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## LETTER TO THE EDITOR

# Clinical significance of *Mycobacterium abscessus* isolates at a medical center in Northern Taiwan

Sir,

Recently, Huang et al<sup>1</sup> reported the clinical manifestations of *Mycobacterium abscessus* infection in the October 2010 issue of the *Journal of Microbiology, Immunology and Infection*. In that study, the authors described 40 patients in whom *M abscessus* was isolated from January 2006 to December 2008, but only 22 of the 40 patients had *M abscessus* infections at their hospital in central Taiwan. We wondered whether similar findings would be observed in other parts of Taiwan. Therefore, we performed this study to investigate the clinical significance of *M abscessus* isolates in northern Taiwan.

This study was conducted at National Taiwan University Hospital, a tertiary care center with 2500 beds and 6000 daily clinical visits in northern Taiwan. From January 2009 to December 2009, all of the clinical isolates of *M abscessus* were identified by retrospective review of the hospital's Mycobacteria Laboratory database. Preparation of the different clinical specimens for mycobacterial culture followed the recommended guidelines, as previously described.<sup>2</sup> Prepared specimens were cultured by inoculation onto Middlebrook 7H11 selective agar with antimicrobials (BBL, Becton Dickinson, Sparks, MD, USA) and by the fluorometric BACTEC technique (BACTEC MGIT 960 System; Becton Dickinson, Sparks, MD, USA). Acid-fast bacilli stains were done on submission of the specimens and repeated on positive cultures from the BACTEC system. *M abscessus* was identified to the species level using conventional biochemical methods.

Pulmonary disease caused by *M abscessus* was diagnosed if the clinical, radiological, and microbiological characteristics of the patient met the criteria established in 2007 by the American Thoracic Society and Infectious Diseases Society of America for nontuberculous mycobacteria (NTM) diseases.<sup>3</sup> Disseminated disease was diagnosed when *M abscessus* isolates were recovered from more than one body site or from blood or bone marrow. Lymphadenitis was diagnosed when culture of a biopsy specimen or discharge

from a lymph node yielded *M abscessus*. Skin and soft tissue disease was defined as culture of wound discharge or a biopsy specimen of a lesion involving skin or subcutaneous tissue yielding *M abscessus*. The diagnosis of genitourinary *M abscessus* infections was defined as a positive *M abscessus* culture from a genitourinary specimen with associated symptoms of genitourinary infection.

During the study period, a total of 3160 specimens from 1279 patients were positive for mycobacteria. Among them, NTM were isolated from 1576 specimens of 901 patients and *Mycobacterium tuberculosis* was isolated from 1584 specimens of 378 patients. A total of 272 specimens were positive for *M abscessus* from 174 patients. The most common specimens positive for *M abscessus* were respiratory specimens (including 237 sets of sputum specimens from 152 patients and 6 bronchoalveolar lavage fluids from 6 patients), followed by skin and soft tissue (15 specimens from 9 patients).

Among the 174 patients with *M abscessus* treated at our hospital during the study period, colonization was found in 76.4% ( $n = 133$ ), whereas only 23.6% ( $n = 41$ ) of patients had *M abscessus* disease as defined by the official American Thoracic Society and Infectious Diseases Society of America statement.<sup>3</sup> Pulmonary infections ( $n = 20$ ) caused by *M abscessus* were the most commonly diagnosed disease, followed by skin and soft tissue infections ( $n = 9$ ), chronic otitis ( $n = 5$ ), keratitis ( $n = 3$ ), peripheral lymphadenitis ( $n = 2$ ), and each one of bacteremia, and genitourinary tract infection.

In this study, we observed several significant findings. First, *M abscessus* comprised about one-fifth of all NTM isolates. This result is consistent with our previous study in which we reported the prevalence of *M abscessus* among NTM isolates at 17% during a 9-year survey period.<sup>2</sup> Second, although *M. abscessus* was one of the common clinical isolates among NTM, most of them caused only colonization. In the study by Huang et al,<sup>1</sup> 18 of 40 *M abscessus* isolates were considered to have caused only colonization. Therefore, clinicians should carefully evaluate the clinical

significance of *M abscessus* isolates in common practice in this era of increasing incidence of NTM isolation in Taiwan.<sup>2</sup> Third, in addition to the most common type of *M abscessus* disease, pulmonary infection, the clinical manifestations of *M abscessus* infections were inconsistent.

The main limitation of these studies was the potential lack of correct identification of *M abscessus* isolates. *M abscessus* identification performed on the basis of the conventional methods is insufficient and further studies including 16S RNA, *rpoB*, or *hsp65* gene sequencing to distinguish among *M abscessus*, *M bolletii*, and *M massiliense* should be conducted.<sup>4</sup>

In conclusion, we characterized the epidemiology of *M abscessus* disease in Taiwan. Although most (about three quarters) *M abscessus* isolates was not associated with clinical disease in humans, we found that *M abscessus* caused a broad spectrum of diseases, including respiratory, skin, and soft tissue infections.

## References

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