# A 5-year review of *Mycobacterium abscessus* susceptibility in a tertiary hospital in Thailand

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## BACKGROUND

*Mycobacterium abscessus* is one of the common rapid growing mycobacteria (RGM). It can cause chronic nodular or cavitary lung disease in adults with bronchiectasis or cystic fibrosis. It also causes skin and soft tissue infection following penetrating injury or an unsterile skin procedure. In the past decade, it was found to be a predominant pathogen of disseminated infection in patients with anti-interferon-gamma autoantibodies. The 2018 clinical and laboratory standards institute (CLSI) guideline suggested that amikacin, cefoxitin, ciprofloxacin, clarithromycin, doxycycline, imipenem, linezolid, meropenem, moxifloxacin, trimethoprim-sulfamethoxazole and tobramycin should be tested against RGM. The recommended treatments are intravenous amikacin plus imipenem or cefoxitin or tigecycline plus clarithromycin. We aimed to review the antimicrobial susceptibility of this organism in our hospital.

## METHODS

We retrospectively performed a descriptive review the minimal inhibitory concentration (MIC) of clinical isolates of *M. abscessus* from 2013 to 2018. We excluded the isolates that duplicated from the same patient from analysis.

## RESULTS

We found 267 isolates of *M. abscessus*. Eighty-four isolates were tested for MICs. Of these, 4 isolates were excluded due to duplication. The remaining 80 isolates were included for analysis. The susceptibility results were as follows.

| Antimicrobial agents (N) | Susceptible (%) | Intermediate (%) | Resistant (%) |
|---|---|---|---|
| **Amikacin (80)** | 86.25 | 7.50 | 6.25 |
| **Cefoxitin (80)** | 3.75 | 31.25 | 65 |
| **Ciprofloxacin (79)** | 1.27 | 3.80 | 94.93 |
| **Clarithromycin (80)** | 97.50 | 0 | 2.50 |
| **Doxycycline (32)** | 0 | 9.38 | 90.62 |
| **Imipenem (80)** | 0 | 15.00 | 85.00 |
| **Linezolid (26)** | 50.00 | 23.08 | 26.92 |
| **Moxifloxacin (26)** | 0 | 7.69 | 92.31 |
| **Trimethoprim-sulfamethoxazole (80)** | 2.5 | 0 | 97.5 |
| **Tobramycin (24)** | 4.17 | 20.83 | 75 |

## CONCLUSION

MICs of cefoxitin and imipenem were high. Most isolates also demonstrated high MICs of doxycycline, linezolid, trimethoprim-sulfamethoxazole, tobramycin, ciprofloxacin and moxifloxacin. In contrast, most of MICs of amikacin and clarithromycin were in susceptible range. These findings may be used to guide the treatment regimen although clinical outcomes of each drug are still to be investigated.

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