INTRODUCTION

"The following diseases are the usual consequences of the habitual use of ardent spirits—Hoarseness and a husky cough, which often terminates in consumption, and sometimes in an acute and fatal disease of the lungs" (Rush, 1943–1944).

The above statement, written by Benjamin Rush in 1814, clearly indicates the relationship between alcoholism and pulmonary disease. In this chapter we examine this relationship in detail. The incidence and occurrence of pulmonary disease among alcoholics is discussed. The pathogenesis of pulmonary infections as affected by alcohol, as well as the several types of infections occurring in...
alcoholics, is presented. Other, noninfectious pulmonary diseases also will be considered, as will changes in pulmonary function secondary to chronic alcoholism.

The respiratory system is particularly affected in individuals addicted to alcohol. The intoxicated states of the alcoholic interfere with several protective body mechanisms, making him or her very susceptible to respiratory infections and injury. The immunologic defenses, the respiratory clearance mechanisms, and the function of the gastrointestinal system are all adversely affected by excessive use of alcohol and especially during the intoxicated state. Even certain therapeutic measures used for the alcoholic individual such as sedation may increase the risk of respiratory disease.

Pulmonary abnormalities occur more frequently among chronic alcoholics than in the general population; until recently, this observation was poorly documented. Olen (1966) and Tyndel (1969) examined 227 chronic alcoholic men in jail because of intoxication. The mean age of their subjects was 46 years, and all were heavy drinkers for at least 20 years. Ten percent were found to have tuberculosis, 15% pulmonary disease, and 66% abnormalities on chest films. In addition to the alcoholics with tuberculosis, another 13.7% gave a previous history of pleurisy. More than 12% of the alcoholics had some degree of emphysema or chronic bronchitis. A total of 44% of the alcoholics had a history of some type of current or previous significant pulmonary disease. When chest radiograms were evaluated, the number of normal patients declined even more. Thirty-one percent of the patients had abnormal calcifications on the chest film, 15% had significant tuberculosis, and 5% had nontuberculous pulmonary infiltrates, such as pneumonitis or tumors.

Alcoholics in general are also cigarette smokers, and this factor must be considered in evaluating certain types of pulmonary disease in alcoholic patients. Rankin et al. (1969) compared the clinical and pulmonary function findings of smokers and nonsmokers in an alcoholic clinic in Melbourne, Australia. None of the nonsmokers had respiratory symptoms or pulmonary infections within three years prior to the study, while one-third of the smokers had a history of chronic bronchitis, and most of these had required antibiotics for pulmonary infections within the previous three years. When pulmonary function studies were performed, about 42% of the smokers had a decreased vital capacity, while it was normal in all the nonsmoking alcoholics. The forced expiratory volume in 1 sec (FEV₁) was 97.5% of predicted in nonsmokers, but only 78.4% of predicted in smokers. This finding was statistically significant and was observed for both men and women. When a "healthy" nonalcoholic outpatient population was examined, one-sixth were found to have chronic bronchitis, as compared to one-third of the alcoholics. However, smoking was twice as frequent in the alcoholic group. The authors concluded that the increased incidence of chronic bronchitis in alcoholism is related to an increased incidence of smoking.