Clinical Pathway

Transposition of the Great Arteries with Intact Ventricular Septum or with Ventricular Septal Defect

Starship Child Health

Exclusion criteria
TGA with DORV/Coarctation/ LVOTO/Pulmonary Stenosis

patient label here

Admission to NICU post delivery Day 1 of life

Clinical Care

- No UVC to preserve umbilical vein for septostomy
- 2 x IV leur required
- ECG monitoring
- BP
- Pre and post ductal saturations
  - Supplement oxygen and call cardiology team if Sp02 <70%
- Test required prior to septostomy
  - Echocardiogram
  - Capillary blood gas/lactate, Group and hold
- Newborn screening
- Staphylococcus aureus nasal swab

Medication Management

- Commence prostaglandin E1 at 10 nanograms/kg/minute as per Newborn Services Prostaglandin E1 Drug Protocol

Feeding/Fluid Management

- NBM until cardiology review and Echocardiogram completed

+/- Balloon Atrial Septostomy

- Refer to Management of Balloon Atrial Septostomy Newborn Services Clinical Guidelines

Stable → **Unstable**

Stable Infant NICU Care

Expected clinical status

- Pre-ductal saturation >75%
- Extubated
- No signs of increased work of breathing
- No inotropes
- Lactate is <4 and trending down

*** Infant does not meet all of the Expected Clinical Status above discuss transfer to PICU with the Cardiologist and Intensivist**

Medication Management

- Decision to discontinue Prostaglandin E1 infusion is made by the Cardiologist
  - If outside the hours of 0600-1500 wait until 0600 hrs the following morning to discontinue Prostaglandin infusion.
  - Recommence prostaglandin after consultation with Cardiologist if pre-ductal saturation persistently <70%

Feeding/Fluid Management

- Commence enteral feeding
- Support breastfeeding

Transfer to PICU

Care continues as per PICU guidelines

The infant deviates and resumes the pathway at day 0 post arterial switch repair

Day 2 to Day 4 of Life

Clinical Care

- Care continues a per Newborn Services Clinical Guidelines
- Remove IV leur and UVC access if infant has been stable off Prostaglandin for 24 hours

Cardiologist or Fellow to notify surgeon if

- Prostin recommenced or not stopped
- Deteriorating respiratory status
- NEC
- Sepsis
- Aminoglycoside has been commenced

Medication Management

- Review blood cultures if antibiotics have been commenced and stop antibiotics if cultures are negative at 48 hours
- Confirm bypass blood with blood bank

Feeding/Fluid Management

- Continue feeding and support breastfeeding

Pre-op checklist

Clinical Care

- Refer to Pre-op Cardiac Care Newborn Services Guideline if in NICU
- Surgical and anaesthetic consent/ensure parent availability and interpreter if required
- Anti-staph bundle of care
- ECG, CXR, FBC, U&E's, Group and Hold
- Confirm vitamin K given

Feeding/Fluid management

- NBM time confirmed

* *IV Fluids not routinely required*

PICU Care

Arterial Switch operation
Day 0 post-op

Day 0 post-op
PICU Care

Clinical Care
- Care as per PICU Post Cardiac Surgery Nursing Management Guideline
- Wean ventilation overnight for extubation in the morning

Medication Management
- Inotropes management as per PICU consultant
- Reduce and stop sedation to maintain SBS score of -1 to 0
- Reduce IV morphine infusion to maintain MAPS pain score of <4

Feeding/Fluid Management
- 50mls/kg/day/ fluid allowance

Open chest
- Care continues as per PICU guidelines
- The infant deviates and resumes pathway post chest closure

Day 1 post-op
PICU Care

Clinical Care
- Post-operative ECG

Ward round
- Remove LA line and chest drains if <2ml/kg drainage over the last 6 hrs
- CXR post chest drain removal
- Extubate
- Adjust Fi02 to maintain Sp02 >95%

Medication Management
- Reduce inotropes and discontinue over next 24hrs
- Stop IV morphine infusion post chest drain and start oral morphine
- Start
  - Regular paracetamol
  - IV Frusemide 1mg/kg once daily
  - Amiloride if creatinine < 50 and K+<5

Feeding/Fluid Management
- Enteral feed 5mls Q2h. Increase every 4 hours
- 70mls/kg/day fluid allowance
- Commence oral feeding/breastfeeding if tolerated

Delayed Extubation
- Reassess readiness to extubate every 2 hrs

Day 2 post-op
PICU Care

Clinical Care
- Remove CVL once off all inotropes for >6 hrs and stable
- Leave 1 x IV leur insitu
- Adjust Fi02 to maintain Sp02 above >95%
- Remove arterial line
- Remove indwelling urinary catheter
- Daily surgical wound review

Medication Management
- Aspirin for intramural coronaries or other at risk coronary anatomy
- Continue with oral morphine as required
- Regular paracetamol
- Continue diuretics

Feeding/Fluid management
- Increase fluid allowance to 100ml/kg/day
- Oral feeding / breastfeeding

Transfer to 23B Intensive Observation Area (IOA)

Day 2 post-op
23B Care

Clinical Care
- Continuous ECG monitoring
- 2 hourly BP
- Wean oxygen to achieve Sp02 >95%
- Daily weight/bed bath
- Change dressing/ECG electrodes
- Remove CVL if no longer required

Medication management
- Change IV frusemide to oral
- Regular paracetamol and PRN oral morphine

Feeding/Fluid management
- 100ml/kg /day/ fluid allowance
- Oral feeding/breast feeding if not commenced in PICU

Day 3 post-op

Clinical Care
- Transfer out of the IOA
- Continue with Sp02 monitoring if the infant is still on oxygen
- 4 hrly BP
- Discontinue ECG monitoring
- Daily weight/bed bath
- U's and E's
- Commence discharge education

Medication management
- Review analgesics
- Increase diuretics if the infant displays any of the following signs
  - Increased work of breathing
  - Enlarged liver
  - O2 dependence

Feeding/Fluid management
- Oral feeding/breastfeeding
- Fluid allowance to 120mls/kg/day

Day 4 post-op

Clinical Care
- Remove pacing wires if the infant meets the criteria. Refer to Cardiology Pacing Wire Removal Guideline
- Remove all dressings on dry wounds and apply appropriate dressing if required
- Remove IV access and discontinue ECG monitoring 4 hours post pacing wires removal
- Daily weight/bath
- Echocardiogram and CXR prior to discharge

Medication Management
- Discontinue oral morphine
- PRN paracetamol
- Continue oral diuretics

Feeding/Fluid Management
- Fluid allowance to 150ml/kg/day or allow full breastfeeding

Day 5 to day 6 post-op

Clinical Care
- Daily weight/ bath
- Continue with discharge education

Medication Management
- Discontinue diuretics if
  - RR <50
  - No supplemental oxygen required
  - No significant cardiac residues

** if residual VSD or LV or RV dysfunction discuss with Cardiologist*

Feeding/Fluid Management
- Full oral feeds established or feed on demand
- Remove naso gastric tube by post-op day 6

Day 7 post-op to Discharge and Discharge Criteria

Continue care as per Day 5 to day 6 post-op
Discharge criteria
- Oral feeding established (breast feeding preferred)
- Car seat trial
- Out-patient appointment booked
- Community nurse and referral
- Neurodevelopment referral
- Dry clean wound
- Medication education

Discharge to local hospital if the infant is cardiovascularly stable but has one of the following
- Requires on-going feeding support
- Has a remote home location
- Social factors
- Additional comorbidities

Post discharge Management

4 weeks post discharge
- ECG
- CXR
- Stop diuretics - if infant discharged with diuretics.

6 months post discharge
- ECG
- CXR
- Echocardiogram with visiting Paediatric Cardiologist - preferably with sedation.
  Return to Starship if inadequate images and sedated echo cannot be performed.

12 months post discharge
- Dobutamine stress echocardiogram
- Coronary CT scan under general anaesthetic.

Annual Paediatric Cardiologist review thereafter.

AUCKLAND DISTRICT HEALTH BOARD Te Toka Tumai

Starship Child Health

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