Post-operative management after

OPEN INFRA / JUXTA-RENAL AORTIC SURGERY

e.g. open AAA repair, aorto-bifemoral graft

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CARDIOVASCULAR RISK

Issue

- Pre-existing coronary artery disease is common.
- Haemodynamic change, especially tachycardia, may result in coronary plaque rupture.
- Patients with arterial disease tolerate hypovolaemia poorly.
- A hypercoagulable state usually develops post-operatively.

Targets

- **5 lead ECG** monitor with ST segment alarms on (alarm range -1.0 mm to +1.0 mm for II and V5).
- **12 lead ECG** on arrival to recovery, if ST segment alarm on monitor or patient complains of chest pain.

- Aim **HR <80**. If patient is on a beta-blocker, maintain beta blockade. Treat hypotension by other means - omit other anti-hypertensive drugs, give fluid / vasopressor. Give beta blocker NG if oral route not available. NG beta blockers may be poorly absorbed - if HR >80 switch to IV route (e.g. atenlolol 5mg IV once daily, omit if HR <60).
- Aim **MAP >65** (or >70 if coronary disease - see Trak handover). Fluid challenges preferable to vasopressor.
- Aim **SBP <180**. Use oral / IV agents to lower BP if necessary.
- Keep **Hb >70 g.L^{-1}** (or >80 g.L^{-1} in patients with coronary artery disease).

- Continue **aspirin** and **LMWH** therapy provided there is no severe coagulopathy or significant bleeding.
- Continue **statin** therapy (give NG if oral route not available) to stabilise coronary plaques.
- Normalise electrolytes, particularly **potassium** & **magnesium** to reduce risk of arrhythmias.

HAEMORRHAGE / HAEMATOLOGY

Issue

- Bleeding, anaemia, thrombocytopenia and coagulopathy can occur, particularly in the first few hours after surgery.
- Early identification & treatment of coagulopathy can prevent significant post-operative haemorrhage.
- Subsequently thrombotic complications become more common e.g. MI, PE.

Targets

All patients:

- Immediate post-op bloods (usually sent from recovery) should include FBC & coagulation screen.
- Anaesthetist may request post-op ClotPro / ROTEM depending on clinical context.

First 48 hours post-op:

- **Aim platelet count ≥70 x 10^{9}.L^{-1}.** Treat with platelets. Discuss with haematology if platelets persistently low.
- **Aim INR ≤1.5.** Treat with FFP.
- **Aim fibrinogen ≥1.5.** Treat with FFP.
- **APTT ratio** may be moderately elevated post-op because heparin is given in theatre. Treatment of an isolated moderately raised APTT ratio (e.g. 2-3) is not required unless there are clinical signs of significant bleeding.

Significant ongoing bleeding suspected:

- Contact on call vascular surgeon urgently.
- Use serial ClotPro / ROTEM assays to rapidly assess coagulation. Treat as per ClotPro / ROTEM protocol.
- Ensure formal lab FBC & coagulation screen also sent.

RESPIRATORY

Issue

- Pre-existing lung disease is common.
- Risk of post-operative atelectasis / pneumonia.

Targets

- Aim **SpO2 94-98%**.
- Optimise analgesia (usually thoracic epidural) to permit deep breathing & coughing, mobilise early.

RENAL / FLUIDS

Issue

- Pre-existing renal impairment is common.
- If a supra-renal aortic cross clamp is used, there is a period of renal ischaemia.

Targets

- Patients without established oral intake should receive maintenance IV fluid, not >30 ml/kg/day.
- If sustained urine output of < 0.5 ml/kg/hr check U&E, give IV fluid challenge & reassess.

FEED

Issue

- Ileus common. However, early return to normal diet is beneficial. NG tubes usually avoided.

Targets

- See Trak handover for plan.
- If in doubt sips only & check with surgeons.
- **Aim blood glucose 6-12 mmol/L.**

VTE

Targets

- **Low molecular weight heparin** (prophylactic dose as per critical care guidelines).
- 1st dose 6 hours post op unless otherwise specified in Trak handover, or significant bleeding suspected.
- **No TEDS or calf compression boots**, unless explicitly stated in Trak handover.

WOUNDS

Targets

- **Mepore dressing**: leave intact for 2 days.
- **Blue swabs & tegaderm**: leave intact for 5 days.
- If strikethrough more than a very small amount change dressing & inform surgeon.
- Daily observation for haematoma / infection.

LEGS

Issue

- Distal ischaemia may develop postoperatively due to graft thrombosis or embolism.

Targets

- **Check leg pulses, temperature & colour** every hour for 6 hours post-op then every 6 hours.
- Some pulses may not be assessable - confirm with vascular surgeons.

Dr I Young / Dr A Ruthven / Vascular Surgical Consultant Group. Published June 2022. Review June 2027.