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Comparing the Frequency of *Mycobacterium Tuberculosis* With Direct Microscopy and Culture Methods

Reza Akhavan [1], Zahra Meshkat [2*], Saeed Amel Jamehdar [3]

[1] School of Medicine, Mashhad University of Medical Sciences, Mashhad, IR Iran

[2] Women's Health Research Center, Mashhad University of Medical Sciences, Mashhad, IR Iran

[3] Microbiology and Virology Research Center, Mashhad University of Medical Sciences, Mashhad, IR Iran

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Dear Editor,

Tuberculosis has been a threat for the human's life all over the history. While other epidemics last only weeks to moths, tuberculosis (TB) epidemic has been continuing for centuries.

Twenty two countries were announced as the countries with the highest incident rate including 80% of new cases. Our country, Iran, is not among theses 22 (1); however, tuberculosis is one of the greatest health problems in Iran. Although the principles of treatment had been known since 50 years and short course treatment is practiced for 20 years, yet many patients are not diagnosed and don't receive proper treatment in many regions of the country (2).

Although many countries have conducted several studies about tuberculosis prevalence, there are few such studies done in our country. For a good estimation of the disease burden we first have to diagnose it correctly. According to the shortage of resources in our country, the most diagnosis measures practiced in the area are direct microscopy for acid fast bacilli (AFB). In this study, we evaluated the prevalence of smear positive samples and compared the results with the results obtained from culture method.

Our data showed the overall sensitivity and false negative results of microscopic examination were 66.0% and 34.0%, respectively. In addition, the overall specificity and false positive results would be 94.6% and 5.4%, respectively. The measure of agreement between obtaining results by microscopy and culture methods was 0.484. There was a report for comparing the positive samples in microscopy and culture methods regarding the culture as a gold standard method and AFB were found in only 46% of culture positive smears that is lower than our results (3). In other studies AFB were found in the range of 53%-80% of the first smear of positive sputum samples (4). In Down study, the sensitivity and specificity of the sputum smears compared to the culture

* *Corresponding author:* Zahra Meshkat, Women's Health Research Center, Mashhad University of Medical Sciences, Mashhad, IR Iran. Tel: +98-5118012453, Fax: +98-5118002960, *E-mail:* meshkatz@mums.ac.ir

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method were 80% and 94.1%, respectively, which is in agreement with our results (5). Our data renders the microscopic method as a non-expensive and suitable method for diagnosis of tuberculosis.

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The authors report no conflicts of interest. The authors are responsible for the content of the paper.

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Authors' Contribution

None declared.

References

1. World Health Organization. Global tuberculosis control: a short update to the 2009 report. 2009. *World health organization: geneva*. 2010.
2. Amani Firouz BJ, Sabzevari A, Garousi B, Nahan Moghadam N. Epidemiology of tuberculosis in ardabil, 2001-2005. *JAUMS*. 2007.
3. Nelson SM, Deike MA, Cartwright CP. Value of examining multiple sputum specimens in the diagnosis of pulmonary tuberculosis. *J Clin Microbiol*. 1998;**36**(2):467-9.
4. Saleem S, Shabbir I, Iqbal R, Ullah Khan S. Value of three sputum smears microscopy in diagnosis of pulmonary tuberculosis. *Pak J Med Res*. 2007;**46**(4):1-5.
5. Down JA, O'Connell MA, Dey MS, Walters AH, Howard DR, Little MC, *et al.* Detection of Mycobacterium tuberculosis in respiratory specimens by strand displacement amplification of DNA. *J Clin Microbiol*. 1996;**34**(4):860-5.