

# Fatal Pneumonia Mixed with Fungus, Cytomegalovirus and Nontuberculous Mycobacterium in a Human Immunodeficiency Virus-infected Patient

Wen-Liang Yu<sup>1\*</sup>

<sup>1</sup> Chi Mei Medical Center

## Background/Objective

*Pneumocystis jiroveci* pneumonia (PCP) is the most common infection in human immunodeficiency virus (HIV)-infected patients with ground-glass opacities on chest film, however, progressively unresponsive pneumonia may be due to others, such as cytomegalovirus (CMV) pneumonia may occur with similar features to PCP.

## Method

A 50-year-old man presented to the emergency department complaining of intermittent fever and chills for 3 weeks. He has an 8-year history of HIV infection. He also had dry cough with chest wall pain, general weakness, body weight loss of 5-6 Kg in recent 1 month and diarrhea in recent 3 months. He denied any hemoptysis, headache or hematuria. The laboratory data revealed a white blood cell count of 2,200/ $\mu$ L; platelet count, 166,000/ $\mu$ L; procalcitonin, 4.24 ng/mL, C-reactive protein, 39.3 mg/L and HIV viral load, 122,000 copies/mL. CXR revealed patches and micronodular interstitial infiltrates of both lungs. The T-cell markers revealed a low CD4 count (24/ $\mu$ L) and a CD4/CD8 ratio of 14%. The sputum cultures yielded few yeast. The sputum acid-fast stains were positive, which PCR was negative for tubercle bacillus (TB). The blood cryptococcal antigen was negative. Antimicrobial therapy included anti-TB drugs, intravenous ceftriaxone and sulfamethoxazole/trimethoprim.

## Result

However, dyspnea, hypoxia and consciousness change developed. He was intubated and was transferred to the intensive care unit with unstable hemodynamic status. CXR showed worsening bilateral consolidation. The sputum cytology GMS stains found fungal spores and hyphae without evidence of *Pneumocystis jiroveci*. Ceftriaxone was replaced by imipenem. However, his condition was deteriorated and he died on the 8th day of hospitalization. He had positive CMV-PCR results of blood and sputum obtained on the day before death. The sputum TB culture yielded slowly growing nontuberculous mycobacterium (NTM) after one month of incubation.

## Conclusion

CMV, fungus, NTM and TB should all be considered in HIV patients without therapeutic response to PCP.