A RETROSPECTIVE REVIEW OF ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY

PERFORMANCE IN THE PEDIATRIC POPULATION IN A COMMUNITY HOSPITAL SETTING

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PROBLEM
There is limited published data on ERCPs performed in the pediatric population, however, hospitalizations for adolescent pancreaticobiliary disease are on the rise.1,2

BACKGROUND
Endoscopic retrograde cholangiopancreatography (ERCP) is an advanced endoscopic procedure in which a side-viewing endoscope and fluoroscopy are used to endoscopically visualize the biliary system and perform necessary interventions. Due to the relative infrequency of cases within the pediatric population, non-pediatric gastroenterologists have historically performed the majority of ERCP within the pediatric population.3,4

While prior research has examined the safety and efficacy of adult-trained endoscopists performing ERCP in the pediatric population, there remains limited data for the establishment of specific guidelines in the setting of choledocholithiasis, highlighted in the recent 2019 American Society for Gastrointestinal Endoscopy (ASGE) guidelines.3,5,6,7,8,9

Furthermore, there are no current standardized pediatric-specific training or assessment tools in place for training gastroenterology fellows.11

OBJECTIVES
• Identify and describe cases of ERCP performed in the pediatric population within the Advocate-Aurora Health (AAH) system.
• Describe the outcomes of pediatric ERCP cases both with and without gastroenterology fellow involvement.

METHODS
The AAH electronic health record database was searched for all cases of ERCP performed on patients under the age of 18 from January 1st, 2010 to July 16th, 2021 by an adult-trained gastroenterologist.

• Patients were identified using the current procedural terminology billing code for ERCP.
• Only patients aged 18 and under were included in our review.
• Cases were analyzed for presenting symptoms, presenting imaging findings, laboratory findings, ERCP findings, post-ERCP complications, and outcomes including post-ERCP cholecystectomy.
• Patient demographics were analyzed and described.
• Subgroup analysis was performed on cases with gastroenterology fellow participation.
• Statistical analysis with Fisher’s exact test was performed on post-ERCP pancreatitis cases between those with and those without gastroenterology fellow involvement.

RESULTS
In total, 33 cases of ERCP performed by adult-trained gastroenterologists in the pediatric population were identified and reviewed. 10 cases involved a gastroenterology fellow.

Most Common ERCP Indication: Suspected Choledocholithiasis
Avg. Age 14.9 +/- 3 years 81.8% female

Initial Total Bilirubin for Pediatric Patients who underwent ERCP

<table>
<thead>
<tr>
<th>Total Bilirubin (mg/dL)</th>
<th>Number of Patients</th>
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<tbody>
<tr>
<td>0 - 1</td>
<td>7</td>
</tr>
<tr>
<td>1.01 - 2</td>
<td>10</td>
</tr>
<tr>
<td>2.01 - 4</td>
<td>5</td>
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<tr>
<td>4.01 - 6</td>
<td>7</td>
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<tr>
<td>&gt; 6.0</td>
<td>3</td>
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</tbody>
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Race/Ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Number of Patients</th>
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</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>17 cases (52%)</td>
</tr>
<tr>
<td>African American</td>
<td>5 cases (15%)</td>
</tr>
<tr>
<td>Native American</td>
<td>5 cases (15%)</td>
</tr>
<tr>
<td>N/A (5 cases)</td>
<td>15%</td>
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<tr>
<td>Other 1 case</td>
<td>3%</td>
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Avg. BMI 25.9 +/- 6 kg/m²

Post-ERCP Pancreatitis
4 Cases (12.1%) 0 Deaths
3 involved GI Fellows

CONCLUSIONS
• Most pediatric patients who underwent ERCP within the AAH system were Caucasian females with an elevated BMI.
• There was no statistically significant association between age-adjusted BMI and post-ERCP complication rate.
• Post-ERCP pancreatitis occurred infrequently with a higher rate amongst cases with GI fellow involvement (30% vs 4.3%).
• Continued surveillance and future prospective studies are recommended.

REFERENCES