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Risk factors for mortality in tuberculosis patients: a ten-year electronic routine record review in a South African province

CITATION

Heunis C, Kigozi G, Chikobvu P, Van der Merwe S & Van Rensburg D. 2016. Risk factors for mortality in tuberculosis patients: a ten-year electronic routine record review in a South African province. *BMC Public Health, 17*: 38. DOI: 10.1186/s12889-016-3972-2

ABSTRACT

Background: Since 1990, reduction of tuberculosis (TB) mortality has been lower in South Africa than in other high-burden countries in Africa. This research investigated the influence of routinely captured demographic and clinical or programme variables on death in TB patients in the Free State Province.

Methods: A retrospective review of case information captured in the Electronic TB register (ETR.net) over the years 2003 to 2012 was conducted. Extracted data were subjected to descriptive and logistic regression analyses. The outcome variable was defined as all registered TB cases with 'died' as the recorded outcome. The variables associated with increased or decreased odds of dying in TB patients were established. The univariate and adjusted odds ratios (OR and AOR) together with their corresponding 95% confidence intervals (CI) were estimated, taking the clustering effect of the districts into account.

Results: Of the 190,472 TB cases included in the analysis, 30,991 (16.3%) had 'died' as the recorded treatment outcome. The proportion of TB patients that died increased from 15.1% in 2003 to 17.8% in 2009, before declining to 15.4% in 2012. The odds of dying was incrementally higher in the older age groups: 8-17 years (AOR: 2.0; CI: 1.5-2.7), 18-49 years (AOR: 5.8; CI: 4.0-8.4), 50-64 years (AOR: 7.7; CI: 4.6-12.7), and ≥65 years (AOR: 14.4; CI: 10.3-20.2). Other factors associated with increased odds of mortality included: HIV co-infection (males – AOR: 2.4; CI: 2.1-2.8; females – AOR: 1.9; CI: 1.7-2.1) or unknown HIV status (males – AOR: 2.8; CI: 2.5-3.1; females – AOR: 2.4; CI: 2.2-2.6), having a negative (AOR: 1.4; CI: 1.3-1.6) or a missing (AOR: 2.1; CI: 1.4-3.2) pre-treatment sputum smear result, and being a retreatment case (AOR: 1.3; CI: 1.2-1.4).

Conclusions: Although mortality in TB patients in the Free State has been falling since 2009, it remained high at more than 15% in 2012. Appropriately targeted treatment and care for the identified high-risk groups could be considered.