Clinical evaluation of chronic pulmonary aspergillosis in patients with nontuberculous mycobacterial lung disease

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Background
Nontuberculous mycobacterial lung disease (NTM-LD) is increasingly recognized as an important predisposing condition for the development of chronic pulmonary aspergillosis (CPA).

On the other hand, NTM-LD is also reported increasing globally. Especially in Japan, the incidence rate of NTM-LD was estimated to be 14.7 cases per 100,000 person-years in 2014, which is 2.6 times the incidence rate reported in 2007, its rapid increase is problem.

Purpose
To clarify clinical features of chronic pulmonary aspergillosis (CPA) in patients with nontuberculous mycobacterial lung disease (NTM-LD).

Methods
We retrospectively investigated the medical records of 64 patients with CPA treated with the antifungals at Tokyo National Hospital from October 2013 to September 2018, who had been previously or simultaneously diagnosed with NTM-LD.

Summary and discussion
The causative NTM species in NTM-LD with CPA included Mycobacterium avium complex (MAC; 82%) and Mycobacterium kansasii (8%). M. kansasii was a significantly higher proportion in NTM-LD with CPA compared to the whole NTM (7.9% vs 3.3%, respectively, P=0.0431).

Most CPA associated with tuberculosis develops after TB treatment, NTM and Aspergillus is likely to coexist in the lesion compared to M. tuberculosis and Aspergillus. At the time of combined diagnosis of the diseases, fever and hemoptysis were common symptoms. The imaging demonstrated the thickened walls of cysts and cavities in half of the cases and infiltration also in half. Since many imaging findings are common, it is difficult to distinguish both diseases. If symptoms such as blood sputum and fever appear without deterioration of sputum mycobacterial findings during NTM treatment, it was considered necessary to examine the imaging findings in detail and to repeatedly confirm the serodiagnosis of Aspergillus antibodies.

Though regular checking of Aspergillus antibodies in NTM cases may make early diagnosis of CPA complications, we need attention because CPA by Aspergillus niger is often negative for Aspergillus antibodies.

Twenty-six cases have already died by April 2019; with median survival time of 12 months after the diagnosis of the combined diseases.

Conclusion
Since many of CPA patients in association with NTM-LD were severe with poor prognosis, comorbid pulmonary aspergillosis should be noted as early as possible in severe cases of NTM-LD.