perfusion are seen.

## Therapeutic Management

Successful outcome of anaphylactic reactions depends on rapid recognition and institution of treatment. The goals of treatment are to provide ventilation, restore adequate circulation, and prevent further exposure by identifying and removing the cause when possible.

A mild reaction with no evidence of respiratory distress or cardiovascular compromise can be managed with subcutaneous administration of antihistamines, such as diphenhydramine (Benadryl) and epinephrine.

Moderate or severe distress presents a potentially life-threatening emergency. Establishing an airway is the first concern, as with all shock states. Epinephrine is given subcutaneously or intravenously as an antihistamine and to support the cardiovascular system and increase BP. Other routes for giving epinephrine are intramuscular and via the airway, either nebulized or injected through an endotracheal tube. In severe anaphylaxis, epinephrine by any route is better than none. Fluids are given to restore blood volume. Additional vasopressors may be given to improve cardiac output.

Prevention of a reaction is preferable. Preventing exposure is more easily accomplished in children known to be at risk, including those with (1) a history of previous allergic reaction to a specific antigen; (2) a history of atopy; (3) a history of severe reactions in immediate family members; and (4) a reaction to a skin test, although skin tests are not available for all allergens. Desensitization may be recommended in certain cases.

## Quality Patient Outcomes: Anaphylaxis

- Early recognition of symptoms
- Airway patency maintained
- Adequate circulation restored and maintained
- Further exposure to allergic agent prevented