Bronchoaspiration: incidence, consequences and management

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Saturday, June 12, 2010 16:00-16:45 Room: 101ab

Aspiration is defined as the inhalation of oropharyngeal or gastric contents into the lower respiratory tract. It can lead to a range of diseases such as infectious pneumonia, chemical pneumonitis, or respiratory distress syndrome with significant morbidity and mortality. Aspiration pneumonia and pneumonitis are two syndromes with some overlapping and also several contrasting features such as predisposing factors, age of patients, and clinical appearance. It is estimated that 5-15% of acquired pneumonias are related to aspiration, most often observed in patients with dysphagia due to neurologic disorders, or in residents of nursing homes. Aspiration pneumonitis, however, occurs in approximately 1 to 10 per 10 000 operations, with an increased incidence in obstetric anaesthesia.

Patients are most at risk during induction of anaesthesia and extubation, in particular in emergency situations. It is unclear if improved anaesthetic techniques and pharmacological pretreatment have a positive impact on incidence and outcome of acid aspiration. At the cellular level of the consequences of acid aspiration, injured epithelial cells and alveolar macrophages secrete chemical mediators, attracting and activating neutrophils, which in turn release proteases and reactive oxygen species, degrading the alveolocapillary unit.

Management of acid aspiration includes suctioning after witnessed aspiration; antibiotics are indicated in patients with aspiration pneumonia only; and steroids are still not proven to improve outcome or mortality. Patients with acute lung injury requiring mechanical ventilation should be ventilated using lung protective strategies with low tidal volumes, high positive end-expiratory pressure, and low peak pressure values, attempting to limit peak lung distension and end-expiratory collapse.