中文題目：嚴重 A 型流感同時合併肺麴菌症與鳥型複合分支桿菌感染: 一病例報告
英文題目：Co-infections of Severe Influenza A with Pulmonary Aspergillosis and *Mycobacterium avium* Complex: Report of A Case
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Background: An influenza epidemic peak in February 2016 caused chaotic situations to the health care facilities and record-breaking death toll in Taiwan. Early identification of *Aspergillus* co-infection in severe influenza patient might persuade physicians for early antifungal therapy. The clinical role of co-infection of atypical mycobacterium has been rarely reported.

Case Report: The 80 y/o woman of hypertension had just discharged from a regional hospital due to pneumonia. However, she suffered from progressive dyspnea in recent days. She was brought to our Emergency Room on February 10, 2016. As desaturation with a SaPO2 of 89% under non-rebreathing mask use, she was intubated with endotracheal tube. Influenza A and B rapid antigen tests of throat swab revealed negative. CXR showed bilateral lung consolidation. Other data included WBC, 18,900/ul with 6.3% lymphocyte; Hb, 8.3 g/dL; platelet count 221,000/ul; BUN, 26 mg/dL; creatinine, 0.91 mg/dL; albumin, 2.7 g/dL; CRP, 202.4 mg/L; procalcitonin, 4.64 ng/ml; and d-dimer, 2691.7 ng/mL(FEU). Then she was admitted to the intensive care unit (ICU) on February 11. The cardiac echo revealed concentric left ventricle (LV) hypertrophy with adequate LV systolic function (LVEF, 68.8%). Antibiotic therapy with piperacillin-tazobactam (pip/tazo) and levofloxacin had been used for 5 days. CXR showed mildly partial resolution of infiltrates of both lung fields. The initial endobronchial sputum culture revealed *Candida albicans*. *Aspergillus* galactomannan Ag serial tests on February 16, 24 and 27 revealed 1.00, 3.18, and 1.06 (normal, < 0.5). Then, the throat FluA-PCR revealed influenza A (positive). Follow-up sputum culture yielded carbapenem-resistant *Acinetobacter baumannii*. Sputum acid-fast stains and GeneXpert MTB/RIF tests were negative. Therefore, oseltamivir, tigecycline and voriconazole were given form February 17 in addition to pip/tazo. CXR showed significant resolution of infiltrates bilaterally. The patient was transferred to ordinary ward on February 23. She was discharged uneventfully on February 29 with subsequent oral voriconazole for a total of 2-week antifungal therapy. The sputum cultures for mycobacterium (x 3 sets) all yielded *Mycobacterium avium* complex, which was not treated during the whole clinical course.

Conclusion: Severe influenza A pneumonia co-infected with invasive pulmonary aspergillosis (IPA) has been reported in the literature. Detection of *Aspergillus* galactomannan Ag should be indicated for the severe influenza patients at least with poor or partial response to antibiotic and anti-influenza therapy. Adequate antifungal therapy in time may achieve good clinical outcome for IPA of severe influenza patients. Our case highlights the need of early alert for physicians to realize the association of IPA and severe influenza, whereas the clinical roles of co-existent nontuberculous mycobacteria remain uncertain.