

Prevalence of Multidrug Resistant *Mycobacterium tuberculosis* by *Mycobacteria growth indicator tube* in Golestan province, North of Iran

Livani S (MSc)

Microbiology, Islamic Azad University,
Tonekabon branch, Infectious diseases
research center of Golestan University of
medical sciences

Mirinargesi M (PhD)

Assistant professor, Department of Biology,
Islamic Azad University, Tonekabon branch

Nemati-Shoja E (MSc)

Infectious diseases research center ,Golestan
University of medical sciences

Rafiei S (MD)

Health center of Golestan province-
Golestan University of medical sciences

Taziki M (BSc)

Health center of Golestan province,
Golestan University of medical sciences

Tabarraei A (PhD)

Assistant professor, Infectious diseases
research center, Golestan University of
medical sciences

Ghaemi EA (PhD)

Associated professor, Infectious diseases
research center, Golestan University of
medical sciences

Corresponding Author: Ghaemi, E. A.

E-mail: eghaemi@yahoo.com

Abstract

Background and objectives: Identification and monitoring of multidrug-resistant *Mycobacterium tuberculosis* strains (MDR) is highlighted by the high risk of their spreading in different areas. Prevalence of these strains was evaluated in Golestan province in northeast of Iran.

Material and Methods: Drug susceptibility testing to Isoniazid and rifampin was carried out for 148 clinical samples that had grown in *Mycobacteria growth indicator tube* (MGIT) system, according to the manufacturer's instructions (Becton-Dickinson, USA). The association of drug resistance frequency with demographic characteristics and growth time were investigated. The appropriate statistical tests, X^2 and student T-test were performed for comparison of these variants. A p value >0.05 was considered significant in all cases.

Results: The turnaround time required for growth of *Mycobacterium tuberculosis* in MGIT system was between 2 to 55 days (mean 16.3 ± 10.4 days). Of all samples studied, 17.6% and 3.4% were resistant to Isoniazid and rifampin, respectively, and 3.4% (5 samples) were MDR (CI 95%; 1-6%). The turnaround time required for determining MDR cases was 9.6 days. No statistically significant association was found between the resistance to the drugs and none of the factors including sex, age, type of clinical sample, and positivity of the smear.

Conclusion: The prevalence of MDR in the studied region was determined to be 3.4% which is similar to the country-wide evaluations. The turnaround time for *Mycobacterium growth* and anti drug susceptibility result can be shortened by MGIT method.

Key words: *Mycobacterium tuberculosis*, *Mycobacterium Growth Indicator Tube*, Multidrug Resistant