POST OP PRICKLIES

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Declarations

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Two Post Operative Chestnuts

- Hypoxia
- Hypotension

Hypoxemia

Firstly

- Urgent intervention?
- Increase the FiO_2
- Review events / history
- Focused examination
- Review investigations
  - CXR, ECG, ABG, Lung Fx

Causes to consider

- Inadequate PiO_2
  - eg Altitude
- Alveolar hypoventilation
  - eg Opiates
- Venous admixture
  - ie shunt
- Alveolar membrane disease
  - eg fibrosing alveolitis
- Hypermetabolism
  - eg MH, thyrotoxicosis

Venous admixture

- Airway obstruction
- Atelectasis
- Pneumonia
- Pulmonary Oedema
- Congenital conduits
- Pathologic conduits

Atelectasis is mostly what we deal with post operatively though…

- Problem: Collapsed Alveoli

Management – Get them open

- Incentive spirometry
- Sit them up, once safe to do so
- Chart turns
- Huffing, percussion, positioning
- Mobilise!
- F&P Airvo a modern option
- Non-invasive ventilation
- Failing that – consider the appropriateness and timing of IPPV

Hypotension

Firstly

- Urgent intervention?
- Fluid bolus if safe
- Review events / history
- Focused examination
- Review investigations
  - Hb, Creat, ECG, CXR

Focused cardiac ultrasound – You can learn this, you can do it!

- HART
- RACE
- FATE
- PGDipCU – Melbourne
- DDU – ASUM NSW
- ASCeXAM – USA

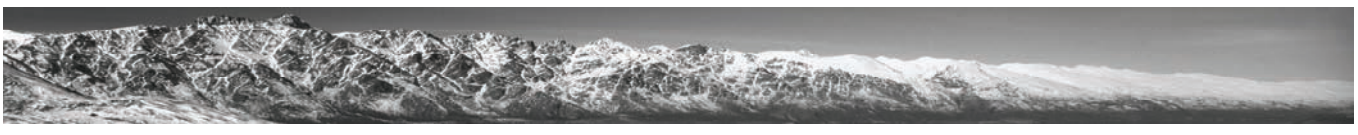
Tip – learn mostly from a cardiac sonographer

Information obtainable

- Volume status – LVEDD
- Volume status – IVC diameter
- LV systolic function
- Pressure state – atrial septal motion
- Segmental wall motion abnormality
- LV diastolic function
- RV systolic function – TAPSE
- PASP = $RAP_{ivc} + (TR_{Vmax})^2$

Prior management approach

- Volume
  - Like for like re losses
  - Until the patient is just about to drop their oxygen saturations, then stop volume ‘maximised’
- Then vasopressor
  - eg metaraminol infusion 1-10mg/hour
- Then inotrope
  - eg noradrenaline in HDU / ICU



- While correcting the 'cause'

New option

- Diagnose the hemodynamic state
- Treat the state and cause
- Review treatment, with echo if necessary
- Maintain vigilance for more than one issue
- Management of hypotension
- Manage the hemodynamic state

Manage the hemodynamic state

- Hypovolemia = volume
- Primary LV systolic failure = inotrope +/- offload
- Primary LV diastolic failure = optimise lusitropy
- Mixed LV systolic / diastolic failure = inodilator
- RV failure = noradrenaline, off load ventricle
- Vasodilation = alpha constrictor of your choice
- Normal = tolerate and watch end organ function

As you manage / treat the cause as able

Intermediate Care

"Private, 76 year old, HT, post knee with epidural running, systolic 74mmHg, volume unresponsive" – old or new approach?

Approaches

Old

- No epidural
- More volume anyway
- IM metaraminol
- PO ephedrine
- Ward dopamine
- Tolerate it

New

- Intermediate Care
- 1:1 nursing
- Close observation
- Invasive monitoring
- Low dose vasoactive drugs
- Primary team responsible for medical care
- Clinical Director and Nurse Charge Nurse
- FCICM standard as a basis for quality

As instituted by Southern Cross Hospitals

- Not an HDU - HDU 21st century are closed, co-located, advanced cares
- Intermediate in capability to a ward bed and an HDU bed
- Same quality, based on FCICM, requires Level 2-3 ICU oversight
- Same policies, same management approach as oversight unit

Requires

- Clinical and nursing leadership
- Audit, and communication avenues
- Advanced training for a dedicated nursing team
- Guidelines and boundaries for safe care
- Ongoing training, and service improvements
- Ongoing liaison with oversight ICU

Key Requirement

- Strategic foresight by organisation
- Allocation of sufficient resources
  - Training, staff numbers, leadership

Results

North Harbour

- 250 patients in 3 years, no transfer from ICF to ICU / HDU
- All to ward
- Started to increase acuity of patients we care for
- Cardioversion training

Brightside

- 72 patients in a year, no transfers ICF to ICU / HDU
- All to ward
- Gaining confidence

Feedback

- Patients feel safe
- Nurses can do their job and get listened to
- Clinicians have a backstop they have control over
- ICU forget what a transfer to their HDU/ICU looks like
- MOH DAA 100% audit for both units NH 2012, BS 2013

Isn't it time you had one in your service?