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Predictors of time to poor treatment outcomes in patients with multi-drug resistant tuberculosis in Northwest Ethiopia

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Background: Multidrug-resistant tuberculosis (MDR-TB) is an emerging public health problem. The aim of this study was to assess MDR-TB treatment outcomes and determine predictors of time to poor treatment outcomes.

Methods: We used a retrospective cohort study design. The study participants were all MDR-TB patients who had complete records and who were enrolled at Gondar University Hospital since the establishment of the MDR-TB program in 2010. A Cox-proportional hazard model was used to identify the predictors of time to poor treatment outcomes, which were defined as death or treatment failure.

Results: Of the 242 patients who had complete records, 131 (54%) were cured, 23 (9%) completed treatment, 31 (13%) died, 4 (2%) experienced treatment failure, 27 (11%) were lost to follow up, 6 (2%) transferred out, and 20 (8%) were still on treatment at the time of analysis. The overall cumulative probability survival of the patients at the end of treatment (which was 24 months in duration) was 80% (95%CI: 70%, 87%). The proportion of patients with poor treatment outcomes increased over time from 6% per person-year (PY) during 2010–2012 to 12% per PY during 2013–2015. The independent predictors of time to poor treatment outcome were: Being anemic [AHR=4.20; 95%CI: 1.11, 15.90] and being a farmer [AHR=2.24; 95% CI: 1.03, 4.88].

Conclusion: Overall, in northwest Ethiopia, the MDR-TB treatment success rate was high. However, poor treatment outcomes have gradually increased since 2012. It would be beneficial to provide nutritional supplementation, especially for farmers during the course of MDR-TB treatment.

Key Message: High MDR-TB treatment success can be achieved in resource-limited settings; poor treatment outcomes have gradually increased; and nutritional supplementation and early diagnosis and treatment of MDR-TB would be beneficial to improve poor treatment outcomes.

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