

Pouchitis in Children with Ulcerative Colitis

Pouchitis is a known complication after ileal-pouch anal anastomosis (IPAA) performed for ulcerative colitis (UC); however, the incidence of pouchitis and the associated risk factors for progressing to pouchitis in children are unclear. The authors attempted to answer this question using the IQVIA Legacy PharMetrics® Adjudicated Claims Database which is a de-identified longitudinal claims database that tracks patient data from U.S. commercial insurance. Pediatric patients (defined as less than 18 years old) were included in the study if they had commercial health insurance for at least 6 months and if they had undergone IPAA for UC between 2007 and 2015. Pouchitis was defined by standard clinical definitions. The study's primary outcome was to determine the incidence of pouchitis in the two years following IPAA while secondary outcomes consisted of determining the incidence of just one episode of acute pouchitis occurring, the incidence of chronic pouchitis occurring (defined as recurrent episodes of pouchitis), and the frequency of patients having their diagnosis changed to Crohn's disease (CD) after IPAA. Risk factors for pouchitis (including primary sclerosing cholangitis and *Clostridioides difficile* infection) were evaluated as were medications used up to 6 months prior to colectomy.

The database had 79,665,591 patients in total, and 68 pediatric patients with IPAA were identified with a mean age of 13.1 ± 3.8 years (43% female). A total of 37 patients (54%) developed pouchitis during the study period with 22 patients (32%) having a diagnosis of acute pouchitis and 15 patients (22%) having chronic pouchitis. There was no statistical difference in age, sex, medication use, incidence of primary sclerosing cholangitis, incidence of *C. difficile*, or geographic location of patients when patients with pouchitis were compared to patients without pouchitis. Patients with pouchitis were statistically more likely to have an increased number of outpatient clinic visits after IPAA (21.8 vs. 10.2; $P = 0.006$) as well as an increased number of hospitalizations after IPAA (46% vs. 23%; $P = .045$) compared to patients with no pouchitis. There was an increase in the number of emergency room visits as well for patient with pouchitis compared to the patients with no pouchitis, but the difference was not significant.

Six patients (9%) ended up with a final diagnosis of CD after IPAA, but there was no statistical difference in this diagnosis between patient with and without pouchitis. Pediatric patients with pouchitis had significantly higher mean healthcare costs at year 1 (\$27,489 versus \$8032; $P = 0.001$) and year 2 (\$27,699 versus \$6058; $P = 0.003$) after IPAA compared to patients without pouchitis.

This study suggests that the rate of pediatric pouchitis after IPAA is comparable to that of the adult pouchitis rate after IPAA. No significant risk factors were associated with the development of pediatric pouchitis although patients with pouchitis did have significantly higher health care costs. Further work is needed to determine what additional risk factors can predict pouchitis in children, and the relatively high rate of patients being diagnosed with CD after IPAA suggests a clearer diagnosis of UC is still needed in pediatric patients with UC after IPAA.

Cowherd E, Egberg M, Kappelman M, Zhang X, Long M, Lightner A, Sandler R, Herfarth H, Barnes E. The cumulative incidence of pouchitis in pediatric patients with ulcerative colitis. *Inflammatory Bowel Diseases* 2022;28: 1332-1337.

Pediatric Battery Ingestions and Emergency Room Visits

Pediatric battery ingestions are common reasons for emergency department (ED) visits which is an important clinical problem to consider as button battery ingestions are associated with severe morbidity as well as mortality. A prior study in 2012 demonstrated a significant increase in the rate and number of pediatric battery-related ED visits between 1990 to 2009 in which 75% these visits were due to injuries associated with battery ingestions and 84% of these injuries specifically involved button batteries. Thus, the authors of this study wanted to evaluate pediatric ED visits for button battery complications from 2010 to 2019 and to compare these findings to the prior study. The data for this study came from the National Electronic Injury Surveillance System (NEISS) which tracks consumer product in the United States. The authors used NEISS code 884

for batteries, and potential patients were divided in the age groups of patients ≤ 5 years and 6 – 17 years of age. Battery types were described as cylindrical, button batteries, or unknown. Four exposure locations were evaluated during the study including ingestion, exposure to mouth, insertion in nose, and insertion in ear. Vaginal and rectal insertions were excluded as such types of insertions are rare, and cases were excluded if the battery was not swallowed intact or if mouth exposure did not result in a burn.

In total, 70,322 battery-related ED visits for patients less than 18 years of age occurred from 2010 to 2019. Most ingestions occurred in patients ≤ 5 years compared to patients 6 – 17 years of age (24.5 and 2.2 per 100,000 with a mean age of 3.2 years, 95% CI: 2.93–3.42), and 57.4% of these ingestions occurred in males. Patients with an age of 1 year had the highest incidence of battery ingestion (19,226 patients or 27.3% of patients). From 2010 to 2017, the rate of ED visits for battery-related incidents per 100,000 children significantly increased in patients ≤ 5 years of age (16.8 to 38.4, $P = 0.03$) as well as for patients 6 – 17 years of age (7 to 14.3, $P = 0.03$). However, there was a non-significant decline in such visits for both age groups from 2017 to 2019.

A total of 8410 patients (12%) were hospitalized because of a battery-related incident, and patients 6 – 17 years of age were more likely to become hospitalized compared to patients ≤ 5 years of age (1.65 times, 95% CI: 1.58 – 1.73) with 84.7% of

battery complications related to button batteries. The most common route of exposure was ingestion (90%) with these patients having a mean age of 3 years (95% CI: 2.8-3.2). Patients with exposure to batteries (including ingestion and non-ingestion of batteries) were mostly ≤ 5 years of age and male, and no significant difference existed in the hospitalization rate when comparing ingestion versus non-ingestion of pediatric batteries. Button batteries were the most common cause of hospitalization including ingestion (84.5%) and non-ingestion (86.4%), and button batteries were 2.1 times more likely to lead to hospitalization compared to cylindrical batteries (95% CI: 1.92-2.30). Finally, this study demonstrated that battery-associated ED visits per 100,000 pediatric patients had increased 2.1 times compared to the 1990 – 2009 study. The non-statistical decline in battery-associated hospitalizations from 2017-2019 may suggest that a preventative trend is occurring, but more longitudinal data is needed. Continuing surveillance as well as prevention of battery-associated pediatric ED visits are still warranted.

Chandler M, Ilyas K, Jatana K, Smith G, McKenzie L, MacKay J. Pediatric Battery-Related Emergency Department Visits in the United States: 2010–2019. *Pediatrics* 2022; 150: e2022056709.

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