Transposition of Great Arteries and Intact Ventricular Septum- pathway and management

Refer EARLY to KIDS NTS for advice - 0300 200 1100

TGA is a duct dependent critical congenital heart defect with a parallel circulation due to reversal of the outflow tracts (aorta and pulmonary artery). Oxygenation postnatally is reliant on mixing of oxygenated and deoxygenated blood via an inter-atrial communication, if there is an intact ventricular septum or a small VSD. Antenatally, the shunting across the atrial septum cannot be predicted with certainty, therefore one should prepare for a time critical transfer to BCH for septostomy. **This flow chart provides a pathway for the management of babies with antenatally diagnosed TGA with intact ventricular septum/ small VSD who may require an Atrial Septostomy**

Fetal cardiologists will inform if the fetus is on this pathway, if there is concern of mixing across the ventricular septum on antenatal scans.

Optimal delivery of the lady should be ≥ 39 weeks. Obstetric management of labour is not dictated by the fetal diagnosis. If caesarean section delivery is planned than this should be prioritised on the list.

On admission to hospital

The obstetrician or Midwife in charge of Delivery Suite will inform the NICU Nurse in charge/Consultant.

The Neonatal Consultant will **inform KIDS and NTS consultants by calling 03002001100**

A conference call will be set up with the following team members:

- KIDS consultant
- NTS consultant
- Cardiologist on call (who will communicate with the interventional team as required)
- PICU consultant on call

Cardiologist will inform theatres. Further updates would be given to decide the optimal time of delivery (if induction/ Caesarean section). At the time of delivery, the KIDS/ NTS team will aim to be present, with KIDS/ NTS consultant, along with the NICU team led by Neonatal Consultant.

Prepare in advance of Delivery

- ☐ 2 cannulation sets / Double/triple lumen UVC/ Intra-osseous access in the challenging access situation
- ☐ On estimated fetal weight following drugs and infusions to be made
- ☐ Prostaglandin infusion
- ☐ Morphine bolus and infusion
- ☐ Rocuronium bolus and infusion
- ☐ 10% glucose for maintenance
- ☐ Adrenaline infusion (for peripheral administration)
- ☐ Vitamin K
- ☐ First line antibiotics (if sepsis risk)

Summary sheet of the baby details

·Antenatal findings
·Gestation
·Estimated weight
·Parent details (name, NHS number and contact phone numbers)
·Baby identification bands

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At delivery, NICU team will work collaboratively with the KIDS –NTS team to help with resuscitation and stabilisation, with clear roles and responsibilities.

The baby will be resuscitated as per neonatal life support guidelines.

Stable babies with normal breathing and **SpO2 >75% do not require immediate intubation** and can be transferred to PICU on prostaglandin infusion for on-going management.

If pre-ductal SpO2 <70% after the first 5 minutes, despite increasing oxygen to 100% - proceed as per the following flowsheet

Airway/Breathing

Airway:
- Intubate (ideally with rocuronium and morphine bolus)

Breathing:
- Ensure gentle ventilation. Avoid hyperventilation (can increase pulmonary blood flow). **Target preductal SpO2 75-85%.**
- Do not do an X-Ray to confirm lines/ ET position as that can be confirmed in PICU/ Theatres once time critical transfer done.

Circulation

Circulation:
- Cannulate with 2 intravenous access (2 cannulas/ double/ triple lumen UVC).
- Start Prostaglandin infusion (5-50 ng/kg/min)
- Adrenaline infusion (0.01- 0.2 micrograms/kg/min)
- Antibiotics **(not obligatory if no risk factors for sepsis)**
- Give Vitamin K

Disability

Disability:
- Give Morphine and Rocuronium bolus
- Start Morphine and Rocuronium infusion/ transfer on boluses (Rocuronium/ Morphine)

Exposure

Exposure:
- Maintain Normothermia

Family

Family:
Inform parents about the high-risk transfer

Transfer Cat 1 (on blue lights) to PICU for assessment or diversion to theatres if saturations <70% despite invasive ventilation. Plan alternative with Interventional cardiologist if Cath Lab not available (eg, hybrid Room 4) to perform atrial septostomy.

KIDS Clinical guideline for TGA V.2 Anju Singh, Cecilia Perez Fernandez & Anna Seale

Author - AS/RN Dec '25. Review Dec '29