ALTE - APPARENT LIFE-THREATENING EVENT

This term describes “an episode that is frightening to the observer and that is characterized by some combination of apnoea, colour change (cyanosis or pallor), marked change in muscle tone (usually hypotonia) choking or gagging.’

All such events need to be evaluated in hospital.

History

It is important to include the following information in your history:

- Time of the event
- Activity at the time of the event (awake or asleep). What attracted the parents attention e.g. abnormal crying, noisy breathing?
- Colour at the time of the event (and whether there was adequate light to assess colour).
- Degree of resuscitation required.
- Presence of blood or bloody fluid at mouth or nose (pulmonary oedema).
- Tone, abnormal movements, including abnormal eye movements.
- Duration of event.
- Sleep position, presence of sweating.
- Environment: nature and type of bedding and clothing.
- History of vomiting (particularly more than 30 minutes after a feed). Relationship of the event to feeding.
- Developmental history
- Relevant past medical history (especially prematurity) and family medical history (especially family history of Sudden Unexplained Death in Infancy or later).
- Risk factors for Sudden Unexplained Death in Infancy (SUDI)

A detailed physical examination is required, bearing in mind the possible causes.
**Possible Treatable Causes**

- Infection: bacterial: meningitis, septicaemia, viral: URTI, pertussis, RSV, etc.
- Airway obstruction: congenital abnormalities, infection, hypotonia.
- Gastro-oesophageal reflux
- Metabolic problems: hypoglycaemia, hypocalcaemia, etc.
- Cardiac disease: congenital heart disease, arrhythmias, vascular ring.
- Toxin / Drugs: accidental or non-accidental.
- Neurological causes: head injury, seizures, infections etc.
- Rarely apnoea may be a manifestation of child abuse (shaken baby, drug overdose, Münchhausen by proxy syndrome).

**Investigations**

These will be dictated by the clinical presentation, but will often include:

- Full blood count and differential count, C-reactive protein.
- Capillary blood gas
- Urea & electrolytes, Ca++, fasting (pre-feed) blood glucose, liver function tests
- Chest x-ray
- ECG (measure QT interval)
- Overnight oximetry with printout

If febrile, blood and urine cultures (consider lumbar puncture)

In selected cases, the following investigations may be appropriate:

- Metabolic: Lactate / pyruvate, ammonia, urine amino & organic acids, carnitine profile.
- Barium swallow, pH monitoring.
- ENT consultation (with PA and lateral neck x-ray).
- EEG.
- CT head (history or signs of head trauma, altered level of consciousness).
- ECG monitoring.
- Urine toxicology.
- Nasopharyngeal aspirate looking for RSV, pertussis and chlamydia.
Indications for Polysomnography

Polysomnography is not indicated for routine evaluation of infants with an uncomplicated ALTE but consider this if you suspect upper airway obstruction or hypoventilation.

Management

All children require close monitoring following admission. In addition to an apnoea monitor, overnight oximetry should be performed. The parents must be taught how to resuscitate an infant.

Criteria for home monitoring include:

- Presence of ALTE from history, after excluding treatable causes.
- Apnoea of prematurity persisting past 35 weeks
- Children with chronic lung disease going home on oxygen (such children should also be discussed with the Respiratory Team).
- Pierre Robin syndrome and other similar abnormalities
- Possibly a sibling of a child who has died of SUDI

Starship will provide apnoea monitors for infants in category one (admission to Starship with a history of Apparent Life Threatening Episode). The monitors can be obtained from the nursing staff on the 5th floor. The “Starship General Paediatrics Apnoea Monitor Service Guidelines” specify the process to be followed when General Paediatrics provides a family with an apnoea monitor.

Although there is no association with SUDI it is important to emphasize practices that have been shown to lower the incidence of SUDI, namely: breast feeding, non-smoking environment and the infant sleeping in a supine position. Bed sharing should be discouraged if the parents smoke.

References

Up to date : Apparent life-threatening events Last literature review 19.1:January 2011


Brand D A et al Yield of diagnostic testing in infants who have had an apparent life-threatening event. 2005 Pediatrics; 115:885