ANTICOAGULATION FOR CAVOPULMONARY AORTOPULMONARY SHUNTS, VALVES AND FONTANS

Check APTT (from unheparinised line if possible) at 2 hours post-op and ensure it is near normal before commencing heparin (sometimes there is residual heparin effect from theatre). Do not commence heparin if there are excessive drain losses.

Modified Blalock-Taussig Shunts or Central Shunts
i.e. any child with a gortex shunt from systemic to pulmonary artery

Initial Treatment
- Low dose heparin (10u/kg/hr) for all shunt sizes. Start the infusion 2-4 hours after arrival in PICU provided that bleeding is not an issue and following an APTT check as above.
- Check APTT 4 hours after starting infusion and adjust as per protocol.

Long-term Treatment
- Start aspirin (3-5mg/kg/day). May start early post operatively on instructions of surgeon otherwise started next day. It is preferably but not essential that feeding has commenced prior to starting aspirin.
- Stop heparin infusion after the 2nd dose of aspirin unless CVL in situ.

Bidirectional Cavopulmonary Shunt (BDG)

Initial Treatment
- Low dose heparin (10u/kg/hr) for
  1. All children with any central line following a BDG – (until CVL removal).
  2. Patients with low cardiac output and prolonged intensive care course.
  3. Patients with bilateral bidirectional Glenn shunts.

Long-term Treatment
- Low dose aspirin (3-5mg/kg/day).

Extra Cardiac Fontan

Initial Treatment
- Start low dose heparin infusion 2-4 hours post op in PICU.
- Start Warfarin on the day pacing wires are removed.
- Stop low dose heparin infusion 2 hours prior to wire removal if required (refer to PICU Pacing Wire removal protocol).
- Some Fontan children (clarify with surgeon or cardiologist) may be kept on low dose heparin infusion until the warfarin is therapeutic (INR 2-2.5).

Long-term Treatment
- Anticoagulation with warfarin aiming for INR of 2-2.5 (early postop).
- Initial post op dose = 0.1mg/kg.
- NB: Royal Children’s Hospital “Drug Doses” book says 0.2 mg/kg but this will over anticoagulate many children post Fontan surgery
- By discharge (approx 10 days post op) aim for an INR 2.0 -3.0.
Anticoagulation for Valve Surgery – Aspirin / Warfarin Policy

Mitral Valve Repairs
- Short term low dose aspirin 3-5mg/kg/day (maximum 75mg/day).
- Start day one post op, take for 6-12 weeks then stop.

Homograft Valves (in either aortic or pulmonary position)
- No aspirin unless specific surgical request

Porcine/Bovine Tissue Valves in any position (Contegra, Mosaic, Freestyle, Hancock)
- Low dose aspirin 3-5mg/kg/day (maximum 75mg/day) from day one post op
- Duration: long term

Mechanical Valves (St Judes, Medtronic-Hall, On-X Carbon)

Initially
- Warfarin started on the evening of day one (day after operation).
- If unstable, selective use of low dose heparin may occur.
- Cautious dosing if liver impairment, on amiodarone or other competitive drugs, or if post operative bleeding was an issue (i.e. For 50-70 kg adolescent give maximum of 5mg day 1, 3 mg day 2 and 3 mg day 3).
- Aim for INR 2.0 to 3.0 initial two weeks postoperatively (later may be higher).

Long term management
- INR = 2.5 to 3.5 for Aortic and Mitral valves.

* NB. Low dose aspirin may be added at the cardiologist’s discretion/preference particularly in patients with mechanical mitral valves.

Aspirin instructions for home

All aspirin can be stopped for flu-like illness or chickenpox except for Norwoods with small shunts.