

### Do Guidelines Affect Gastrointestinal Testing and Prescribing?

Brief resolved unexplained events (BRUEs) are episodes of choking with associated cyanosis and limpness occurring in otherwise healthy infants. The cause of BRUEs are unknown, and the American Academy of Pediatrics (AAP) has developed guidelines with an algorithm to limit unnecessary testing and medication prescribing for infants with such a history. The most common disorder associated with BRUEs is swallowing dysfunction; however, GERD is often misdiagnosed instead. The authors of this study evaluated the effectiveness of the AAP BRUE guidelines to see if they reduced unnecessary medication prescriptions for GERD, reduced hospitalizations, and lead to an increase in the utilization of videofluoroscopic swallow studies (VFSS) to assess for swallowing dysfunction.

Medical records of children with BRUE from a single, tertiary children's hospital were reviewed at two time points: between 2015 and 2016 (before the AAP BRUE algorithm was available) and between 2016 and 2017 (after the AAP BRUE algorithm was available). Charts were reviewed to determine patient baseline characteristics, number of hospitalizations, length of initial hospitalizations, outcomes of testing, and use of acid suppression medication (H<sub>2</sub> antagonist or proton pump inhibitor therapy). There was no difference in patient baseline characteristics during the two study periods. The percentage of patients hospitalized as well as the length of hospital stay was not different between the two study periods although premature infants had a significantly longer hospitalization duration compared to term infants. Additionally, 28% of infants were re-admitted to the hospital or seen again in the emergency department for BRUEs. Diagnoses leading to repeat hospitalization or being seen in the emergency department again after the BRUE algorithm was available included feeding difficulty, respiratory symptoms, and vomiting.

Although clinical feeding evaluations occurred in many of the patients with BRUE, VFSS occurred less frequently after the BRUE algorithm was available. There was a poor correlation between clinical feeding evaluations and VFSS as significantly more infants with normal clinical feeding evaluations had aspiration on VFSS (33%). Additionally, only 13% of infants had VFSS

performed during hospital admission with 72% of these infants demonstrating aspiration / penetration on testing. Infants who underwent VFSS during their initial admission had significantly less hospital re-admissions or emergency department visits.

No pH / impedance testing occurred with the patients, and only 5% of patients had gastroenterology consultation. However, 17% of lactation consultations, 33% of clinical feeding evaluations, and 40% of discharge paperwork attributed BRUE symptoms to GERD. The percentage of patients treated medically for presumed GERD-causing BRUE during or after hospital admission stayed constant before and after the AAP BRUE algorithm was released although a significantly lower number of patients were discharged on acid suppression medication after the AAP BRUE algorithm was available. Acid suppression medication use for BRUE did not decrease repeat hospitalizations or emergency department visits.

This study shows that significant work is needed in making sure the AAP BRUE guidelines are available and widely understood. VFSS was not significantly utilized in this retrospective study despite its potential utility in helping detect aspiration and penetration. Finally, this study provides further data demonstrating the continued over-prescribing of acid suppression medications for unclear reasons in the infant population.

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Duncan D, Growdon A, Liu E, Larson K, Gonzales M, Norris K, Rosen R. The impact of the American Academy of Pediatrics brief resolved unexplained event guidelines on gastrointestinal testing and prescribing patterns. *Journal of Pediatrics*. 2019; 211: 112-119.

### Health Care Utilization in IBD: Children versus Adults

Inflammatory bowel disease (IBD) in children may have different genetic causes and often requires different treatment regimens compared to adults with this disease. A problematic issue in the care of adolescents with IBD is that both adult and pediatric gastroenterologists can provide healthcare services for such patients, and the purpose of this study was to compare treatment strategy differences

## FROM THE PEDIATRIC LITERATURE

between adult and pediatric care settings for an adolescent population with IBD. This study from the Netherlands used insurance data over a 7-year enrollment period. The insurance plan used for the study (Achmea) covers 4.2 million people and accounts for 25% of insurance coverage in the Dutch population. Inclusion criteria included any patients in the database that had a hospital visit or admission for IBD between 16 and 17.9 years of age, had continuous insurance coverage at least one year prior to study inclusion, and had at least one prescription for IBD given in the last 12 months.

A total of 626 adolescent patients with IBD were identified during this study period and fit into the inclusion criteria. The percentage of diagnoses of Crohn disease and ulcerative colitis were similar between patients treated in adult and pediatric care settings. Results demonstrated that adolescents with IBD who were treated in adult care settings were significantly more likely to have a new IBD diagnosis, were significantly older (0.7 years older), and were more likely treated in a general hospital setting as opposed to receiving care in a children's hospital. Hazard ratios for utilization rates (defined as the number of patients with at least one IBD treatment) demonstrated that steroid prescription rates, hospitalizations due to

IBD, and use of biologics occurred significantly less frequently in pediatric care centers although surgery for IBD-related complications was not statistically different between groups. Cumulative proportions of steroid prescriptions, hospitalization for IBD, biologic use, and surgery for IBD was lower over time in patients receiving care in the pediatric setting as opposed to the adult setting.

This study demonstrates differences between IBD treatments in the pediatric versus adult care setting. It is unknown why the patients in this study who received care in the pediatric setting had less biologic medication exposure while still having less need for surgery, and more research is needed to determine IBD outcomes in children transitioning between pediatric and adult GI care.

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Bottema R, de Vries H, Houwen R, van Rheenen P. Impact of paediatric versus adult care setting on health care utilization in adolescents with inflammatory bowel disease. *Journal of Pediatric Gastroenterology and Nutrition*. 2019; 69: 310-316.

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