

Legionellose is a term encompassing illnesses caused by the *Legionella* bacteria, including pneumonia and Pontiac fever. The bacteria was discovered in 1976 after a pneumonia outbreak at a Legion convention in Philadelphia, hence the term Legionaire's disease. There are 49 species of *Legionella* with 20 that can infect humans. *L.pneumophilais* is the most frequent (70-90%). Hot water from 25 and 40°C supports its growth. Amoebea in aquatic environments also protects and enhances growth of *Legionella*. Transmission is done through inhalation of aerosolized contaminated water. There is no transmission between humans.

A number of outbreaks of *Legionellose* have been reported in the US and Europe since 1976. These outbreaks can last from a number of weeks to years. As an example, Wadsworth Veterans Administration Hospital in Los Angeles had 250 cases of Legionellose over 8 years. Mortality rates are between 10 and 15%.

Prevention of Legionellose is possible in Hospitals and other Healthcare facilities. We must avoid water temperatures favorable to *Legionella* growth (between 25 and 40°C). That is, cold water must be lower than 20°C and hot water must be maintained above 50°C. However temperatures above 50°C can cause scalding and burns to patients. The use of chlorine based products have some measure of efficiency but more studies are required since it is rather expensive, can be corrosive and by products have been linked to cancer.

Disinfection with a Copper-Silver ionization system has demonstrated efficacy over long term use. Its action is linked to cell wall distorsion and protein denaturation. Installation and maintenance is easy and low cost. A pair of electrodes requires replacement every 8 to 18 months depending on the sizing of the system at a cost in the range of \$250 to \$300. Cost of an HAI pneumonia is approximately \$10 000.00.

Pierre-Le Gardeur Hospital had sporadic cases of *Legionella* caused pneumonia when I became Infectious Disease Specialist in 1997. Hospital water cultures showed presence of *Legionella*. In agreement with the Infectious Prevention and Maintenance teams, it was decided to install a 2 pair electrode, Copper-Silver ionization system in the Hospital hot water system. Since then we have not had HAI pneumonia linked to *Legionella* and the annual water controls are negative to its presence.

Dr Pierre-Jean Maziade MD FRCPC

Microbiologist-Epidemiologist
CSSS sud Lanaudière
Medical Infection Prevention Coordinator

References :

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- 2- Stout JE, Yu VL. Experience of the first 16 hospitals using copper-silver ionization for Legionella control: Implications for the evaluation of other disinfection modalities. Infect Control Hosp Epidemiol.2003;24:563-568.