Cultural Considerations

Cultural Acceptance of Smoking  Cigarette smoking has clearly been demonstrated to be a contributing factor in the development of respiratory disease—especially chronic obstructive pulmonary disease and bronchogenic cancers. Though the use of tobacco products in the United States has declined overall, it is still more acceptable in some areas of the country than in others. For example, in some southern and eastern states where tobacco is the cash crop, there is a higher incidence of tobacco use. Smoking also is more acceptable and better tolerated in some cultures than in others. Likewise, tobacco products are more readily available where these cultures prevail. Thus, over time, one would expect the incidence of chronic obstructive pulmonary diseases and bronchogenic cancers to be higher in these groups.

Diuretics and nitrates, which are used in patients with cardiogenic pulmonary edema, are usually not helpful in patients with ARDS. Your medical director may occasionally order corticosteroids for patients with ARDS/noncardiogenic pulmonary edema. Corticosteroids are thought to stabilize the alveolar-capillary membrane, although clinical studies have not demonstrated any benefit to their use.

Maintain cardiac monitoring and pulse oximetry throughout transport of the patient. Transport patients to a facility capable of advanced hemodynamic monitoring (including Swan-Ganz catheter) and mechanical ventilation support.

OBSTRUCTIVE LUNG DISEASE

Obstructive lung disease is widespread in our society. The most common obstructive lung diseases encountered in prehospital care are asthma, emphysema, and chronic bronchitis (the last two are often discussed together as chronic obstructive pulmonary disease, or COPD). Asthma afflicts 4 to 5 percent of the U.S. population and COPD is found in 25 percent of all adults. Chronic bronchitis alone affects one in five adult males. Patients with COPD have a 50 percent mortality within 10 years of the diagnosis.

Although asthma may have a genetic predisposition, COPD is known to be directly caused by cigarette smoking and environmental toxins. Other factors have been shown to precipitate symptoms in patients who already have obstructive airway disease. Intrinsic factors include stress, upper respiratory infections, and exercise. Extrinsic factors include tobacco smoke, drugs, occupational hazards (chemical fumes, dust, and others), and allergens such as foods, animal danders, dusts, and molds.

Obstructive lung diseases all have abnormal ventilation as a common feature. This abnormal ventilation is a result of obstruction that occurs primarily in the bronchioles. Several changes occur within these air conduits. Bronchospasm (sustained smooth muscle contraction) occurs, which may be reversed by beta-adrenergic receptor stimulation. Agents such as terbutaline, albuterol, and epinephrine are used to accomplish this stimulation. Increased mucus production by goblet cells that line the respiratory tree also contribute to obstruction. This effect may be worsened by the fact that in many patients, the cilia are destroyed, resulting in poor clearance of excess mucus. Finally, inflammation of the bronchial passages results in the accumulation of fluid and inflammatory cells. Depending on the underlying cause, some elements of bronchial obstruction are reversible, whereas others are not.

During inspiration, the bronchioles will naturally dilate, allowing air to be drawn into the alveoli. As the patient begins to exhale, the bronchioles constrict. When this natural constriction occurs—in addition to the underlying bronchospasm, increased mucus production, and inflammation that exist in patients with obstructive airway disease—the result is significant air trapping distal to the obstruction. This is one of the