Evaluating Infants with Brief Resolved Unexplained Events: Do the AAP Guidelines Help Us?

by Rachel Y. Moon MD, Associate Editor, Digital Media, Pediatrics

When infants experience an event in which they stop breathing or have changes in muscle tone, color, or consciousness, their parents look to us to determine whether this is a benign occurrence or something that portends a more serious medical condition. Because these episodes are distressing, and because we don't want to miss anything serious, there is wide variability in how these infants are managed. Do you get an EKG? EEG? CBC? Metabolic panel? More? Less?

The American Academy of Pediatrics (AAP), in an effort to provide some guidance with regards to evaluation of these patients, published in 2016 a clinical practice guideline on the evaluation of Brief Resolved Unexplained Events (BRUEs), in which risk criteria were provided to help clinicians determine which infants do not need further evaluation ("low risk").

This week, Pediatrics is early releasing an article by Dr. Joel Tieder from the University of Washington and his colleagues on the Brief Resolved Unexplained Event Research and Quality Improvement Network, entitled, "Risk Factors and Outcomes After a Brief Resolved Unexplained Event: A Multicenter Study." In this study (10.1542/peds.2020-036095), they sought to determine how well the clinical practice guideline did at identifying infants who were at low or high risk for a serious medical condition.

The findings are fascinating. Of 2,036 patients who presented to one of 15 emergency departments after having a BRUE, only 13% were classified as being at low risk. The good news is that having at least one of the AAP risk factors had excellent negative predictive value (97%). The bad news is that the positive predictive value was extremely poor (4%). The other bad news is that 6 of the 7 infants who had abusive head trauma were not diagnosed at the first encounter for BRUE.

So where does this leave us? Dr. Raymond Pitetti, from Children’s Hospital of Pittsburgh, notes in an accompanying commentary that the 2016 AAP guideline helped to only identify those patients at low risk, and that this study points out the importance of understanding which patients are at higher risk. (10.1542/peds.2021-049933)

Clinical guidelines are not set in stone. They evolve as the knowledge base and evidence evolve. Dr. Pitetti suggests that this study by Tieder et al could be the beginning of that process of evolution for the AAP BRUE guidelines.
A Framework for Evaluation of the Higher-Risk Infant After a Brief Resolved Unexplained Event
Changes in the Management of Children With Brief Resolved Unexplained Events (BRUEs)
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