



Treatment of Multidrug-resistant Tuberculosis

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Multidrug-resistant tuberculosis (MDR-TB) is caused by *Mycobacterium tuberculosis* resistant to both isoniazid and rifampicin with or without resistance to other drugs. Globally, about three percent of all newly diagnosed patients have MDR-TB. The proportion is higher in patients who have previously received antituberculous treatment reflecting the failure of programs designed to ensure complete cure of patients with tuberculosis. Previous incomplete and inadequate treatment is the most important factor leading to the development of MDR-TB.

Treatment of MDR-TB can be difficult, and may necessitate the use of second-line drugs or resectional surgery. Therefore, management of patients with MDR-TB should only be undertaken by experienced clinicians at centers equipped with reliable laboratory service for mycobacterial culture and *in vitro* sensitivity testing. Good patient outcomes depend upon a rapid and accurate diagnosis, and the institution, administration, and monitoring of proper therapy. In the treatment of MDR-TB, residual first-line drugs, such as ethambutol, pyrazinamide and streptomycin must be appropriately combined with additional second-line drugs, guided by prior treatment history, results of susceptibility testing and an evaluation of the patient's adherence. Fluoroquinolones represent the only substantial therapeutic advance in the last 20 years. Many patients with MDR-TB respond to appropriate chemotherapy.

However, patients with sputum cultures positive for longer than three months despite appropriate therapy or with isolates resistant to all of the first-line oral agents have a worse prognosis. These patients may benefit from surgical intervention. Patients with localized pulmonary disease which can be completely removed at operation are most likely to benefit from surgery.