Apparent Life Threatening Event
Management in A&E

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Airway
Breathing
Circulation
Resuscitation as required

↓

Heart Rate
Respiratory Rate
Blood Pressure
Oxygen Saturations
Capillary Refill Time

↓

History of event and resuscitation required at home
Length of time taken to return to normal
Past Medical History
(Detailed history on ward)

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Initial Investigations in A&E
Blood Sugar
ECG
Other investigations depending on history and physical condition
Consider NAI

ALL BABIES PRESENTING WITH ALTE MUST BE ADMITTED

Apparent Life Threatening Event

“An episode that is frightening to the observer and that is characterised by some combination of apnoea (central or occasionally obstructive), colour change (usually cyanotic or pallid but occasionally erythematous or plethoric), a marked change in muscle tone (usually marked limpness), choking or gagging.”

National Institutes of Health Expert Panel 1986

Definition

An infant found with one or more of the following with no obvious cause

Decreased consciousness
Abnormal colour (pallor/cyanosis)
Abnormal tone (floppy/still)
No respiratory effort

Most parents/carers will believe the child is dead and have taken appropriate resuscitative measures

ALL BABIES PRESENTING WITH ALTE MUST BE ADMITTED FOR OBSERVATION

History

Document who witnessed the episode or who found the child

How was the baby prior to this episode:

- Any history of illness, coryza, fever, hypothermia
- History of trauma: Accidental/non accidental
- History of recent feeds, aversion, choking, fatigue, diaphoresis
- Awake or asleep
- Sleep position
- Previous history suggestive of reflux

Where and in what position was the baby found?

- Witness
- Prone or supine
- Positioning and amount of bedclothes/clothing
- Was the baby sharing the bed or sofa with the carer?

Accurate description of :

- Change in tone
- Colour change and distribution
- Abnormal movements-rhythmic shaking and distribution
- Eye deviation
- Level of consciousness-? Rousable
- Breathing effort-apnoea (central or obstructive), choking, gagging, vomiting
- Any vomit/mucus/blood in mouth
- Length of episode
- Parent/carers opinion of child’s current condition and how long it took for child to get back to normal

What exactly did the parents/carers do?

Type of resuscitation
Pre hospital record
? monitor at home

Social history

Smokers at home or during pregnancy
Living conditions
Any illness or drug/alcohol ingestion affecting the carer

History of previous ALTE

Medial history, including pregnancy, birth, delivery, diet and development

Family History

SIDS, neonatal deaths or ALTE
Cardiac disease, epilepsy

Examination

Fully undress the child
Weight, length, and OFC (red book)

General condition:

Arousal, irritability, somnolence
Vital signs including oximetry

Examination of:

Head for evidence of trauma and fontanelle size and fullness
Tympanic membrane for haemotympanum
Eyes for pupil reactivity and conjunctival and retinal haemorrhages
Nasopharynx for congestion or presence of milk

Lungs for work of breathing, stridor, wheeze crackles, rhonchi, transmitted sounds
Heart for rate, rhythm, murmur, and CRT
Abdomen for signs of acute abdomen, femoral pulses
Musculoskeletal system for movement and signs of trauma
Neurological examination for tone, movement, head control, reflexes
Features suggestive of a genetic or metabolic syndrome

Differential Diagnosis

Gastrointestinal (33%)

GORD (often co-exsistent), gastroenteritis, oesophageal dysfunction, colic, surgical abdomen, dysphagia

Neurological (15%)

Seizure, central apnoea/ hypoventilation syndromes, head injury (IVH, SAH), meningitis/encephalitis, hydrocephalus, brain tumour, neuromuscular disorders, vasovagal episode, congenital malformation of the brainstem

Respiratory (11%)

RSV, Pertussis, aspiration pneumonia, reactive airway disease, foreign body

Otolaryngologic (4%)

Laryngomalacia, subglottal and/or laryngeal stenosis, obstructive sleep apnoea

Cardiovascular (1%)

Congenital heart disease, cardiomyopathy, cardiac arrhythmia/prolonged QTc, myocarditis

Metabolic/endocrine

Electrolyte disturbance, hypoglycaemia, inborn error of metabolism

Other infections

Sepsis, UTI

NAI

Shaken baby syndrome, intentional suffocation, FFI (fabricated or fictitious illness, previously known as Munchausen by proxy)

Other diagnoses

Physiological event (periodic breathing, acrocyanosis), breath-holding spell, choking, drug or toxin reaction, unintentional smothering, anaemia, hypothermia

Idiopathic/apnoea of infancy

Management

All babies presenting with ALTE should be admitted. The risk of further ALTE is highest in the next 24 hours, but this is an uncommon occurrence).This provides parental reassurance and allows full assessment of the child.

Initially:	O2 sats
	Temp/pulse/resps
	Blood glucose-if they are presented close to the event
	ECG
	Urine-mc&s and save for metabolic and/or toxicology screen (at least 10ml)
If unwell	FBC
	U&E, LFT, Ca, CRP
	Septic screen including NPA
	Lactate, ammonia, capillary or venous gas

Further investigations

For many tests used in the evaluation of an ALTE, the likelihood of a positive result is low and the likelihood of a contributory result is even lower. (European Consensus document 2004)

For patients in whom there were some initial findings, the following additional investigations were most useful:

Screening for GORD
CXR
CT brain
Skeletal survey
EEG
ECHO

For those with non-contributory history and examination, only the following were useful

Screening for GORD
Urine mc&s
CT brain
CXR
WCC

Following admission

Apnoea alarm for 12-24hours. If appropriate, discontinue at least 12 hours before discharge so as to reassure the parents that an apnoea alarm is not required at home
Consider pulse oximetry for 24hrs or longer if unwell, or has further episodes. Discontinue at least 12 hours prior to discharge
Observe feeding for any difficulties (consider oximetry with feeding)
Note episodes of noisy breathing or pallor
Further investigations as clinically indicated

Advice to parents

Do not smoke in pregnancy or around your baby (it is carried on your clothes)
Place babies on their 'Back to sleep'
'Feet to foot' keeps babies heads uncovered and prevents them from wriggling down under the covers
Do not let baby get too hot or too cold
Do not share a bed with your baby if you smoke, or have been drinking or taking drugs, or if they were born prematurely
If your baby is unwell, seek prompt advice
Ensure your baby is fully immunised

Discharge

Inform liaison HV and arrange BLS training.

Apnoea alarms-Consultant decision
They can be provided by the hospital but there are drawbacks which must be emphasised
May be falsely reassured that the baby is ok because apnoea alarm is silent eg obstructive apnoeas
Appropriate training is needed so parents can respond if their baby is not breathing
Tend to be lots of false alarms which can increase anxiety
All parents who accept a monitor MUST undergo resuscitation training and sign an appropriate indemnity/equipment loan form.

Ref:

www.nottinghamchild health.org.uk/Guidelines/Emergency/1.7%20ALTE.doc

Apparent Life-Threatening Event: A Review Pediatric Clinics of North America 52 (2005) 1127-1146

Yield of Diagnostic Testing in Infants Who Have Had an Apparent Life-Threatening Event Pediatrics 2005;115;885-893

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