Extensively Drug-Resistant Tuberculosis Treatment Disappointing Outcomes for Global Public Health

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Tuberculosis (TB) is an airborne, globally common bacterial infection, easily spread by coughing, and can be fatal. It often lies dormant in the human body for many years; most of the 11 million infected people in the United States are not even aware of its existence. The only available vaccine has limited effectiveness and is not prescribed in most European and American countries. Today, the biggest risk for TB is not HIV/AIDS, which led to a surge in the late 1980s. The most challenging issues in this regard are multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB) (1). Researchers followed up the South African patients with XDR-TB, who had been a part of an earlier study looking at early treatment outcomes in 2010. The study said that despite lengthy treatment with a median of eight anti-TB drugs, treatment outcomes were dismal: of 107 patients, only 17 were cured or completed the treatment after 24 months, and 12 had similar favorable outcomes five years after the treatment initiation. Forty nine patients died and in 25, the treatment was failed after 24 months of follow up. After 60 months, 79 patients died and in 11 the treatment was failed. Of the 45 patients released into the community, 19 did not achieve sputum culture conversion (2). Of the 79 patients who died, 32 were infected with HIV. "Twenty four (69%) of 53 patients living with HIV and receiving antiretroviral therapy died by the end of follow-up, compared with 46 (73%) of 63 patients not infected with HIV and all nine patients with HIV not taking antiretroviral therapy" the study said. A CD4 count of less than 200 was also associated with the increased mortality, the study reported. The use of clofazimine in the treatment regimen seemed to reduce the risk of death (2). "Long-term outcomes in patients with XDR-TB are poor, irrespective of HIV status, although antiretroviral therapy has improved survival in patients with HIV" the report stated. "Many patients in our cohort who were discharged from hospital had positive sputum cultures, failed the treatment, and had no further therapeutic options. These patients survived for long periods living in the community and were likely to contribute to the community-based spread of XDR-TB" (2). "Their study should serve as another urgent alarm for global TB control: MDR disease in all its forms is an out-of-control problem with potentially vast and devastating repercussions for global public health" they announced. "Clearly, drug regimens that are more effective and better tolerated are needed to improve the adherence, decrease the mortality, and prevent the amplification of TB drug resistance on treatment" (2). As cases of XDR-TB have previously been reported in Iran, both the reports and commentaries call for policymakers and national control programs to urgently develop strategies for applying the existing public health instruments for TB control. They also argue the community-based interventions as well as creation of palliative care facilities to minimize the disease spread by patients with treatment failure (3). Since XDR-TB is resistant to first- and second-line drugs, treatment options are seriously limited. Therefore, it is vital to manage TB control programs properly to prevent further progression of MDR-TB and mitigate the emergence of XDR-TB (4). The mortality rate of patient with XDR-TB infection is about 14%-20%, which may reach to 98% in HIV coinfected patients. In a retrospective study in Iran, a successful outcome was observed in 81.2% of patients with MDR-TB in comparison with 41.6% of patients with XDR-TB. These findings indicated that patients with XDR-TB had higher probability of treatment failure and mortality (5).

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