

# Legionnaires Disease

Pages with reference to book, From 103 To 104

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In the 1970's important contributions were made to the understanding of infectious diseases and many developments were made in bacteriology. During 1970 *Legionella pneumophila* was discovered which was the etiologic agent of Legionnaires disease (Brenner et al., 1979). This was first isolated from the lungs of 4 patients who had Legionnaires disease in association with the 1976 Philadelphia outbreak (McDade et al., 1979).

*L. pneumophila* has been isolated from a variety of environment samples most of which are wet. In the laboratory *L. pneumophila* has been demonstrated to survive for prolonged periods in distilled and tap water.

Members of the genus *legionella* are gram negative, aerobic non spore-forming bacilli that do not grow or grow very slowly, on ordinary laboratory medium. They are typically 0.5 to 0.74 in width and 2 - 204 in length. On initial culture (passage on growth supporting mediums) *L. pneumophila* organisms as well as other legionellae when stained with Sudan black B fat stain, appear pink and have slightly swollen regions that contain either blue black or grey blue droplets (Weaver and Feeley, 1979). Cystine HCL and hemoglobin are important chemicals required for growth at optimum pH 6.90. Hemoglobin which served as an iron source can so be supplied by soluble ferric pyrophosphate (Feeley et al., 1978).

*L. pneumophila* has been estimated to cause 25,000 cases of pneumonia in the United States each year or 1% of 1 cases of pneumonia (Foy et al., 1979). Nineteen epidemics of legionellosis have been investigated by the centre for disease control and 1 out-breaks were caused by *L. pneumophila*. Typically, epidemic legionellosis occurs in early summer and fl. Sporadic legionellosis has occurred since 1947 (McDade et al., 1979) and is recognized world wide.

The incubation period of legionellosis has been identified only in relation to out breaks, and is said to vary from 2 - 10 days (Fraser et al., 1977).

The pattern of severe outbreaks is consistent with airborne spread, despite intensive efforts to document secondary spread no convincing evidence for person to person transmission of legionellosis has been established. Risk of legionellosis tends to increase among middle age and elderly men, alcoholics, those on immunosuppressive drugs or any other disease.

Measures at present to prevent legionellosis or dissemination of *L. pneumophila* from the environment has failed. Major unsolved problems regarding the epidemiology of legionellosis involve understanding of the sources of acquisition and mode of spread in sporadic disease, environment factors responsible for the growth and dissemination of legionella organisms, and means for its prevention. Preliminary studies have demonstrated that a purified antigen isolated from *L. pneumophila* causes delayed skin reactions in previously sensitized guinea pigs (Wong et al., 1979). Development of a skin test for use in humans could enhance the understanding of how sporadic legionellosis is acquired. Prevention might be achieved by developing an effective vaccine (Wong et al., 1979).

The diagnosis of legionellosis can be confirmed by the demonstration of a 4 fold rise in indirect fluorescent antibody titer 7,128 or by demonstration of the organisms by direct fluorescent antibody staining or by the isolation of the organisms (Soravolatz, 1979; Broome et al., 1979; Feeley et al., 1979; Edeistein et al., 1979) Pneumonia being quite common in our patient population, it is therefore suggested that doubtful cases should undergo screening for legionnaires disease.

## References

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