

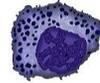
## ANAPHYLAXIS

### EPI-PEN REFRESHER

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## ANAPHYLAXIS

The term is used to describe a severe immediate-type hypersensitivity [allergic] response which affects multiple body events at the one time.



## TAKE HOME MESSAGE

Adrenaline by IM injection is the primary first aid, and in most cases the *only*, treatment necessary to treat anaphylaxis

Steroid injections should not be given as first aid treatment

## ALLERGY

The classic allergic response is one which is produced by the interaction of a substance, virtually always the most complex component of it—a protein, and the specific antibody.



## SPECIFIC CAUSES 1

- **Foods**
  - Milk—usually cow but other types
  - Egg—virtually only the white, not the yolk
  - Peanut—a legume, not a nut
  - Tree nuts—usually one or types only
  - Seafood—3 types, fish, crustaceans, molluscs
  - Seeds—sesame, sunflower, pumpkin
  - Others; e.g. fruits

## SPECIFIC CAUSES 2

- Stinging and biting insects
- Venom proteins
  - Honey bee
  - Paper wasp, 'European wasp', mud wasp (rarely)
  - Ants—many species; e.g. Jack Jumper, greenhead, bullant etc
- Salivary proteins
  - March flies
  - Ticks

## SPECIFIC CAUSES 3

- Drugs
  - Antibiotics—penicillin, cephalosporins, etc
    - ? Multiple antibiotic 'allergy'
  - General anaesthetics—muscle relaxants the most common
  - ? Local anaesthetics
  - Chlorhexidine

## RED MEAT ALLERGY

- Exception to the rule that specific allergens must be proteins
- Some patients who have had adverse reactions to tick bites will subsequently experience a *delayed* anaphylactic event from eating any type of red meat
- Cause? A complex carbohydrate commonly referred to as  $\alpha$ -gal, a component of both tick saliva and red meat

## ANAPHYLACTOID REACTIONS

These are anaphylaxis-like reactions but are not caused by antibodies interacting with specific proteins.

- X-ray contrast media; etiology??? *Not* iodine!!
- Drugs such as aspirin and NSAIDS
- Exercise—3 types
  - A critical degree of exertion
  - Exercise under particular weather conditions
  - Food associated, exercise induced

## TIME SEQUENCE

### Clinical Features

1. Abrupt onset—usually <30 minutes
2. Rapid progression—over 15-30 mins
3. Relatively quick resolution—in a few hours
4. No further reaction unless re-exposure

## EXPRESSIONS OF ANAPHYLAXIS

- MAJOR
  - Breathing difficulty
    - Throat swelling—choking sensation
    - Chest tightness—asthma
  - Low blood pressure—faint, dizzy, weak, collapse, or in very young children, floppy, 'not with it'.

## EXPRESSIONS OF ANAPHYLAXIS

- MINOR
  - Rashes, hives, swellings
  - Stomach upset, especially vomiting; in women acute uterine discomfort
  - Hay fever-like symptoms



## DIAGNOSIS

- CLINICAL HISTORY
- ALLERGIC ANTIBODIES
  - Skin prick tests
  - Blood test—RAST
- INVALID TESTS
  - Chiropractic
  - Naturopathic
  - VEGA tests
  - Cytotoxic tests

## SKIN TESTING



## SPECIFIC FEATURES [1]

- 60% of children naturally outgrow egg white and 70% cow's milk allergies by age 5 years. A significant number will lose allergic activity by puberty.
- Most children with cow's milk allergy will also react to goat's milk.
- Lactose is 'milk sugar' and does not cause allergic reactions
- Raw foods are more likely to cause allergic reactions
- Peanut is not a nut—it should be called 'nutpea'
- <5% of peanut allergic people will react to other legumes.
- Only about 30% of peanut allergic people will react to tree nuts and vice versa

## SPECIFIC FEATURES [2]

- Most tree nut allergic people react only to certain varieties.
- Cashews and pistachios are in the same family of nuts, as are walnuts and pecans.
- Seafood allergy falls into the 3 basic types –fish, crustaceans, shellfish [molluscs]
- Iodine allergy does NOT exist
- Oils from fish and nuts are usually OK
- Bee, wasp, ant sting allergies are quite distinct from each other
- Adverse reactions usually don't worsen with further exposures

## TREATMENT

- IDENTIFY THE ALLERGEN  
—**AVOID IT**
- FIRST AID:
  - Major—Adrenaline [Epi-Pen]
  - Minor [rashes and swellings]—Antihistamines
- IMMUNOTHERAPY
  - Available for bee and wasp sting-anaphylaxis

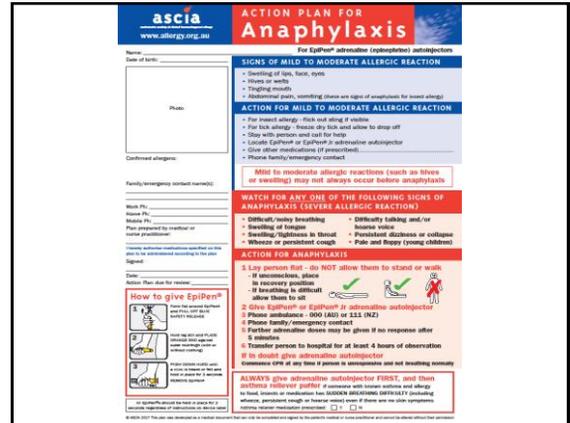


## EPI-PEN

### 2 strengths

- [1] 300µ/ml-yellow marking
- [2] 150µ/ml—'Junior'-green marking. This strength is based on weight, *not* on age, of the child; i.e. 20-22 kg or more, the 300 dose should be prescribed

- PBS authority-approval from an allergist/immunologist or from a hospital-based ED M.O.



## EMERGENCY TREATMENT

- ELIMINATE CAUSATIVE AGENT
- IM ADRENALINE [lateral thigh]-0.01 mg/kg [max 0.5 ml]
- IV ACCESS
- LOW FLOW OXYGEN
- IF HYPOTENSIVE—wide bore IV access for saline infusion
- FURTHER ADRENALINE—IV or IM
- NB-steroids NOT useful, antihistamines rarely needed

## USEFUL CONTACTS

- Australasian Society of Clinical Immunology and Allergy: [www.allergy.org.au](http://www.allergy.org.au)
- Anaphylaxis Australia: [www.allergyfacts.org.au](http://www.allergyfacts.org.au)

## SALIENT POINTS

- Anaphylaxis is relatively common but fatal outcomes, foods in particular, are RARE
- Specific immunotherapy directed against bee and wasp venoms can reverse anaphylaxis
- Specific immunotherapy for foods remains under investigation
- Adrenaline by IM injection is not only extremely effective alone in reversing anaphylaxis, but is also very safe to give in ALL circumstances

## TAKE HOME MESSAGE

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Steroid injections should not be given as first aid treatment