1.07 BRIEF RESOLVED UNEXPLAINED EVENT

Introduction

A Brief Resolved Unexplained Event (BRUE) is defined as an event occurring in an infant younger than 1 year during which the observer reports a sudden, brief, and now resolved episode which includes one or more of the following: cyanosis or pallor; absent, decreased, or irregular breathing; marked change in tone (hyper- or hypotonia); and altered level of responsiveness, and after a thorough history and physical examination an explanation is unable to be identified. BRUE is a more specific term that replaces the previously used term Apparent Life-Threatening Event (ALTE). Patients experiencing a BRUE are categorized into lower- and higher-risk groups based on event and patient characteristics. While patients in the lower-risk group generally do not require hospitalization, those in the higher-risk group may benefit from admission for observation of events and/or completion of a targeted evaluation. Given that a BRUE can be caused by a wide variety of disorders, most self-limiting and non-life threatening, pediatric hospitalists are uniquely positioned to lead a step-wise and systematic evaluation, involving testing and subspecialists as indicated.

Knowledge

Pediatric hospitalists should be able to:

- Describe the symptoms and signs that define a BRUE and compare and contrast the criteria for lower-risk and higher-risk categorization.
- Compare and contrast the differences between Sudden Infant Death Syndrome (SIDS) and BRUE, clarifying that they are unrelated entities.
- Discuss key diagnoses and their associated historical or physical exam findings, that should be considered when evaluating a child diagnosed with a BRUE, such as oral dysphagia, gastroesophageal reflux, seizure, apnea of prematurity, infection (including sepsis, meningitis, pertussis, and bronchiolitis), toxin exposure, cardiac dysfunction, obstructive apnea, inborn errors of metabolism, central hypoventilation syndrome, hydrocephalus, child abuse, and others.
- Discuss types of child abuse (including neglect, poisoning, medical child abuse, and abusive head trauma) presenting as a BRUE and history and physical examination findings that should increase suspicion for this etiology.
- Discuss the indication for and goals of hospitalization (including monitoring, diagnosis, treatment, reassurance, and education), as well as potential risks (including increased anxiety of the family/caregivers, false positive testing, and nosocomial infections).
- Discuss the role of diagnostic testing in the evaluation of children presenting with BRUE and the clinical factors that may warrant additional management.
- Describe indications for subspecialty consultation for evaluation and treatment of children diagnosed with BRUE.
- Describe criteria and care coordination steps that must be met before discharge of patients with BRUE.

Skills

Pediatric hospitalists should be able to:

- Communicate effectively with the referring provider about the role of and criteria for hospitalization, emphasizing principles of evidenced-based medicine and high value care.
- Obtain an accurate patient history and perform a thorough physical examination, eliciting features to fully characterize the event.
- Categorize the event as a lower- or higher-risk BRUE.
- Critically assess the level of evidence and risk/benefit ratio for the evaluation and management of lower-risk patients with BRUE.
- Interpret diagnostic tests (such as laboratory tests, chest x-rays, and electrocardiograms) and identify abnormal findings that require further testing or consultation.
- Order appropriate monitoring and correctly interpret monitor data.
- Perform careful reassessments daily and as needed, note changes in clinical status and test results, and respond with appropriate actions.
- Engage consultants and support staff (such as subspecialists, feeding specialists, and social workers) efficiently when indicated.
- Communicate effectively with the family/caregivers and healthcare providers regarding findings and care plans, with special focus on aligning recommendations with current literature, especially as it relates to the usefulness of home monitoring.
- Coordinate care with the primary care provider and other providers to arrange an appropriate transition plan for hospital discharge.

Attitudes

Pediatric hospitalists should be able to:

- Realize responsibility for effective communication with the family/caregivers and healthcare providers regarding findings and care plans.
- Realize the importance of clarifying that SIDS and BRUE are different entities, addressing common confusion among the family/caregivers, hospital staff, and learners.
- Realize the impact of a BRUE on the family/caregivers and the implications for discharge planning and follow-up.
- Exemplify professional behavior when addressing issues related to anxiety of the family/caregivers, home safety, and social determinants of health.

Systems Organization and Improvement

In order to improve efficiency and quality within their organizations, pediatric hospitalists should:

- Lead, coordinate, or participate in multidisciplinary initiatives to develop and implement evidence-based clinical guidelines to improve quality of care for infants with BRUE.

References

1. Tieder JS, Bonkowsky JL, Etzel RA, et al. Brief resolved unexplained events (formerly apparent life-threatening events) and evaluation of lower-risk in-

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2. Merritt JL 2nd, Quinonez RA, Bonkowsky JL, et al. A framework for evaluation of the higher-risk infant after a brief resolved unexplained event. *Pediatrics*. 2019;144(2): e20184101. https://pediatrics.aappublications.org/content/144/2/e20184101 Accessed August 28, 2019.