

**COMPARATIVE *IN VITRO* ACTIVITY OF MOXIFLOXACIN, LINEZOLID, STREPTOMYCIN,
ISONIAZID, RIFAMPIN, AND ETHAMBUTOL AGAINST DIFFERENT SUBTYPES OF
MYCOBACTERIUM KANSASII OTHER THAN SUBTYPE I**

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Purpose of the Study: *M. kansasii* is a heterogeneous group where several subtypes have been identified. This heterogeneity may have pathogenic, clinical and therapeutic implications. To date, there are not antimicrobial *in vitro* studies in *M. kansasii* subtypes other than subtype I. The aim of this study was to determine the susceptibilities of these microorganisms to moxifloxacin, linezolid, and four conventional antimycobacterial drugs.

Methods: A total of 21 clinical isolates (one per patient) of several *M. kansasii* other than subtype I were tested for antimicrobial susceptibilities by the BACTEC 460 system (CLSI). *M. kansasii* ATCC 12478, and *Staphylococcus aureus* ATCC 29213 were used for quality control. Four antimicrobial drugs were studied with different critical concentrations: isoniazid (0.4, 1, 5 and 10 mg/L), rifampin (1 mg/L), streptomycin (6 mg/L), and ethambutol (5 mg/L). The antimicrobial concentration ranges for MIC determination were as follows: moxifloxacin, 0.06 to 0.5 mg/L; and linezolid, 0.5 to 4 mg/L.

Results: All strains tested were identified as *M. kansasii* subtypes II (n=14), III (n=2), IV (n=2), and V (n=3) and were resistant to isoniazid at a concentration of 0.4 mg/L. Seventeen isolates (81%) were inhibited by 1 mg of isoniazid per L. High level of resistance to isoniazid (> 10 mg/L) was observed in one isolate. All *M. kansasii* (subtypes II, III, IV and V) strains tested were susceptible to the remaining antimicrobial agents studied, including rifampin. The MIC₉₀ (mg/L) were as follows: moxifloxacin 0.12 (range: 0.06 to 0.25), and linezolid 2 (range: 0.5 to 2).

Conclusions: The moxifloxacin was the most active antimicrobial agent tested. All subtypes of *M. kansasii* other than subtype I showed a decreased susceptibility to isoniazid, but high level of resistance was uncommon. The other conventional antimycobacterial drugs and linezolid showed a good *in vitro* activity against these microorganisms.