1.0 Introduction

- Duodenal atresia is a congenital obstruction of a portion of the lumen of the duodenum of the small intestine. It is one of the more common intestinal anomalies in pediatrics, occurring in approximately 0.9 infants per 10,000 live births worldwide. The majority of cases are isolated and with surgical correction, have an excellent prognosis. However, outlook is also determined by pre and post-operative management, along with the ability to identify and manage the thirty percent of infants with associated anomalies.

Target Users

- Any individuals who may be involved in the care of neonates with duodenal atresia, including: Registered Nurses (RNs), Nurse Practitioners (NP), Physicians, Surgeons, Dietitians, Registered Respiratory Therapists (RRT), Social Workers, and the NICU parent liaison.

Target Patient Population

- Neonates admitted to the NICU at the Hospital for Sick Children with a known or presumed diagnosis of uncomplicated duodenal atresia, and a gestational age of greater than 36+0 weeks.
- Neonates born before 36+0 weeks’ gestational age, those anomalies associated duodenal atresia (trisomy 21, annular pancreas, additional intestinal atresia, etc.), and those with other complications that may affect their care trajectory, should not have their NICU hospitalization guided by this pathway.

Implementation Plan

- Key stakeholders (RNs, NPs, neonatologists, and surgeons) were involved in the development, advocacy, and dissemination of this clinical pathway.
- Implementation was discussed in detail during a Neonatal Surgical Interest Group (NSIG) meeting. It was decided that dissemination would occur through email communication, screen savers used on unit computers to advertise the pathway, engaging and educating the clinical support nurse group on its use, and using members of NSIG to conduct bedside in-services on the pathway with RNs and physicians.
- The pathway will be posted at the bedside of every neonate admitted with duodenal atresia to remind staff of pathway utilization.
- The Neonatal NP Group will advocate for pathway utilization and remind the team to review it daily during bedside rounds.
Facilitators to Implementation

- Ability to better standardize the approach to care of infants with duodenal atresia to allow these patients and their families to experience a smoother hospitalization and transition out of intensive care.
- Parents will be engaged in the process of their child’s care by having the pathway posted at the bedside to facilitate discussion of care between parents and providers.

Barriers to Implementation

- Adoption by staff due to lack of familiarity with the pathway. This will be overcome through education and promotion of the pathways use during bedside rounds.

Potential Impacts

- Decreased length of stay in the NICU
- Improve patient safety through streamlined care
- Enhance the parent experience by providing some anticipatory guidance on the trajectory of their child’s care.

2.0 Isolated Duodenal Atresia Neonatal Care Pathway (Gestational age ≥ 36 weeks)  

<table>
<thead>
<tr>
<th>Isolated Duodenal Atresia Neonatal Care Pathway (Gestational age ≥ 36 weeks)</th>
<th>DAY 1-4 ADMISSION</th>
<th>DAY 2 - 3 POST ADMISSION</th>
<th>DAY 3 - 5 POST ADMISSION</th>
<th>DAY 5 - 7 POST ADMISSION AND BEYOND</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>Provide maximal supportive care</td>
<td>Provide required supportive care</td>
<td>Provide required supportive care</td>
<td>Await return of bowel function</td>
</tr>
<tr>
<td><strong>Mechanisms &amp; Actions</strong></td>
<td>Decompression of gastrointestinal (GI) tract</td>
<td>Operative repair</td>
<td>Fluid management as per NICU Pre and Post operative Fluid Management Electrolyte</td>
<td>Start enteral feed as tolerated</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Initiate enteral feeds</td>
<td>Start enteral feeds</td>
<td>Assess and provide analgesia as required</td>
<td>Start parenteral nutrition (FIR)</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Initiate parenteral nutrition (FIR)</td>
<td>Determine timing of NG PCC insertion</td>
<td>Continue to monitor and replace NGT drainage</td>
<td>Start moderate (≥ 2 L/day) fluid intake</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Assess and provide analgesia as required</td>
<td>Administer antibiotics per surgeon recommendation</td>
<td>Administer antibiotics</td>
<td>Administer antibiotics</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Assess and provide analgesia as required</td>
<td>Monitor renal function</td>
<td>Administer antibiotics</td>
<td>Administer antibiotics</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Monitor renal function</td>
<td>Continue to monitor and replace NGT drainage</td>
<td>Administer antibiotics</td>
<td>Monitor blood glucose and electrolytes</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Continue to monitor and replace NGT drainage</td>
<td>Administer antibiotics</td>
<td>Monitor blood glucose and electrolytes</td>
<td>Monitor blood glucose and electrolytes</td>
</tr>
<tr>
<td><strong>Action Management</strong></td>
<td>Administer antibiotics</td>
<td>Monitor blood glucose and electrolytes</td>
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<td><strong>Action Management</strong></td>
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2.0 Isolated Duodenal Atresia Neonatal Care Pathway (Gestational age ≥ 36 weeks)  

**Printable version**

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3.0 Related Documents
- Neonatal Post Operative Pain Guidelines
- Respiratory Management of Neonates with Gastrointestinal Abnormalities (NICU)

4.0 References

5.0 Guideline Group and Reviewers

Guideline Group Membership
- Neonatal Surgical Interest Group
- Hazel Pleasants-Terashita, Nurse Practitioner, NICU
- Stephanie Bernardo, Nurse Practitioner, NICU
- Nicole Da Silva, Nurse Practitioner, NICU

Internal Reviewers
- Christopher Thomlinsion, MD
- Kyong Soon Lee, MD
- Christine Elliott, RN Quality Leader
- General Surgery Team
- NICU QM Committee
- Quality Management

Attachments: Duodenal Atresia Pathway July18.pdf