28th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES
Madrid, Spain
21 – 24 April 2018

P1589 Subspecies distribution, clinical relevance and antibiotic susceptibility of Mycobacterium abscessus complex strains

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Background: *Mycobacterium abscessus* complex (MABC) is a rapidly growing mycobacterium that usually causes respiratory, soft tissue and disseminated infections in both immunosuppressed and immunocompetent persons and encompasses three subspecies: *M.abscessus subsp. abscessus* (MAB), *M.abscessus subsp. bolletii* (MBO) and *M.abscessus subsp. massiliense* (MMA). This study aimed to investigate the clinical significance and antimicrobial susceptibility of MABC strains.

Materials/methods: The clinical isolates MABC were collected from different patients from 1/2007 to 10/2017. Identification was conducted by sequencing of *hsp65*. The bacteriological criteria recommended by the American Thoracic Society (ATS) for NTM lung disease were used to determine the clinical relevance of MABC isolates. The MIC (μg/ml) was determined with the standard broth microdilution method according to CLSI (document M24-A2) using a commercial assay (RAPMYCOI, TREK Diagnostic systems). Isolates were tested against: clarithromycin (CLA), moxifloxacin, trimethoprim-sulfamethoxazole, linezolid, amikacin, ciprofloxacin, imipenem, doxycycline, cefoxitine, tobramycin and cefepime using CLSI recommended breakpoints. To investigate possible inducible clarithromycin resistance (CLA-IR), the incubation period was extended up to 14 days. To elucidate the molecular mechanisms of clarithromycin resistance, the *erm(41)* gene was sequenced.

Results: During the study period, 20 MABC strains were recovered: 12 MAB, 5 MBO and 3 MMA. Fifteen strains were recovered from respiratory specimens and 12 strains (60%) were considered as clinically significant; seven of them came from respiratory samples and five from blood specimens and patients with disseminated disease. All strains were susceptible to amikacin and 13 (65%) were susceptible to linezolid. The MMA strains were susceptible to CLA, having a 276-bp deletion in *erm(41)* gene, compared with other MABC, 12 of which (7 MAB and 5 MBO) were CLA-IR, having a thymidine at 28th position of *erm(41)* (T28 polymorphism), while 5 MAB strains were susceptible to CLA having the C28 polymorphism. All strains were resistant to the other drugs tested.

Conclusions: Of the recovered MABC strains, 60% were clinically significant and 25% were recovered from blood. The C28 or T28 polymorphisms of *erm(41)* is concordant with CLA susceptibility or inducible resistance, respectively; the prolonged to 14 days incubation period in routine susceptibility testing combined with sequencing is efficient for detecting this phenotype.