Pre-anaesthetic assessment
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Objectives

- Medical assessment
- Optimise conditions for anaesthesia and surgery
- Plan appropriate anaesthetic
- Organise relevant investigations
- Communication of plans to patient
- Plan post op care
- Informed consent medical/financial
- Opportunity to ask and answer questions; open lines of communication with patient, anaesthetist, surgeon
Difficulties

• Preop anaesthetic clinics
• Different people involved over time (less of an issue outside of metro hospitals?)
• Time pressures
• Emergency surgery
• Day of surgery admission
Why do we need to improve our evaluation?

• Increasing DOSA
• AIMS - 11% of adverse events cited inadequate preop assessment or preparation as a cause
FASTING
Why fast?

• To reduce the risk of regurgitation of gastric contents
• The values of gastric volume and pH at which risk of regurg is increased are unclear
• 1974 Roberts set values of pH<2.5 and vol >0.4ml/kg based on unpublished studies in monkeys
• We have followed this ever since
Nil by Mouth

- Has evolved to mean NBM from 2400 for a.m lists and light breakfast for p.m lists
- Easy to explain
- Even the stupid ones can understand this
- Allows for flexibility in op list
- Often patients fast much longer than this
The evidence for fasting

• Too many studies to mention
• As the incidence of regurg is low the size of a trial required to demonstrate the safety of a particular regimen would be huge
• Measures of risk: gastric volume and pH, dye markers, patients perception of hunger, thirst, anxiety, vomiting etc.
Current guidelines

• Solids and formula 6hrs
• Breast milk 4 hrs
• Clear fluids 2hrs
Duration of fast

- Fluids up to 90-120 mins vs standard fast showed no difference in gastric volume
- Similarly no difference in gastric pH
- All gps in shortened fast reported lower incidence of thirst and hunger
- Some decrease in anxiety
- No difference in post op pain scores or PONV
Volume of intake

- Comparison of 150mL vs 400mL vs unlimited
- No report of aspiration or regurg in any group
- Similar reports of reduction in thirst and hunger
- Patients given larger volumes tended to complain more
Children

- Require adequate hydration to maintain haemodynamic stability during inhalational induction
- Limited glycogen stores to maintain plasma glucose levels while fasting
- Stronger emphasis on patient and parent satisfaction
Cautions

- Trauma
- Ileus/bowel obstruction/pyloric stenosis
- Opioids and anticholinergics
- Emergency surgery
- Pregnancy
- Obesity
CARDIAC ASSESSMENT OF PATIENTS FOR NON-CARDIAC SURGERY
• ACC/AHA guideline update for perioperative evaluation for non-cardiac surgery

J Am Coll Cardiol 2007;50:e159-e251
General Approach

- Nature of surgical condition (elective/semi-urgent/urgent)
- Patients risk factors
- Specific surgical considerations
- Pre-op testing and intervention limited to things that will actually affect patient outcome
Assessment

• Stepwise approach looking at:
  – Clinical markers
  – Prior coronary evaluation and treatment
  – Functional capacity
  – Surgery-specific risk
• Step 1: emergency surgery – proceed
• Step 2: Clinical markers
• Step 3: surgical severity
• Step 4: Functional capacity
• Step 5: consider pts with intermediate risk
Cardiac evaluation and care algorithm for noncardiac surgery based on active clinical conditions, known cardiovascular disease, or cardiac risk factors for patients 50 years of age or greater

Clinical markers

- Major predictors of increased perioperative risk
  - Recent unstable coronary syndrome within 7 days
  - Recent MI within 1 month
  - Unstable or severe angina
  - Evidence of a large ischaemic burden by symptoms of non-invasive testing
  - Significant arrhythmia (1°HB, symptomatic arrhythmia, supraventricular arrhythmia with uncontrolled ventricular rate)
  - Severe valvular disease
Clinical Markers

• Intermediate predictors
  – Mild angina
  – MI > 1 month before surgery
  – Compensated HF
  – Preop Cr>0.2mg/L
  – Diabetes mellitus
Clinical Markers

• Minor predictors
  – Advanced age
  – Abnormal ECG
  – Rhythm other than SR
  – Low functional capacity
  – Stroke
  – Uncontrolled systemic HT
Functional capacity

• Metabolic equivalent levels
• 1-4 MET : washing, dressing, walk around house
• 4-10 MET : Climb a flight of stairs, walk level ground 6.4km, golf round
• Risk increased in those who can’t make 4 MET
Surgery Specific risk

- Type of surgery itself
- Degree of haemodynamic stress
- High risk: Major emergency surgery, major vascular, peripheral vascular, long procedures with major anticipated bld loss or fluid shifts
- Intermediate risk: Intraperitoneal/intrathoracic sx, CEA, head and neck, ortho, major prostate
- Low risk
Cardiac Risk Stratification

- High risk >5% (combined incidence of death and MI)
- Intermediate risk <5%
- Low risk <1%
Urgency of surgery

- May make decision easy
- General recommendation for elective sx is wait 4-6 weeks after MI
Intermediate clinical predictor of risk

• Consider functional capacity and surgery-specific risks to help stratify
Recent coronary revascularisation/evaluation

- If CABG/angioplasty in the last 5yrs and no new symptoms → proceed
- If recent invasive evaluation <2yrs and symptoms stable → proceed
- Recent evidence suggests preop percutaneous coronary investigation/intervention of no benefit to outcome except in acute coronary syndromes
Angioplasty/stents

- Recent percutaneous coronary intervention is the anaesthetists biggest problem
- If anything recent PCI increases perioperative risk over medical optimisation
- Drug eluting stents and bare metal stents high risk of rethrombosis if antiplatelet agents ceased
PCI without stent

- Delay surgery 2-4 weeks after angioplasty
- Continue aspirin therapy
PCI – Bare metal coronary stents

• Stent thrombosis most common in the first 2 weeks
• Rare after 4-6 weeks when endothelialisation has occurred
• Delay surgery 4-6 weeks
• Can prob cease clopidogrel after 6 weeks
• Continue aspirin
PCI – drug eluting stents

- Late thrombosis can occur esp if antiplatelet agents ceased
- Do not cease clopiogrel in the first 12mths
- Subsequently consult with cardiologist, continue if possible, restart asap
- Continue aspirin
Angioplasty/stents

• Should not stop antiplatelet therapy within 12mths of a DES and minimum 1mth for a bare metal stent
• Preferable to continue aspirin
• Do not cease antiplatelet therapy in these pts without consultation with cardiologist
Perioperative medical therapy

• Still only a few decent trials for β blockers
• Continue therapy in those already on them – this is the only class 1 recommendation
• If started days or weeks before, aiming at a HR 50-60 may reduce the risk of MI and death in patients undergoing major vascular surgery
Preoperative chest XRay

- What are you looking for
- Who will look at the xray and follow up
- Will it affect anything
Preoperative EGG

• Probably not much more predictive value for periop cardiac events than risk factors elicited by clinical history
• AHA recommends for pts with at least 1 clinical risk factor undergoing vascular surgery
• May be useful for pts with intermed risk factors
• Not recommended in asymptomatic pts undergoing low risk sx
Preoperative bloods

- Surgery-specific
- Medical indication eg renal function, coags
- Gp and hold
Preop noninvasive stress testing

- Pts with active cardiac conditions as per AHA guidelines
- 3 or more clinical risk factors and poor functional capacity undergoing vascular (and maybe intermed risk surgery) if it will change management
Preop assessment of LV function

- Pts with dyspnoea of unknown cause
- Current or prior heart failure with worsening dyspnoea or other change in clinical status
Anticoagulation

- Usual risk vs benefit scenario
- Superficial surgery – continue
- Intermediate or high risk of bleeding or intermediate/high risk of thromboembolism then arrange cover with heparin or LMWH
- No clear guidelines
- Consult with specialist
Obstructive Sleep Apnoea

- Common disorder 2-6% pop, approx 80% men and 93% women don’t know they have OSA
- Significant periop morbidity mainly hypoventilation/hypoxia/hypertension
- Triad of daytime sleepiness, snoring, observed apnoeas
STOP questionnaire

• Snoring
• Tiredness during day
• Observed apnoea
• Pressure high

• Sensitivity 65/74/79% for mild/ mod/severe OSA
STOP-BANG

• BMI >30
• Age
• Neck size >40cm
• Gender male

• Sensitivity 83/92/100% for mild/mod/severe
OSA screening and diagnosis

- Polysomnography
  - Home nocturnal oximetry
  - Questionnaire
Other considerations

• Airway
• Pregnancy testing
• Routine medications – I generally continue most
• Smoking
• Pain management plan
Case discussions?
36 yo male for UPPP and tonsillectomy

• DOSA (day of surg admission)
• Met on ward with wife and baby girl (birthday)
• BMI 36
• Smoker
• OSA
• Testicular ca 10yrs prior Rx ???????????
• Busy busy busy