Letter to the Editor

Clinical Significance of *Mycobacterium avium* Complex Isolates at a Medical Center in Northern Taiwan

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We read with great interest the case report by Shen et al1 in the July 2010 issue of *Journal of the Formosan Medical Association*. In that retrospective study, the authors described the clinical significance of *Mycobacterium avium* complex (MAC) that had been isolated from respiratory specimens at a medical center in southern Taiwan. We wonder whether similar findings could be noted in other parts of Taiwan. Therefore, we would like to report our observation about nontuberculous mycobacteria (NTM) in northern Taiwan.

From January to December 2009, a total of 1,756 specimens from 898 patients positive for NTM were identified at the Mycobacteriology Laboratory at the National Taiwan University Hospital, a 2,500-bed tertiary care center in northern Taiwan that receives more than 6,000 daily clinical visits. The most common NTM isolates identified were MAC (579 isolates from 279 patients), followed by *Mycobacterium abcesssus* (275 isolates from 174 patients), and *Mycobacterium fortuitum* (258 isolates from 186 patients). Among the 279 patients from whom MAC was isolated, MAC colonization was noted in 210 (75.3%) patients, and MAC caused NTM disease in 69 (24.7%) patients, based on the 2007 criteria of the American Thoracic Society/Infectious Diseases Society of America.2 Those findings were consistent with those from our previous study conducted during the period January 2000 to December 2008 at the same institution.3 In that study, a total of 9,204 NTM isolates were recovered from 4,786 patients, and 2,761 isolates from 1,515 patients were confirmed to be MAC. Among those patients, MAC colonization was noted in 1,282 (84.6%) and MAC caused NTM diseases in 233 (15.4%). The annual prevalence of MAC colonization ranged from 80.0% (2000) to 87.4% (2006). These findings are consistent with those reported by Shen et al,1 namely that only 12 (22.2%) of 54 patients with positive MAC isolates had clinically significant MAC pulmonary disease.

In addition, trend analysis has revealed that the annual incidence (per 100,000 inpatients and outpatients) of MAC colonization increased

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significantly from 1.9 in 2000 to 12.3 in 2008 ($p<0.05$). The annual incidence (per 100,000 inpatients and outpatients) of MAC disease also increased significantly from 0.5 in 2000 to 2.1 in 2008 ($p<0.05$) (Figure). As for NTM pulmonary infection, MAC (35.3%) was the most common causative agent of pulmonary NTM infection during the study period. The annual incidence (per 100,000 inpatients and outpatients) of pulmonary MAC infection significantly increased from 1.63 in 2005 to 2.00 in 2008 at the National Taiwan University Hospital. Therefore, in addition to the increasing incidence of MAC colonization, we have demonstrated that the incidence of MAC diseases has gradually increased over time in northern Taiwan. This phenomenon might be attributable to increasing vigilance and awareness of these bacteria as human pathogens, improvements in diagnostic methods, and the increased population of immunocompromised patients.

In conclusion, although most MAC isolates do not cause disease in humans, the incidence of MAC isolates in clinical specimens and the incidence of MAC diseases are gradually increasing in northern Taiwan.

References