

RISK FACTORS OF MULTIDRUG-RESISTANT TUBERCULOSIS: A META-ANALYSIS

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ABSTRACT

Background: In 2014, WHO published internationally applicable programmatic management guidelines for drug-resistant TB. Several studies, however, found inconsistent results for several multidrug Tuberculosis (MDR-TB) risk variables. This study sought to estimate the risk factors of MDR-TB using a systematic review and meta-analysis.

Subjects and Method: A systematic review and meta-analysis were conducted following the PRISMA guideline. The research questions were formulated using the PICO format. Population: MDR-TB patients. Intervention: Diabetes mellitus (DM), direct contact with TB patient, smoking, alcohol consumption, positive-confirmed HIV, and rural area. Comparison: No DM, no contact with TB-positive patient, non-smoker, no alcohol consumption, negative confirmed HIV, and urban. Outcome: MDR-TB. Articles of case-control studies published between 2013 and 2023 were searched from Google Scholar, PubMed, Science Direct, Scopus, and ResearchGate databases. Pooled adjusted odds ratios were calculated using RevMan 5.3.

Results: The meta-analysis included 30 case-control studies. The total sample was 10,553 TB patients. The risk of MDR-TB increased with Diabetes Mellitus (aOR= 1.47; 95% CI= 1.31 to 1.64; p<0.001), direct contact with TB patient (aOR= 2.18; 95% CI= 1.74 to 2.73; p<0.001), smoking (aOR= 2.27; 95% CI= 1.96 to 2.64; p<0.001), alcohol consumption (aOR= 1.64; 95% CI= 1.45 to 1.89; p<0.001), positive-confirmed HIV (aOR= 3.16; 95% CI= 2.50 to 4.00; p <0.001), and rural area (aOR= 1.72; 95% CI= 1.55 to 1.90; p<0.001).

Conclusion: The risk of MDR-TB increases with Diabetes Mellitus, direct contact with TB patient, smoking, alcohol consumption, positive-confirmed HIV, and rural area.

Keywords: diabetes mellitus, smoking, alcohol consumption, HIV, rural-urban, multidrug-resistant tuberculosis

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