

Will COVID-19 Increase Pediatric IBD Cases Over Time?

The COVID-19 pandemic has led to many downstream consequences, and one such sequelae may be an increase in pediatric autoimmune disease, such as Type I diabetes mellitus. The authors of this study looked at pediatric SARS-CoV-2 infections during the COVID-19 pandemic as well as the subsequent occurrence of inflammatory bowel disease (IBD) in New York City children.

This study evaluated cases of pediatric IBD from four large academic pediatric gastroenterology (GI) centers in New York City from 2016 to 2022. Electronic medical record data was used to determine basic patient information including age grouping based on FDA approval of the SARS-CoV-2 vaccine. Pediatric cases of Crohn's disease (CD) and ulcerative colitis (UC) were identified and followed while pediatric cases of IBD unclassified were excluded. A quarterly count analysis of both CD and UC cases using the Shapiro-Wilk test demonstrated normal distribution, and autoregressive integrated moving average modeling was used to predict trends in new pediatric IBD cases over a specific period during the pandemic (April 2020 – June 2022) based on known pediatric IBD cases found retrospectively during the defined pre-pandemic period (January 2016 – March 2020).

A total of 587 pediatric IBD patients were initially included in the study with 43.1% of patients being female. The median age of patients was 14 years (range of 2 to 21 years) with most patients being of white ethnicity (47.4%) and between 16 to 21 years of age (36.3%). Autoregressive integrated moving average modeling based on pre-pandemic new pediatric cases of UC forecast 1.91 new cases per month and 5.76 new cases per quarter through the pandemic period. However, the actual number of new pediatric UC cases was more than predicted during 3 monthly periods (range 5-6 cases per month) during the pandemic. Regarding pediatric CD cases, autoregressive integrated moving average modeling of pre-pandemic cases of CD forecast 4.67 new cases per month and 14 new cases per quarter during the pandemic period. However, more new pediatric CD cases compared to what was predicted were diagnosed during the 2020 third quarter, 2022 first quarter, and during

4 monthly periods (range 9-13 cases) during the pandemic. Significantly less cases of new IBD cases occurred in white patients during the study period while significantly more cases occurred in Hispanic patients.

This study suggests that the COVID-19 pandemic may have some unforeseen downstream effects for other disorders; namely, an increase in pediatric IBD cases after SARS-CoV-2 infection. The authors note that the rise in pediatric IBD cases seen in this study could be due to the overall increase in IBD prevalence worldwide, but in the setting of the New York City area where the COVID-19 pandemic was exceptionally severe, these findings provide data suggesting that SARS-CoV-2 contributes to perturbing the immune system which leads to increased cases of pediatric IBD. It would be interesting to see if vaccination status is associated with less IBD in pediatric patients long term.

Rosenbaum J, Ochoa K, Hasan F, Goldfarb A, Tang V, Tomer G, Wallach T. Epidemiologic Assessment of Pediatric Inflammatory Bowel Disease Presentation in NYC During COVID-19. *Journal of Pediatric Gastroenterology and Nutrition*, 2023; e003740: Online ahead of print.

Do Abdominal Radiographs Help in the Diagnosis of Constipation in Children?

Constipation is a common cause for pediatric patients to be seen in general pediatric and pediatric gastroenterology clinics. Typically, there is no organic cause for constipation, and functional constipation really should be diagnosed by history and physical examination alone. Unfortunately, abdominal X-rays (AXR) are over-utilized in the work up of pediatric constipation despite recommendations to the contrary provided by European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN). The authors of this study proposed that significant inter- / intraobserver variation exists in the interpretation of AXRs by physicians when

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an AXR is obtained to determine constipation in a child.

This study evaluated 100 AXRs obtained at a single pediatric emergency room over a three-year period. Images were blinded regarding patient information and were read by 2 senior physicians (defined as having at least 5 years of clinical experience) and 2 junior physicians (defined as having less than 5 years of clinical experience) in each of the following specialties: pediatric gastroenterology, radiology, and pediatric emergency medicine. All AXRs underwent subjective readings of findings by these 12 physicians, and then a subset of the AXRs were submitted to the same physicians for repeat subjective readings. Finally, these physicians were taught two separate scoring systems to objectively diagnose constipation using AXRs (the Barr scoring system and the Blethyn scoring system), and all AXRs were reinterpreted. Pediatric patients for this study were aged between 1 and 18 years old, and AXRs from patients with Hirschsprung disease and previous abdominal surgery were excluded.

When subjective interpretation of AXRs were evaluated, the Fleiss kappa coefficient demonstrated a value of 0.18 (poor agreement) between all physicians with only 40% of physicians having an agreement on radiology findings. Comparisons between specialties showed a kappa coefficient of 0.21 (41.5%), 0.11 (36.7%), and 0.26 (47.3%) in the fields of pediatric gastroenterology, radiology, and pediatric emergency medicine, respectively. Comparisons of subjectively reading repeat AXRs for each individual produced a kappa

coefficient of 0.08 – 0.61 with only 33.3% - 73.4% agreement noted. Objective readings of AXRs also did not perform well as use of the Blethyn method produced a kappa coefficient value of 0.14 (38.4% agreement) while the Barr method produced a kappa coefficient value of 0.20 (60% agreement) among all 12 providers. It should be noted that Fleiss kappa values < 0.40 indicated poor agreement, 0.40 – 0.75 indicated intermediate to good agreement, and > 0.75 indicated excellent agreement.

This study demonstrates that using AXRs to diagnose constipation in children is not helpful and increases healthcare costs while exposing children to unnecessary radiation. The cornerstone of diagnosing constipation in children remains the history and physical examination, and AXRs should not be used as a diagnostic endeavor in such a scenario. More international exposure to both EPSGHAN and NASPGHAN consensus statements in the diagnosis and treatment of pediatric constipation is very much needed.

Yallanki N, Small-Harary L, Morganstern J, Tobin M, Milla L, Chawla A. Inter and Intraobserver Variation in Interpretation of Fecal Loading on Abdominal Radiographs. *Journal of Pediatric Gastroenterology and Nutrition* 2023; 76: 295-299.

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