

Clinical diagnosis

Case 338

5. Mycoplasma pneumonia

[Progress]

Laboratory test revealed mixed pneumonia with mycoplasma and rhinovirus pneumonia.

[Discussion]

World Health Organization (WHO) warned outbreak of unknown pneumonia prevailed mainly on children in several provinces of North China on November 22, 2023. China Health Organization denied the existence of mysterious pneumonia but declared the mere outbreak infection of influenza accompanied with mycoplasma, Corona 19 and RS virus infections on November 26. Mycoplasma pneumonia was reported to prevail also in Korea. In these days, Mycoplasma pneumonia is prevailing in Hannan city in Japan.

The symptoms of mycoplasma pneumonia mimic common cold: headache, fever, general fatigue, and cough. The characteristic symptom is persistent cough. Mycoplasma pneumonia is susceptible to occur in children, 40% of the community-acquired infections, and 3-11% of developing pneumonia, while it occurs also in adults, especially with originally less of immune-globulin, high-elderly ages, and smoking cigarettes. 10-15% of the community-acquired infections, and incidentally developing pneumonia (1-5).

Mycoplasma pneumonia is placed in 5th categorize infection, with a duty for reporting the number of patients a week from core hospitals. Mycoplasma pandemic occurred in 1984 and 1988, corresponded to Olympic years. It least occurred in 90ties, but re-emerged in 2015-2016, and the sign of its pandemic initiated this 2023.

Radiologic findings of mycoplasma pneumonia vary from interlobular bronchiolitis, ground glass opacity, bronchitis, and consolidation, depending on mycoplasma potency and immune weakness. In children, viral pneumonia such as RS virus, adenovirus, or human metapneumovirus appears slight ground glass opacity, while mycoplasma pneumonia appears consolidation rather than ground glass opacity (6-9).

Mycoplasma is one of the smallest slender or elongated bacillus: 0.1-0.2 X 1-2 μ m. The size of virus is 0.1 μ m, bacteria, 1 μ m < at large 5 μ m, blood cell 7 μ m, lymphocyte 10 μ m, neutrophil 15 μ m, macrophage 20 μ m (10).

Mycoplasma infection is diagnosed by ribosome-mycoplasma test; ribosome is a kind cellular factory to produce protein reading mRNA; each bacteria owns each specific-ribosome: antibody to specific ribosome leads to diagnosis of mycoplasma infection.

Mycoplasma owns cellular membrane but not cellular wall rather other common bacteria. Cellular wall is target for penicillin and its derivatives. Then, penicillin derivatives are not effective for mycoplasma. Instead, Macrolide antibiotics which act as inhibit to produce cellular protein of bacteria, are used to control mycoplasma infection. Tetracycline antibiotics is prepared for macrolide-tolerant mycoplasma, although tetracycline is hesitated to use for children with mycoplasma infection because of considering adverse effects for children (1-5). In fact, for mycoplasma pneumonia, azithromycin or minomycin is used for first-line antibiotics, while Klabit is the second-line antibiotics. When respiratory failure is associated with mycoplasma pneumonia, methylprednisolone is added.

In our case, penicillin derivatives were first used and then, minomycin of Macrolide antibiotics was replaced, inducing relieving symptoms.

[Summary]

We presented a nine-year-old boy with her mother for persistent cough and intermittent fever for five days. Laboratory test revealed white blood cells 7900/mm³, and CRP 3.9mg/dL. Chest radiograph and CT depicted extensive and expansive consolidation at middle lobe. Ribosome antibody test revealed mycoplasma pneumonia. It is borne in mind that mycoplasma is one of the smallest bacteria sized 0.1-0.2 X 1-2 μ m with no cellular mural that indicates no effectiveness of penicillin derivatives which work to destroy bacterial cellular wall. Instead, macrolide antibiotics such as minomycin, azithromycin, or cravat is given to patients with mycoplasma pneumonia. Further, in case of being accompanied with respiratory failure, methylprednisolone of 500 to1000mg/day for 3 days is additionally administered.

[References]

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