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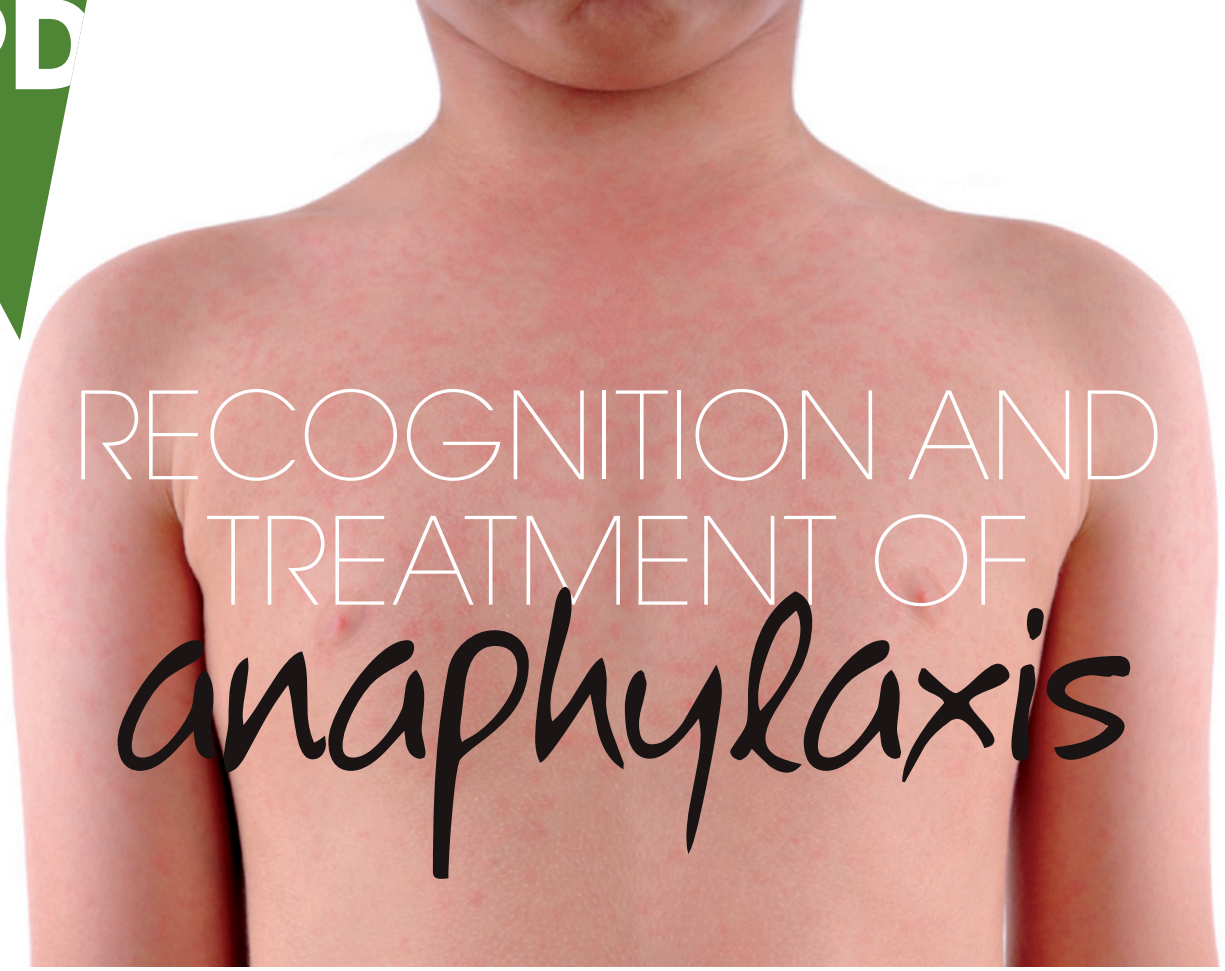

RECOGNITION AND TREATMENT OF anaphylaxis

Do you know what to do if a patient in your practice has an anaphylactic reaction? **Jon Kyle Andersen***, trainer and former paramedic, offers a guide.

Jon Anderson of ST4 Training was an ambulance service paramedic for 17 years incorporating the roles of aircrew paramedic, paramedic team leader, and operational station officer. The major part of Jon's work is teaching and facilitating courses in First Aid, Basic Life Support (BLS), defibrillation and medical emergencies to healthcare professionals and the general public. Jon is a Health and Safety Executive (HSE) approved First Aid at Work Instructor and Assessor, and holds a City and Guilds 7303 teaching qualification. He is also a CPD Registered Presenter with The CPD Certification Service. Call Jon on 07837 130700 or visit www.st4training.co.uk.

What is anaphylaxis?

'*Anaphylaxis is a severe, life-threatening, generalised or systemic hypersensitivity reaction. It is characterised by rapidly developing life-threatening problems involving: the airway (pharyngeal or laryngeal oedema) and/or breathing (bronchospasm with tachypnoea) and/or circulation (hypotension and/or tachycardia). In most cases there are associated skin and mucosal changes.*'
NICE clinical guideline 134 – issued December 2011

What is happening?

Anaphylaxis is caused by the sudden release of chemical substances, including histamine, from cells in the blood and tissues where they are stored. This release is triggered by the reaction between the allergic antibody (IgE) and the substance (allergen) causing the anaphylactic reaction. Histamine is a chemical that plays a major role in many allergic reactions, dilating blood vessels and making the vessel walls abnormally permeable.

What are the signs and symptoms?

Airway

- Swelling of the face, throat or tongue
- A feeling that the throat is closing up
- Hoarse voice
- Stridor
- Difficulty swallowing (dysphagia).

Breathing

- Shortness of breath (dyspnoea)
- Increased respiratory rate
- Wheezing
- Respiratory arrest.

Circulation

- Signs of shock
- Increased heart rate (tachycardia)
- Feeling faint
- Collapse
- Myocardial ischaemia/angina (bradycardia is usually a late sign, often preceding cardiac arrest)
- Low blood pressure (the person may be fine when supine, but may go into cardiac arrest if sat up or stood up – blood pools in the legs)
- Cardiac arrest.

Disability (neurological problems – decreased brain perfusion)

- A sense of impending doom
- Tiredness, weakness
- Reduced level of consciousness
- Confusion.

Exposure (skin and/or mucosal changes)

- Skin changes are often the first feature, and are present in over 80% of anaphylactic reactions
- Skin changes can be subtle or dramatic
- There may be erythema (a patchy or generalised red rash)
- Urticaria (hives, nettle rash, weals or welts)
- Angioedema (similar to urticaria but involves swelling of the deeper tissues such as the eyelids, lips, mouth or throat)
- Cyanosis – a late sign!

What is the treatment?

- Intramuscular adrenaline
- Oxygen (highest flow rate with a non-rebreather mask and reservoir)
- Call 999/112 (must go to hospital, even if apparently recovered)

> 'After emergency treatment for suspected anaphylaxis, offer people an adrenaline injector as an interim measure.'

Intramuscular adrenaline (IM doses of 1:1000 adrenaline)	
Adult:	500 micrograms IM (0.5 mL)
Child more than 12 years:	500 micrograms IM (0.5 mL)
Child 6-12 years:	300 micrograms IM (0.3 mL)
Child less than 6 years:	150 micrograms IM (0.15 mL)

'Repeat the dose if there is no improvement in the patient's condition. Further doses can be given at about five minute intervals according to the patient's response' (www.resus.org.uk).

'Patients with airway and breathing problems may prefer to sit up as this will make breathing easier. Lying flat with or without leg elevation is helpful for patients with a low blood pressure. If the patient feels faint, do not sit or stand them up – this can cause cardiac arrest. Patients who are breathing and are unconscious should be placed on their side (recovery position). Pregnant patients should be placed on their left side to prevent caval compression' (www.resus.org.uk).

Auto-injectors

- EpiPen www.epipen.co.uk
- Anapen www.anapen.co.uk
- Jext www.jext.co.uk
- Anapen, EpiPen and Jext have an expiry alert service by email or text messaging
- For self-use by patients or carers
- Anyone who has an adrenaline injector should also have a training device to practise with
- Train the patient and carers in using the device (their use is not intuitive)
- Only 30% of patients know how and when to use their injector; have one that is in date, and carry it all the time.

Differential diagnosis

- Severe asthma – can present with similar signs and symptoms to anaphylaxis, particularly in children. Asthma and anaphylaxis compound each other
- Septic shock – hypotension with a petechial or purperic rash (tiny red or purple spots caused by an extravasation of blood into the skin)
- Petechial rash (sometimes referred to as a purperic rash)
- Fainting – a vaso-vagal episode
- Panic attack – victims of previous anaphylaxis may be particularly prone to panic attacks if they think they have been re-exposed to the allergen
- Breath holding in children
- Idiopathic (ie without a known cause) (non-allergic) urticaria or angioedema.

If in doubt - treat as anaphylaxis!

Frequency and reporting of anaphylaxis

The following is an extract from the NICE guideline published 14 December 2011 as reported by the Anaphylaxis Campaign www.anaphylaxis.org.uk:

'Because of inconsistencies in reporting anaphylaxis, and because it is often misdiagnosed, there is no overall figure for the frequency of anaphylaxis from all causes in the UK ... there are now around 20 deaths each year in the UK from anaphylaxis (although this may be a substantial underestimate) ... in addition, there is considerable geographic variation in both practice and service provision...'

Recommendations from the new guideline include:

- Record the circumstances immediately before the onset of the reaction to help to identify the possible trigger
- After emergency treatment for suspected anaphylaxis, offer people (or, as appropriate, their parent and/or carer) an appropriate adrenaline injector as an interim measure before the specialist allergy service appointment.

Lynne Regent, CEO of the Anaphylaxis Campaign says: *'The Anaphylaxis Campaign welcomes the NICE guidelines as we believe it is important for all patients who have had emergency treatment for suspected anaphylaxis to be offered a referral to a specialist who can accurately diagnose and manage their condition. We also welcome the recommendation that patients should be given an adrenaline auto-injector before discharge, to ensure that they are equipped in the event of subsequent reactions.'*

Useful websites

Resuscitation Council (UK)
www.resus.org.uk
Anaphylaxis Campaign
www.anaphylaxis.org.uk

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