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Second-Line Drug Susceptibilities of Multidrug-Resistant Mycobacterium tuberculosis Isolates in Aegean Region - Turkey

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Abstract: Aim: The emergence of multidrug-resistant tuberculosis (MDR-TB) is increasing, and the standard short-course regimen used for the treatment of TB is likely to be ineffective against MDR-TB, leading to the need for second-line drugs. In such situations, drug susceptibility testing is necessary to select an appropriate treatment regimen. Unfortunately, there are few studies showing the pattern of the second-line drug resistance in Turkey. We aimed to analyze the resistance to second-line anti-tuberculosis drugs of MDR strains of Mycobacterium tuberculosis isolated from the Aegean region of Turkey. Materials and Methods: In this study, drug susceptibility testing of 40 MDR-TB strains isolated from the Aegean region of Turkey was performed using the BACTEC 460 TB radiometric system. Capreomycin, ethionamide, kanamycin, amikacin, clofazimine and ofloxacin were tested in 1.25 µg/ml, 1.25 µg/ml, 5.0 µg/ml, 1.0 µg/ml, 0.5 µg/ml, and 2.0 µg/ml concentrations, respectively. Results: The results showed that 37.5% of the strains were resistant to ethionamide, 25% to capreomycin, 5% to kanamycin, amikacin and ofloxacin, and 2.5% to clofazimine. One (2.5%) of the 40 MDR-TB cases was defined as extensively drug-resistant tuberculosis (XDR-TB). Conclusions: The results of the study indicate that the high rates of resistance to ethionamide and capreomycin may be a problem in the treatment of patients with MDR-TB; XDR-TB is not yet a serious problem in our region.

Key Words: Mycobacterium tuberculosis, multidrug-resistant tuberculosis (MDR-TB), second-line drugs, susceptibility tests, extensively drug-resistant tuberculosis (XDR-TB)

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