Pasteurellosis as Zoonosis

**Key words:** zoonosis, Pasteurellosis, *Pasteurella multocida*, lung abscess

Pasteurellosis is an infectious disease with a tendency for opportunistic infection caused mainly by *Pasteurella multocida* (*P. multocida*) of the genus *Pasteurella*, and is a typical zoonosis. Moreover WHO has already warned of Pasteurellosis as one of the most important Zoonosis in the technical committee of Zoonosis in 1959 (1).

*P. multocida* are indigenous gram-negative facultative anaerobic short rods (0.4–1.0 m) present in the upper airway and mouth in many mammals and birds. The prevalence of *P. multocida* is 50–60% in dogs and 50–90% in cats. The organisms are transmitted to humans mainly through scratches and bite wounds from dogs and cats and through airway infection.

The organisms have been identified as the etiologic agent of serious infectious diseases such as bovine hemorrhagic septicemia and fowl cholera (2). In humans, the initial case of Pasteurellosis was puerperal fever reported in 1913. In Europe and America, local infections through scratches and bite wounds by dogs and cats are the most common (about 50%), and the incidence of respiratory infectious diseases is the 2nd highest (about 25%). Other infectious diseases such as urinary tract infection, sepsis, meningitis, and death have also been reported (3). However, in our 1991 survey we found that, *P. multocida* infection caused respiratory infectious disease in more than 50% of Pasteurellosis cases, and local infection through bite wounds and scratches by dogs and cats occurred in 27.1%, followed by other diseases, showing an order inverse to the situation in Europe and America. The mean increase rate in the incidence of Pasteurellosis for the 3 years between 1988 and 1991 in Japan was 25%, showing a marked increase (4). Pasteurellosis is diagnosed mainly by isolation culture of the organism from specimens. The serum anti-*Pasteurella* antibody titer measurement method is also available, but not common. As for epidemiological methods, there are AP-PCR and PFGE methods, but these are still at the research level. For treatment, Penicillin G and Amoxicillin are the 1st choice and Doxycycline, Ampicillin and sulfamethoxazole-trimethoprim are the 2nd choice. Since the antibiotics normally used are very effective for Pasteurellosis, and antibiotics are administered for prevention in many cases in Japan, there may be more latent cases than the surveyed number (5). Since the number of pets is increasing in Japan, patients with Pasteurellosis may increase (5).

Clinically, respiratory infectious disease caused by *P. multocida* has no characteristic feature, and various symptoms develop from pharyngolaryngitis to dyspnea. Bronchitis, acute pneumonia, lung abscess, and pyothorax have been reported, and acute pneumonia has been most frequently reported (2). A similar tendency is also noted in Japan. Regarding the age distribution of patients, 77 of 89 patients (86.5%) were 41 years old or older. The peak was in the sixties, and many patients were middle-aged to elderly, frequently having underlying respiratory diseases. The total number of patients markedly increased in 1990 and 1991 by 39.8% and 24%, respectively, compared to the previous year (6). An increase was also noted in the incidences of *Pasteurella gallinarum*-induced sepsis developing food poisoning-like symptoms (7) and *Pasteurella hemolytica*-induced sepsis, which was considered to be splenic abscess (8).

Human cases of *P. multocida*-induced lung abscess have been rarely reported worldwide. Most of the cases occurred in middle-aged to elderly patients with underlying diseases, and animals were present in many cases. In the case reported by Umemori and Hiraki, the patient was a farmer, and had no contact with animals other than cattle. This was a very rare case suggesting transmission from cattle (9).

I support the statement of Klein and Cunha that *Pasteurella* is a potential pulmonary pathogen (10).

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**References**


