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What Should be Prescribed for Patients with Suspected Multidrug-Resistant Tuberculosis in the Absence of Drug Sensivity Results

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Tuberculosis (TB) is one of the most important preventable diseases worldwide. Every year, 8 million new cases of TB are reported by WHO (world health organization). Case finding, treatment, and monitoring are the 3 major factors that prevent morbidity, mortality, and occurrence of drug resistance (1). Multidrug-resistant tuberculosis or MDR -TB is a form of tuberculosis, caused by mycobacterium tuberculosis organism, that is resistant to isoniazid (INH) and rifampin (RIF) (1, 2). It is reported that 5% of patients with tuberculosis have MDR-TB. There are various reasons for this phenomenon including adverse drug reaction, failure to complete treatment, cost of treatment, stigma about TB, and disease mismanagement (1-3). Nonetheless, other important factors are delay in treatment and genetic factors (4). Treatment of MDR-TB is very difficult, especially in patients with HIV, pregnant women, and children. Inappropriate treatment and mismanagement can lead to life-threatening disease and death (3, 5). MDR- TB should be treated and managed by an experienced physician. Drug susceptibility of mycobacterium tuberculosis can be defined by DNA-based method or culture, however, sometimes, conducting tests to prove drug- resistant TB can take weeks (1, 3, 6). Therefore, physicians should start treatment with an empirical regimen as soon as possible when they are faced with a suspected case of multidrug-resistant TB. Then, when the test results are out, the treatment regimen should be adjusted according to the results (3, 5-7). Selecting drugs to treat MDR-TB should be done based on drug susceptibility results and TB drug resistance patterns in each region. This regimen should be a combination of second-line anti-TB drugs that are more toxic than first line anti -TB drugs and should be used for longer durations (at least 20 months). WHO guideline recommends using at least 4 second-line drugs including (an injectable drug) kanamycin, a new fluoroquinolone (levofloxacin, moxifloxacin), prothionamide, and para-aminosalicylic acid or cycloserine when the physician starts the empirical therapy and does not know the results yet (3, 5, 7). In addition to pyrazinamide, fluoroquinolones (such as moxifloxacin and levofloxacin) are the most effective second-line drugs for MDR-TB. Despite the few reports of MDR-TB, which are also resistant to these agents, linozolid is recommended in cases of fluoroquinolone-resistant MDR-TB (5-8). Thus, it is of importance that these patients be monitored closely throughout treatment. Directly observed therapy (DOT) should be used in the treatment of drug-resistant TB to ensure adherence and prevention of changing MDR -TB to XDR-TB. In conclusion, it is recommended that patients with MDR-TB refer to physicians experienced at treating this disease.

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