Title: Treatment of refractory mycobacterium avium complex lung disease with a moxifloxacin-containing regimen

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Body: Moxifloxacin (MXF) has in vitro and in vivo activity against Mycobacterium avium complex (MAC) in experimental models. However, no data are available concerning its treatment effect in patients with MAC lung disease. The aim of this study was to evaluate the clinical efficacy of an MXF-containing regimen for the treatment of refractory MAC lung disease. Patients with MAC lung disease who were diagnosed between January 2002 and December 2011 were identified from our hospital database. We identified 41 patients who received MXF for ≥4 weeks for the treatment of refractory MAC lung disease. A total of 41 patients were treated with an MXF-containing regimen because of a persistent positive culture after at least 6 months of clarithromycin-based standardized antibiotic therapy. The median duration of antibiotic therapy before MXF administration was 410 days (interquartile range [IQR], 324-683 days). All patients had culture-positive sputum when MXF treatment was initiated. The median duration of MXF administration was 332 days (IQR, 146-547 days). The overall treatment success rate was 29% (12/41) and the median time to sputum conversion was 91 days (IQR, 45-190 days). A positive sputum acid-fast bacilli smear at the start of treatment with MXF containing-regimens was an independent predictor of an unfavorable microbiologic response. Our results indicate that MXF may improve treatment outcomes in about one-third of patients with persistently culture-positive MAC lung disease who fail to respond to clarithromycin-based standardized antibiotic treatment. Prospective studies are required to assess the clinical efficacy of MXF treatment for refractory MAC lung disease.