Impact of diabetes mellitus on tuberculosis drug resistance in new cases of tuberculosis

Parvaneh Baghaei *, Payam Tabarsi, Afshin Moniri, Majid Marjani, Ali Akbar Velayati

Clinical Tuberculosis and Epidemiology Research Center, National Research Institute of Tuberculosis and Lung Diseases (NRITLD), Masih Daneshvari Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

ARTICLE INFO

Article history:
Received 19 November 2014
Accepted 23 November 2014
Available online 6 January 2015

Keywords:
Anti-TB drug resistance
Tuberculosis
Diabetes mellitus
MDR-TB

ABSTRACT

Background and objective: Diabetes mellitus (DM) has an effect on many aspects of tuberculosis (TB). The aim of this study is to determine the impact of DM on anti-tuberculosis drug resistance in new cases of TB patients.

Materials and methods: A case-control study was conducted on all newly diagnosed pulmonary TB adult patients with DM as cases and without DM as controls who were hospitalized and treated at the National Research Institute of Tuberculosis and Lung Disease (NRITLD) from May 2013 to October 2013. A molecular resistance test for rapid detection of resistance to isoniazid and rifampin was done for all smear-positive TB patients. A multivariate analysis was performed to determine the impact of DM on any anti-TB drug resistance.

Results: 45 TB cases with DM and 45 TB cases without DM were included. TB cases with DM were more likely to be older (61 vs. 47 years, p = 0.001). Two TB–DM patients had multidrug-resistant TB (MDR-TB) (4.4%) compared with zero cases of MDR-TB in the control group, and TB–DM cases were resistant to at least one drug (11.1% vs. 4.4%, p = 0.43). DM remained significantly associated with any drug resistance (OR: 6.32, 95% CI: 1–40.72) in multivariate analysis.

Conclusion: New TB patients with DM are at increased risk of anti-TB drug resistance. More studies are needed to confirm these results.

© 2015 Published by Elsevier Ltd. on behalf of Asian-African Society for Mycobacteriology.

* Corresponding author at: Masih Daneshvari Hospital, Darabad, Niyavaran Str, Tehran 1955841452, Iran. Tel./fax: +98 21 26109590.
E-mail address: pbaghaei@gmail.com (P. Baghaei).