Clinical Pathways

Newborn Management of Prenatally Diagnosed Tetralogy of Fallot and Risk of Ductal Dependency (TET score)

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What is a Clinical Pathway?

- An evidence-based guideline that decreases unnecessary variation and helps promote safe, effective, and consistent patient care.
• The diagnosis of tetralogy of Fallot carries a wide range treatment possibilities based on the detailed cardiac anatomy.

• Neonates that are ductal dependent for adequate pulmonary blood flow can be at high risk after delivery if not immediately recognized.

• Babies that are not ductal dependent may be discharged home with normal oxygen saturations and elective surgery planned at several months of age.
Objectives of pathway

• Ensure maximal safety for babies with potentially ductal dependent Tetralogy of Fallot
• Optimize the use of echocardiogram and available resources
• Decrease ambiguity and variability in evaluation and treatment of newborns with prenatally diagnosed Tetralogy of Fallot in the Neonatal Intensive Care Unit or Well Baby Nursery
• Minimize unnecessary separation of newborn babies from their mothers
Why is this pathway necessary

• Ductal dependency in tetralogy of Fallot cannot be reliably diagnosed on prenatal evaluation, but there are findings on fetal echocardiogram that increase suspicion
• Certain features or combinations of features on our fetal evaluation enable us to predict level of risk for ductal dependency
• Ductal dependency, if left untreated can lead to mortality and morbidity
• In some cases, ductal dependency cannot be reliably diagnosed until ductal closure occurs after birth
• In other cases, it is clear that a closure of the ductus will lead to significantly decreased pulmonary blood flow
• Invasive procedures, separation of babies from their mothers, and interruption of feeding practices should be minimized when risk of ductal dependency is low
• Based on our risk assessment, we are able to guide immediate management of newborns after delivery for optimal care.
This is the Newborn Management of Prenatally Diagnosed Tetrology of Fallot and Risk of Ductal Dependency (TET score) Clinical Pathway.

We will be reviewing each component in the following slides.
Mothers of newborns with a prenatal diagnosis of Tetrology of Fallot will have a chart within Epic. Providers should start by reviewing the mother’s chart and the TET score.

See appendix A for the TET Score.
Appendix A: TET Score

- Describes the antenatal risk of ductal dependent pulmonary blood flow in newborns.
- A score of I-IV assigned prenatally based on fetal echocardiogram

TET score directs management of a clinically stable neonate PRIOR to Cardiology consultation.
- Further management will be based on findings at the time of consult
Level I: High suspicion of ductal dependence

Neonates are admitted to the NICU with STAT Cardiology consultation

PGE is initiated ASAP through an Umbilical line
- PGE should be ordered prior to delivery
Level II: Moderate-High suspicion of ductal dependence

Neonates are admitted to the NICU with STAT Cardiology consultation

Umbilical line is placed and PGE is ordered at the time of delivery to be kept at the bedside
Level III: Moderate-Low suspicion of ductal dependence

Neonates are admitted to the NICU with routine Cardiology consultation.

A peripheral IV is placed instead of Umbilical line. PGE is not ordered unless it is clinically indicated.
Level IV: Low suspicion of ductal dependence

These neonates may be admitted to the Hartford Hospital Newborn Nursery.

Timing of consultation will be determined by discussion with on call Cardiologist

They require no access and no PGE unless clinically indicated.
Should the patient become unstable at any time, exit the pathway and discuss with Cardiology.
Quality Metrics

- Number of patients managed with the pathway
- Percentage of patients on the pathway for which the pathway was followed appropriately
- Number of patients requiring surgery for Tetralogy of Fallot prior to discharge
  - Stratified by TET risk score
- Number of patients who had umbilical lines placed or who were made NPO who did not require surgery prior to discharge
  - Stratified by TET risk score
- Number of patients who had prostaglandins started who did not require surgery prior to discharge
  - Stratified by TET risk score
- Length of stay (days)
- Number of echocardiograms performed either prior to discharge or prior to surgery
Pathway contacts

• Alicia Wang, MD
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About Connecticut Children’s Clinical Pathways Program

Clinical pathways guide the management of patients to optimize consistent use of evidence-based practice. Clinical pathways have been shown to improve guideline adherence and quality outcomes, while decreasing length of stay and cost. Here at Connecticut Children’s, our Clinical Pathways Program aims to deliver evidence-based, high value care to the greatest number of children in a diversity of patient settings. These pathways serve as a guide for providers and do not replace clinical judgment.