Brief Resolved Unresponsive Episodes - Management and Characterisation - Full Paediatric Clinical Guideline - Derby & Burton

Reference no.: CH CLIN C23

This guideline replaces the ALTE guideline

BRUE definition

Clinicians should use the term BRUE to describe an event in an infant <1 year of age when theobserver report a sudden, brief (ie less than 1 minute) and now resolved episode of any of the following:

- Cyanosis or pallor
- Absent, decreased or irregular breathing
- Marked change in tone (hyper or hypotonia)
- Altered level of responsiveness

Moreover clinicians should only diagnose a BRUE when there is no explanation for a qualifying eventafter a full history and examination.

The term BRUE replaces the previous terminology of ALTE (apparent life threatening event) as it recognises that ALTE can give the impression to the caregiver that the event as indeed life threatening when this is often not the case.

These events are often frightening to the caregiver but often with a careful history and physical examination worrying causes can be ruled out, or managed. The scope of this guideline is to providea management plan for those cases where no underlying cause is found but the patient is consideredto be low risk.

Clues in the history suggesting an underlying cause (and therefore NOT BRUE)

Consider safeguarding if:

- Multiple or changing versions of the history/circumstances
- History or circumstances inconsistent with child's developmental stage
- History of unexplained bruising
- Bleeding from the nose or mouth
- Incongruence between caregiver expectations and child's developmental stage includingassigning negative attributes to the child

Consider reflux if:

- Was baby feeding or shortly after a feed?
- Lying down?
- Choking or vomiting?

Consider infections if:

- Fever
- Respiratory symptoms
- Perinatal risk factors for infection in those <6 weeks

Could it be cardiac:

- Sudden onset pallor associated with tachycardia
- Heart murmur
- Family history of sudden unexplained death in a first degree relative.

Could it be metabolic:

- Associated faltering growth
- Consanguinity
- FH of SUDI
- Change in conscious level.

Examination findings

- Full examination including plotting height and weight in red book to assess if growth faltering.
- Full set of observations including BP
- Any craniofacial anomaly/dysmorphism which could contribute to upper airway problem?
- External evidence of injury? Including haematympanum, torn frenulum, blood in nose or mouth.
- Stridor, wheeze, evidence of respiratory problem?
- Femoral pulses, murmur, evidence of heart failure, arrhythmia?
- Tone? Abnormal movements? Development appropriate?

What is NOT a BRUE?

- Symptoms ≥ 1 minute or ongoing
- Infant ≥1 year
- Episode does not meet BRUE characteristics
- Examination – abnormal vital signs (eg fever, inc RR) or additional symptoms (eg cough/stridor)
- There is EXPLANATION for the event eg breatholding, seizure, GORD, airway abnormality)

Low Risk Patients

Patients are considered low risk if:

- Age >60 days
- Born >32 weeks gestation and CGA(Corrected Gestational age) 45 weeks
- No CPR by trained medical provider
- First event

Management

- These patients do not need extensive investigation
- 12 lead ECG
- Pertussis testing
- Admit to obs ward for 4 hrs monitoring (Derby) PAU (Burton) for 4 hrs monitoring. If at community hospital then please refer to Paediatric team for review and "observation. "and if well DC home with advice on CPR (further training accessible through British Red Cross (www.redcross.org.uk) or St John's ambulance (www.sja.org.uk)

Not Low risk patients

The patients not meeting the low risk criteria are thus at higher risk.
Just because an infant is high risk in general, it does not mean that they will be at high risk when it comes to BRUE. More research is needed to quantify this risk.

Consider if:

- History is concerning for safeguarding: *consider ophthalmology review for retinal haemorrhages*
- Family history of sudden death in first degree relatives: *discussion with cardiology ?24 hour tape*
- Feeding or respiratory problems
- Social and environmental issues
- Multiple events
- Infant unwell or specific findings on physical examination.

Management:

1. 12 lead ECG
2. Pernasal swab for pertussis
3. Consider additional testing according to clinical suspicion – wide differential.
4. Senior review prior to discharge.

References (including any links to NICE Guidance etc.)

1. Tieder J, Bonkowsky J, Etzel R et al. Brief unresolved unexplained events (formerly apparent lifethreatening events) and evaluation of lower risk infants. Paediatrics 2016;137(5)
2. Tieder J, Altman R, Bonkowsky J et al. Management of apparent life threatening events:a systematicreview. J Paediatrics. 2013:163(1):94-9.e1-e6
3. Mils W Levine A. Which is BRUE. Emergency Phyisicians monthly. http://epmonthly.com/article/which-is-brue/. Published July 16, 2016
4. Ramgopal SR, Noorbakhsh KA, Callaway CQ, Wilson PM, Pitetti RD. Changes in the management of children with brief unresolved unexplained events (BRUEs). Pediatrics.

Documentation Controls

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Appendices – see page 4

Appendix 1

Summary Flowchart for Management of BRUE (Brief resolved unexplained events).