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Susceptibility of Mycobacterium tuberculosis Strains to First-Line and Second-Line Antituberculosis Drugs in Ege University Hospital

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Abstract: Recently tuberculosis has shown a speedy worldwide spread. The incidence of drug-resistant Mycobacterium tuberculosis is increasing in almost all industrialized and developing countries. The epidemiology of multiple drug resistance varies in different regions and countries. The aim of this study was to determine the activities of first-line (isoniazid, rifampin, ethambutol and streptomycin) and second-line (kanamycin, para-aminosalicylic acid, ethionamide and capreomycin) antituberculosis drugs on 100 various clinical isolates of M. tuberculosis. Mycobacterium tuberculosis ATCC 27294, ATCC 35838, ATCC 35825 and ATCC 35837 were used for internal quality control. First-line drug resistant strains were isolated from 10 clinical specimens. Six of them showed resistance to a single drug and four to more than one first-line drug. All of the single-drug resistant strains were resistant to isoniazid. Of 100 isolates, 56 were resistant to capreomycin, 41 to kanamycin, 12 to para-aminosalicylic acid and four to ethionamide. All of the first-line drug-resistant strains were found to be susceptible to para-aminosalicylic acid and ethionamide. In view of the above findings, we suggest that clinicians should be well-informed about the current local epidemiology of tuberculosis, and health care institutions should maintain up-to-date drug susceptibility data on the local isolates of M. tuberculosis.

Key Words: Mycobacterium tuberculosis, isoniazid, rifampin, ethambutol, streptomycin, kanamycin, para-aminosalicylic acid, ethionamide, capreomycin, susceptibility

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