# ANTIBIOTIC SUSCEPTBILITY OF NONTUBERCULOUS MYCOBACTERIA FROM PATIENTS IN CRETE, GREECE

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## OBJECTIVE

Therapy of NTM infections is problematic due to the intrinsic resistance of these bacteria to many of the available antimicrobial drugs. The aim of the present study is to investigate the antibiotic susceptibilities of nontuberculous mycobacteria (NTM) isolated from patients in Crete, Greece, over the decade 1/2002-12/2011.

## METHODS

- Antibiotic susceptibility testing was performed by E-test (AB Biosisk, Solna, Sweden). Eleven rapidly growing (RGM) and 45 slowly growing (SGM) NTM were tested against 14 antimicrobials, including 9 common ones: amikacin (AMI), ciprofloxacin (CIP), levofloxacin (LEV), moxifloxacin (MXF), tigecycline (TGC), linezolid (LIN), trimethoprim/sulfamethoxazole (SXT) and the macrolides clarithromycin and azithromycin. The *M. avium complex* (MAC) isolates were tested only against macrolides, LIN and MXF. For SGM, rifampicin, isoniazid, ethambutol, streptomycin and ethionamide were utilized, while for RGM susceptibility testing tobramycin, doxycycline (DOX), cefoxitin, imipenem and amoxicillin/clavulanic acid were also used. Isolates were characterized as susceptible or resistant according to the breakpoints published in the literature.

## RESULTS

- The 100% of RGM were susceptible to AMI and TGC, 40% were susceptible to macrolides while only 10% of them were susceptible to LIN and DOX. CIP, LEV and MXF were effective against 28, 30 and 52% of the NTM isolates respectively, with a difference in susceptibilities between SGM and RGM. The susceptibilities for SGM were 24, 29 and 53% and for RGM were 45, 36, and 45% respectively. The 99% of MAC isolates were susceptible to macrolides but only 4% of them were susceptible to LIN and MXF. SXT was highly effective while TGC was ineffective against the SGM species. LIN was very effective against *M. parascrofulaceum, M. kansasii* and *M. gordonae*. *M. kansasii* was the most susceptible NTM species *in vitro*.

## CONCLUSIONS

- High variation in susceptibility within NTM species confirms the need for accurate identification and susceptibility testing for the clinically relevant strains. The contribution of the microbiological laboratory is important in order to provide patient-specific susceptibility data to guide therapy against such stains. A better understanding of the relationship between the in vitro activity of the antimicrobial drugs and their efficacy in the treatment of NTM infections will be achieved by the collaboration of clinicians and microbiologists.