The Role of Peanut Allergy in Anaphylaxis

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Recommended Citation
Schmelzer, Jessica, "The Role of Peanut Allergy in Anaphylaxis" (2018). Nursing Student Class Projects (Formerly MSN). 305.
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Diagnosis of anaphylaxis

Signs and Symptoms

- Angioedema of conjunctiva, face, lips, tongue, or throat
- Respiratory distress (e.g., stridor, wheezing, hypoxemia)
- Conjunctivitis, hoarseness, stridor
- Abdominal pain, vomiting, diarrhea
- Headache, confusion, loss of consciousness
- Loss of consciousness, hypoglycemia
- Rash, urticaria, angioedema
- Cardiac arrest

Pathophysiology

Anaphylaxis is a medical emergency that requires immediate treatment. It is a severe allergic reaction characterized by widespread involvement of multiple organ systems and can be life-threatening. The condition occurs when an allergen (e.g., food, drugs, insect venom, or latex) triggers an immune response, leading to the release of inflammatory mediators and histamine, which cause vasodilation, smooth muscle contraction, and increased permeability of blood vessels.

Significance of pathophysiology

The significance of the aforementioned pathophysiology is related to the amount of children (and adults) affected by peanut allergy. Anaphylaxis from peanut allergy in children often occurs in the gastroenterological tract, oral cavity, skin or sometimes in the respiratory tract (Sampson et al., 2017). In addition, according to the National Institute of Allergy and Infectious Diseases, skin barrier disruptions, likely caused by inflammation or allergen exposure, are associated with increased risk of food sensitization in humans and are therefore predictive of food allergy (Sampson et al., 2017). Specific functional variants in IL-2 receptor β, T-cell leukemia-lymphoma virus and other genetic polymorphisms have all been associated with an increased risk of food sensitization (Ficco et al., 2017).

Implications for Nursing Practice

Early diagnosis and treatment for anaphylaxis is key to decreasing mortality. The gold standard for treatment of anaphylaxis is epinephrine, usually in the form of an auto-injector (Brasted & Ruppel, 2016). Knowledge regarding the mechanisms of epinephrine’s (alpha- and beta-agonist) effects and its role in reversing the hemodynamic and respiratory effects of anaphylaxis (Zhou et al., 2013) is crucial.

References

Gastroenterology, 148(6), 377, 196. doi:https://doi.org/10.1056/NEJMcp1611971