Legionnaire's Disease
(Legionellosis)

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Legionellosis was first recognized in 1976 after an explosive outbreak of pneumonia (with 182 cases and 29 deaths) among participants of the American Legion's convention in Philadelphia[1] The source of the bacteria, *Legionella pneumophilia*, was never determined, although it appeared to be airborne. By 1978 researchers had found the organism growing in cooling towers or evaporative condensers of air-conditioning systems at the sites of several outbreaks and hypothesized that the equipment may aid in disseminating the organism into the air.[2]

Further investigations have revealed that bacteria in the genus *Legionella* are ubiquitous in the environment. Modern technology has made a few of them important human pathogens. *Legionella pneumophilia* parasitize amobae, other protozoa or bacteria that occasionally contaminate warm (90-115°F) water reservoirs. By aerosolizing infested water from humidifiers, respiratory therapy equipment, showers etc., the organism can be inhaled in small droplets into the lung alveoli. In the lungs they invade and kill the protozoa-like phagocytic immune cells. Toxin production by the bacteria also contributes to the development of pneumonia. The disease is not transmissible from person to person.

There are two forms of the disease: legionellosis and Pontiac disease. For legionellosis, pneumonia is the most common clinical manifestation. However, the symptoms are nonspecific and can vary from a mild cough with low-grade fever to stupor, respiratory failure and multiorgan failure.[3] The incubation period is 2-10 days. As with other types of pneumonia, the disease is more severe in elderly and patients with other health problems such as chronic lung disease, immune disorders and cancer.[4] Pontiac fever is a milder, self-limiting form of the disease without pneumonia. The symptoms are influenza-like with respiratory signs, fever and myalgia. The incubation period is 1-2 days. Laboratory testing distinguishes legionellosis/Pontiac disease from other causes of respiratory illness.

It has been estimated that 1-5% (ca 13,000) of all cases of community-acquired pneumonia in the United States each year are caused by *Legionella*[3]. More than 80% of these are caused by *L. pneumophilia* serotype 1. Most cases are sporadic, but outbreaks have been reported from several different environments including cruise ships, office buildings, hotels and hospitals. In Florida, on average 41 cases were reported each year between 1987-1998. Most of the patients were white (88%), and the average age was 61.7 years. An outbreak caused by bacteria growing in a decorative water fountain was reported from Orlando in 1992[5].

References **10/26/99**

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