

Normally, your immune system helps protect you and it does this by sending in special cells, proteins, and natural chemicals whenever viruses or bacteria enter your body. This response helps neutralize the foreign invaders. Anaphylaxis can be defined as a severe systemic allergic reaction and is a life-threatening event. The pathophysiology is related to a person's own body's reaction to the foreign materials. Antigens can be introduced to the body by ingestion, injection, through the skin, or respiratory tract. When an individual is hypersensitive to a substance that's been introduced to their body, their own antibodies react to trigger an immune response. Substances introduced to the body interact with mast cells which are part of the immune system and basophil cells which are part of the pituitary gland. The substances would interact directly in the case of a non-immune anaphylaxis. During an anaphylactic reaction, antibodies bind to the antigen and the antibodies interact with mast cells and basophils cells. These cells proceed to release a variety of compounds and this is called degranulation. Histamines, proteinases, heparin, serotonin, leukotrienes, and prostaglandins travel throughout the body. These mediators unfortunately start to cause many problems such as peripheral vasodilation, increase permeability, coronary vasoconstriction, bronchoconstriction, excessive mucus secretion, smooth muscle constriction, inflammation, and cutaneous reactions. With the cutaneous system, you start to see hives, flushed skin, itching, burning, and swelling. In the gastrointestinal system, you will see cramping, abdominal pain, diarrhea, and vomiting. In the respiratory system, you see shortness of breath, wheezes or stridor, hoarseness, pain with swallowing, and a cough. With the cardiovascular system, you see fast or slow heart rate and low blood pressure. In the central nervous system, you will see lightheadedness, loss of consciousness, confusion, headache, and even anxiety. Anaphylaxis symptoms may be mild, moderate, severe, protracted, or biphasic. If the allergen were to come in through your mouth, your tongue and lips could swell up with histamine. Your throat will also start to constrict as the flesh around it swells and your blood vessels grow. This will cause your blood pressure to immediately drop and if this goes untreated, you could die in a matter of minutes. However, this is not very common in the United States. To overcome these life-threatening events, epinephrine must be self-administered. This comes in a pen form that is injected and is filled with adrenaline. Epinephrine works rapidly at the organ site to counter the effects of the chemical mediators acting to constrict blood vessels and reduce vascular permeability, relax smooth muscles of the airway, and stimulate the heart rate. This injection of epinephrine usually allows time to transport the individual to obtain emergency care right away. If symptoms don't improve with just one injection within five minutes, the individual should be advised to administer a second dose. These allergies can be passed on from parent to child, since allergies are a disorder in the immune system. If one of your parents is allergic, there is a one in three chance that you will have allergies. If you have parents that both have allergies, there is a four in five chance that you will have allergies. There are nursing interventions that can be done and are important for the nurse to help prevent this. Nursing interventions include identifying patients at risk, assessing patient response to medication and infusions, and getting a complete and accurate history of the patient's allergies. If possible, the nurse should get a detailed list of the type of responses the patient has for each allergy. In the event of an anaphylactic crisis, the nurse should position the patient to help with breathing and teach the patient to breath slowly and deeply. It is important to note that following the resolutions of symptoms, they can reappear during a one-to-twelve-hour period.