

Summary/Abstract

Inhalation is one of the most important routes of exposure for chemical warfare agents (CWAs) and thus, the lung remains a critical target of injury. The mode of action by which the CWAs cause injury, the nature of injury, the location being impacted within the respiratory tract, and the temporality of injury can vary considerably. Nerve agents can impact the central nervous system and peripheral neurons embedded within the respiratory tract. These respiratory effects can be displayed secondary to neuronal and cardiovascular impairment. Inhaled riot control agents can activate irritant reflex responses compromising respiratory function. Blistering agents can injure the upper respiratory tract upon contact, but may also damage the lung parenchyma if the concentration of agent and the duration of exposure are increased. Pulmonary agents such as arsine can have a variety of effects depending on the exposure dose, while chlorine will injure the upper respiratory tract and phosgene will cause deep lung edema. Respiratory failure is often a cause of mortality with a variety of CWAs and thus, the understanding of respiratory toxicity becomes an essential aspect for therapeutic interventions. We discuss biochemical and pathological effects of CWAs on the respiratory tract.