldehyde, Isoniazid, Lactate, Etoh /Ethylene Glycol, Rhabdo/Renal Failure, ASA

Non AG Met Acid: Hyperalimentation, Acetazolamide, RTA, Diarrhea, Uretero/Pelvic Shunt, Post-Hypocapnia, Spironolactone

Resp Acid: CNS Depression, Airway Obstruction, PNA, Pulm Edema, PTX, Myopathy

Met Alk: Contraction, Licorice, Endo, Vomiting, Excess Alkali, Refeeding, Post-Hypercapnia, Diuretics

Resp Alk: CNS disease, Hypoxia, Anxiety, Mech Ventilators, Progesterone, ASA/Sepsis

Normal AG = Albumin x 3

Toxicology

- Gastric lavage if within 1 hr or if TCA
- Activated charcoal 50g orally
- -blocker: Glucagon 0.05 mg/kg IV then 0.07 mg/kg/hr
- Calcium channel blocker: Calcium Chloride 10% sol 5-10ml IV
- Cocaine: Benzos; severe HTN: phentolamine 5-10mg IV q10m or nitroprusside or labetalol
- Benzo: flumazenil 0.2 mg IV over 30s (watch for seizure)
- Opioid: naloxone 0.2mg IV (up to 2mg)
- APAP: Mucomyst 140 mg/kg, then 70 mg/kg q4hr
- ASA: AC 50g, sodium bicarbonate keep urine pH>8, HD
- TCA: NaHCO3- 2 amps in 1 L D5W ~ 100 cc/h keep pH >7.5

Pulmonary Artery Catheter Normal Values

- RAP pressure 1-7 mm Hg
- RVP systolic 15-25 mm Hg
- RVP diastolic 8-15 mm Hg
- PAP systolic 15-25 mm Hg
- PAP diastolic 8-15 mm Hg
- PAP mean 10-20 mm Hg
- SVRI 1600-2400
- CI 2.4-4

SAH

- Intubate if GCS 8 w/ etomidate
- Nimodipine 60mg PO q4° x 21d
- NS 3-5 L/day
- SCD/TEDs
- +/- steroids, AEDs, statin
- Tx BP w/ labetalol or hydralazine prn or nicardipine
- Tx vasospasm w/ HHT: MAP by 15-20%

A-fib

- Cardiovert: ongoing CP, pulm edema, hemodynamics unstable

- Epinephrine 2-10mcg/min (1, 2, 1, 2)
- Dopamine 2-20mcg/kg/min (D)
- Dobutamine 2-20mcg/kg/min (1 > 2)

Arrhythmias:

- Amiodarone 150mg bolus 1mg/min x6h 0.5mg/min
- Diltiazem 5mg bolus, then 5-15mg/h
- Esmolol 500mcg/kg bolus, then 50-200mcg/kg/min

HTN:

- Nicardipine 5-15mg/h
- NTG 2-20mcg/min
- Nitroprusside 0.5-8mcg/kg/min

  - Mode: Pressure/Volume /Dual Control
  - Volume: 6-8ml/kg IBW
  - FiO2: titrate for Sp O2 > 90%
  - Rate: 12-20
  - PEEP: 0-5cmH2O
- Improve ventilation: (CO2): Increase frequency or VT
- Improve oxygenation: (O2): Increase FiO2 or PEEP

Vent Weaning

- Criteria: Follows commands; Good cough & gag; PaO2 60 mmHg; FiO2 0.4-0.5; PEEP 5, RR<30

- Sync Cardiovert Biphasic 100-200J (50-100 AFlutter)
- Metoprolol 2.5-5mg IV q5-10 min - good for post op, if EF reduced or unknown
- Diltiazem 0.25mg/kg IV (15mg), then 5-15mg/hr
- Digoxin 0.25mg IV q2hr (max 1.5mg) good for HF, caution AKI
- Amiodarone 150mg IV, then 1mg/min x6h, then 0.5 x18h
- (maintenance 200mg/d)
- Esmolol 500ug/kg IV, then 60-200ug /kg/min