

## **Association of MDR-TB treatment outcomes and HIV status in Zimbabwe: A retrospective study**

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### **Abstract:**

MDR-TB has created an additional burden in TB control due to limited treatment options and the generally poor treatment outcomes. We investigated association of MDR-TB treatment outcomes and HIV status in Zimbabwe. The study was a retrospective cohort study of case records from National TB Surveillance System of MDR-TB patients (>16 years) who were culture proven at diagnosis and started treatment between January 2013 and December 2016. Cox proportional hazard regression models were used to assess risk factors associated with mortality. Kaplan–Meier curves were used to determine whether survival probabilities differed for HIV-co-infected and HIV-negative MDR-TB patients. 201 case records were considered for study; 174 cases (87%) started MDR-TB treatment; 11% died before treatment initiation, and 2% did not start treatment. Among 174 cases who were analyzed, 92 were HIV-positive and 82 were HIV-negative. Sixty-three (36%) died during follow up. Number of deaths was not significantly different in patients with or without HIV infection ( $p = 0.17$ ). Age (25–59 years) (hazard ratio 2.58, 95% CI 1.44–6.77,  $p = <0.0001$ ) and previous TB treatment (hazard ratio 4.52, 95% CI 1.94–14.2,  $p = 0.001$ ) were independent predictors of death. Fewer deaths occurred in HIV-infected MDR-TB patients on highly active antiretroviral treatment than those who were not given this therapy ( $p = 0.01$ ). Treatment outcomes for MDR-TB are likely to be negatively affected by untreated HIV, individual factors and health system factors. National TB control programmes need to be tailored at improving these determinants of MDR-TB and HIV diagnosis and treatment, to improve treatment outcomes.