CLINICAL PATHWAY:
Postnatal Management Based on Prenatal Risk for Coarctation of the Aorta (ARCH)

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: Newborns born at Hartford Hospital suspected of isolated coarctation of the aorta based on fetal echocardiogram (antenatal risk for coarctation); clinically stable
Exclusion Criteria: Any signs of clinical instability (*respiratory distress, acidosis, rising lactate, poor pulses, poor perfusion, lower and upper extremity blood pressure discrepancy*)

Look at mother's medical record in Connecticut Children's EPIC for last cardiology note or ECHO report to determine ARCH score **(Appendix A)**

ARCH score

Level I: High Suspicion

- Admit to NICU
- Order STAT Cardiology consult AND page on-service cardiologist
- Order STAT echocardiogram

Access:
- Insert umbilical lines

PGE1 0.01 mcg/kg/min:
- Order prior to delivery (downtime procedures) to start ASAP

Labs & Monitoring:
- Pre/post sats
- Q2hr 3 or 4 extremity BPs
- Q2hr femoral pulse check
- Q2hr ABG, lactate

Feeds:
- NPO
- IVF @ 100 ml/kg/day

Level II: Moderate-High Suspicion

- Admit to NICU
- Order routine Cardiology consult AND page on-service cardiologist
- Order routine echocardiogram

Access:
- Insert umbilical lines

PGE1 0.01 mcg/kg/min:
- Order at the time of delivery to be available at bedside

Labs & Monitoring:
- Pre/post sats
- Q2hr 3 or 4 extremity BPs
- Q2hr femoral pulse check
- Q4hr ABG, lactate

Feeds:
- NPO
- IVF @ 100 ml/kg/day

Level III: Moderate-Low Suspicion

- Admit to NICU
- Order routine Cardiology consult
- Order routine echocardiogram

Access:
- Insert PIV

PGE1:
- Do not order unless clinically indicated

Labs & Monitoring:
- Pre/post sats
- Q4hr 3 or 4 extremity BPs
- Q4hr femoral pulse check
- Q8hr ABG, lactate

Feeds:
- Ad lib PO

Level IV: Low Suspicion

- Admit to Hartford Hospital Newborn Nursery
- Contact on-service cardiologist regarding timing of consultation (inpatient vs outpatient)

Access:
- None indicated

PGE1:
- Do not order unless clinically indicated

Labs & Monitoring:
- Pre/post sats
- qShift 3 or 4 extremity BPs
- qShift femoral pulse check

Feeds:
- Ad lib PO

If at any time the patient becomes clinically unstable, exit pathway and call on-service cardiologist to discuss initiation of prostaglandins.*

**Examples of a clinical instability include: respiratory distress, acidosis, rising lactate, poor pulses, poor perfusion, lower and upper extremity blood pressure discrepancy*

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Antenatal Risk for Coarctation – for newborns born at Hartford Hospital (ARCH score)
Management recommendations for suspected *isolated* coarctation of the aorta based on fetal echocardiogram

- All recommendations refer to management/monitoring for *PRIOR* to cardiology consultation in *clinically stable* patients
- Clinically stable patients have *none* of the following*:*
  - respiratory distress, acidosis, poor pulses, poorly perfused extremities, rising lactates or BP discrepancy.
- Any clinical concerns, including the above symptoms, require notification of the on service/on call cardiologist for further discussion.
- The following recommendations only apply prior to consultation. Further management will be based on consult findings.

Level	Fetal findings - examples	Admit	Umbi Lines	PGE1	Labs and monitoring	Feed	Consultation
I High suspicion	• Small aortic isthmus with concern for near-interruption. • Flow reversal in the arch • Hypoplastic aortic valve or ascending aorta	NICU	Yes	Order prior to delivery (downtime procedures) to start ASAP	- Pre/post sats - q2h 3 or 4-extrm BP - q2h fem pulse check - q2h ABG, lactate	NPO IVF@100ml/kg/d	Call for immediate consult. Echo to be done ASAP.
II Mod-hi suspicion	• Antegrade flow across the arch Multiple prenatal visits demonstrating: • Great vessel/SLV discrepancy • Ventricular size/AVV discrepancy • Small aortic isthmus • Posterior shelf • Diastolic runoff in the dAo	NICU	Yes	Order PGE at the time of delivery to be available at the bedside	-- Pre/post sats - q2h 3 or 4-extrm BP - q2h fem pulse check - q4h ABG, lactate	NPO IVF@100ml/kg/d	Order routine consultation. Notify cards attending. Echo to be done during next available echo lab business hours or within 12 hrs on weekends.
III Mod-lo suspicion	• Antegrade flow across the arch • Significant great vessel or ventricular size discrepancy • Normal sized aortic valve and transverse arch	NICU	No	Do not order unless clinically indicated	- Pre/post sats - q4h 3 or 4-extrm BP - q4h fem pulse check - q8h ABG, lactate	Ad lib PO	Order routine consultation Notify cardiology attending Echo to be done within 24 hours
IV Low suspicion	• Antegrade flow across the arch • Normal arch dimensions • Great vessel or ventricular size discrepancy seen at late gestation only	WBN	No	Do not order unless clinically indicated	- q shift: Pre/post sats 3 or 4-extrm BP Fem pulse check	Ad lib PO	At discharge

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