



London Health Sciences Centre

Southwest Ontario Regional Base Hospital Program

Anaphylaxis Webinar

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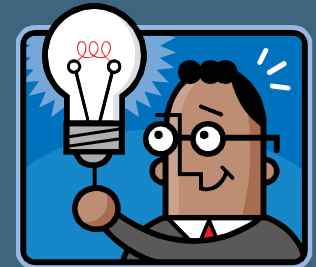
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Objectives

Given this webinar presentation, the paramedic should be able to:

1. Explain the etiology and pathophysiology of an allergic/anaphylactic reaction.
2. Describe the basic pharmacology of Diphenhydramine, Salbutamol, and Epinephrine in relation to an allergy and anaphylaxis.
3. Apply the appropriate management of an allergic/anaphylactic reaction to a Case Study.
4. Demonstrate the proper application of the SWORBHP *Anaphylaxis/Allergic Reaction Protocol ACP & PCP*.

As evaluated by the learner.



Case Study

- Call Details
 - Code 4 – allergic reaction/known allergy to peanuts
- Incident History
 - Patient ate a danish containing almonds
 - RN at place of employment gave 50mg Benadryl PO
- PMHx
 - Anaphylactic reactions
 - No Rx for an EpiPen

Case Study

- Patient Presentation

- Mouth swelling
- Slight SOB
- Tightness in throat
- Cheek tingling
- NO tongue swelling
- NO adventitious breath sounds
- NO N/V/D
- NO Urticaria
- NO Pruritis
- HR 79 | BP 143/98 | GCS 15 (Remain stable throughout the call)



Case Study

- Crews' initial thoughts
 - Allergic reaction or Anaphylaxis?
- Plan of action



Etiology & Pathophysiology

- Allergic Reaction
 - Exaggerated immune response
- Anaphylactic Reaction
 - Acute life threatening multisystem (≥ 2 systems) allergic reaction



Etiology & Pathophysiology

- Primary Response/Sensitivity
 - Exposure to the Antigen
 - Lymphocytes recognize the Antigen as foreign
 - Lymphocytes mature into B or T Lymphocytes

Etiology & Pathophysiology

- Secondary Response

- Re-exposure to the Antigen
- Antibodies are released faster and in greater numbers
- Antibodies attach to Basophils and Mast Cells
- Release of Histamine and Leukotrienes

Etiology & Pathophysiology

Histamine

- Defensive chemical mediator
- Bronchoconstriction
- ↑ GI motility
- Peripheral vasodilation
- Gastric acid secretion
- Vascular permeability

Leukotrienes

- Potent bronchoconstriction
- Coronary vasoconstriction
- Vascular permeability
- Delayed onset as compared to Histamine

Etiology & Pathophysiology: Signs & Symptoms

- Allergic Reaction
 - Mild to moderate reaction
 - Urticaria (rash)
 - Pruritis (itch)
- Anaphylactic Reaction
 - Life threatening
 - Laryngeal edema
 - Bronchoconstriction
 - Tachycardia
 - Hypotension
 - Decreased LOA
 - N/V/D



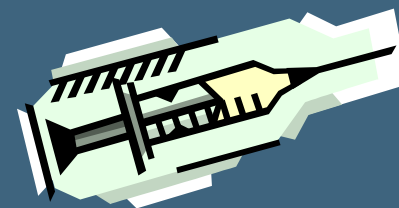
Management & Pharmacology

- BLS Management
- Epinephrine
- Diphenhydramine
- Salbutamol



Management & Pharmacology

- Epinephrine
 - Catecholamine
 - β_1 effects: \uparrow inotropy, \uparrow chronotropy
 - β_2 effects: bronchodilation
 - α effects: potent vasoconstriction
- Administered for anaphylactic reactions
- Administered IM
- Onset: 6–12 min
- Duration: 1–4 hours



Management & Pharmacology

- **Diphenhydramine**
 - H1 Receptor Antagonist
 - Anticholinergic (muscarinic cholinergic)
- Administered for both allergic and anaphylactic reactions
- Administered IM/IV
- Onset: 15–30 min
- Duration: 3–12 hours

Management & Pharmacology

- Salbutamol
 - B2 agonist
 - Relief from bronchospasm
- Administered for bronchoconstriction or wheezing whether or not there is an allergy or anaphylaxis
- Administered NB or MDI
- Onset: 30 min–2 hours
- Duration: 3–4 hours



Case Study Recap

- Call Details
 - Code 4 – allergic reaction/known allergy to peanuts
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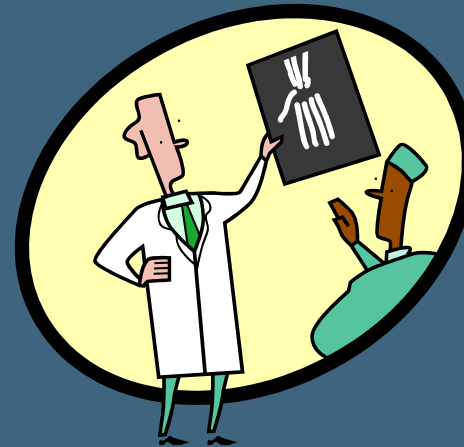
Case Study Management

- Initial & Ongoing Impression
 - Management of patient symptoms
 - Medications administered
 - Patient outcome



Case Study

- Input from the LMD



Hospital Management

What happens in the ED?

- Steroids
- Zantac
- Observation



References

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Questions ?

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