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Title: Effectiveness of the WHO regimen for treatment of multidrug resistant tuberculosis (MDR-TB)

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Body: BACKGROUND MDR-TB treatment has not been evaluated in randomized trials; hence observational cohorts are important to assess their effectiveness. We report the MDR-TB treatment outcomes and predictors of unfavourable outcomes using retrospective data from Médecins Sans Frontières supported projects in five countries. METHODS Patients included were enrolled until the end of 2009 and followed on a monthly basis. Treatment regimens and outcomes definitions were based on WHO guidelines. We defined unfavourable outcomes as deaths and failures. RESULTS Of 1977 patients, 1092 (55.2%) had resistance to 1st line drugs only, 442 (22.4%) pre-extensively drug resistance (pre-XDR) due to resistance to injectable agents, 47 (2.4%) pre-XDR due to ofloxacin resistance, 44 (2.2%) XDR and 352 (17.8%) had no results for 2nd line drugs. 20% of patients defaulted. After exclusion of defaulters, treatment success was 79% for patients without resistance to 2nd line drugs and 37% for XDR-TB patients. History of incarceration, past TB treatment history, body mass index <18.5Kg/m2, high bacilli load, resistance to fluoroquinolones, amplification of resistance to injectable agents and/or to fluoroquinolones during treatment, prescription of capreomycin instead of kanamycin and treatment interruption due to side-effects were independent predictors of unfavourable outcomes. CONCLUSION Treatment outcomes were mainly dependant on the presence of baseline resistance to 2nd line drugs, disease progression and patient’s tolerability to treatment. It is likely that MDR-TB patients with less resistance and less advanced disease might benefit from a lighter regimen. Kanamycin should be the preferred injectable drug when possible.