the car with the windows down may help relieve symptoms.

Nebulized epinephrine (racemic epinephrine) is often used in children with severe disease, stridor at rest, retractions, or difficulty breathing. The beta-adrenergic effects cause mucosal vasoconstriction and subsequently decrease subglottic edema. The onset of action is rapid, and the peak effect is observed in 2 hours. Children may be discharged home following racemic epinephrine after a 2- to 3-hour period of observation for return of acute symptoms.

Oral steroids (dexamethasone) have proven effective in the treatment of croup (often as a single dose); IM dexamethasone may be given to children who are unable to tolerate oral dosing. Nebulized budesonide may be administered in conjunction with IM dexamethasone.

In severe cases of LTB, the administration of heliox (a mixture of 70% to 80% helium and 20% to 30% oxygen) may be used to reduce the work of breathing and relieve airway obstruction. It reduces airway turbulence but is not recommended as a standard treatment of croup (Moraa, Sturman, McGuire, et al, 2013). On occasion, intubation and ventilation may be required when airway obstruction becomes more severe.

Antibiotics are only used to treat specific bacterial complications of croup.

Nursing Care Management

The most important nursing function in the care of children with LTB is continuous, vigilant observation and accurate assessment of respiratory status. Cardiac, respiratory, and pulse oximetry monitoring supplement visual observation. Changes in therapy are frequently based on the nurses' observations and assessments of a child's status, response to therapy, and tolerance of procedures. The trend away from early intubation of children with LTB emphasizes the importance of nursing observations and the ability to recognize impending respiratory failure so that intubation can be implemented without delay.

Nursing Alert

Early signs of impending airway obstruction include increased