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

Date Pathway initiated: ____________________

Expected Length of Stay: 14 Days

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

Transfer to PICU

Care continues as per PICU guidelines

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

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

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

PICU Care

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*

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

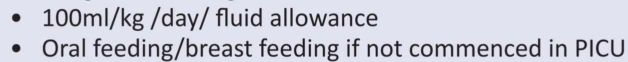
Transfer to 23B

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



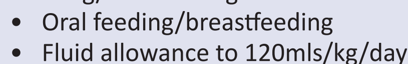
- 100ml/kg /day/ fluid allowance
- Oral feeding/breast feeding if not commenced in PICU

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



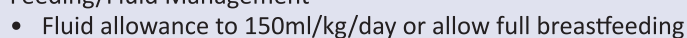
- Oral feeding/breastfeeding
- Fluid allowance to 120mls/kg/day

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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