

## Prevalence of *Mycobacterium tuberculosis* in the samples referred to the tuberculosis research laboratory in Mashhad Ghaem Hospital during 2005-2006

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### ABSTRACT

**Background:** Tuberculosis continues to be a serious public health problem causing nearly three million deaths per year all over the world. Despite major improvement in diagnosis, it is not possible to control the disease in the absence of surveillance treatment, and follow-up programs.

**Objectives:** This research was designed to study the frequency of *Mycobacterium tuberculosis* among specimens referred to the tuberculosis research laboratory in Qaem Hospital, Mashhad, North- East of Iran in 2005-2006.

**Materials and Methods:** 3207 samples (1331 sputum, 1209 bronchial lavage, 69 ascitis aspirates, 52 urine samples, 30 CSF samples, 25 joint aspirates and 15 wound secretions) were cultured according to standard procedure and examined microscopically using Ziehl Neelsen staining method.

**Results:** 536 samples (16.7%) recognized as positive for *Mycobacterium tuberculosis*. (bronchial lavage 18.6%, sputum 17%, gastric lavage 13.3%, CSF 10%, ascitis aspirates 7.2%, wound 6.25%, pleural aspiration 4.5%). No *Mycobacterium tuberculosis* was found in urine samples and joint aspirates.

**Conclusion:** Considering reported prevalence of 13 cases per 100,000 in the Iranian population, these results are acceptable but more preventive measures should be sought for controlling TB.

**Key words:** *Mycobacterium tuberculosis*, Ziehl Neelsen staining, prevalence

### INTRODUCTION

Tuberculosis (TB) is one of the oldest diseases known to affect mankind (1). Robert Koch identified *Mycobacterium tuberculosis* as the cause of infection during his research in 1882 and introduced it as an infectious disease. Tuberculosis is a chronic infectious disease caused by *Mycobacterium tuberculosis* and one of the leading causes of mortality worldwide (1,2). Almost one- third of the world population (about 2 billion) is infected with *Mycobacterium tuberculosis* and during the past decade even industrialized countries have faced a resurgence of tuberculosis. It is the second major cause of death by infectious disease throughout the world, killing millions (3,4). The

disease mostly involves lung, but almost all organs can be affected by this infection. Extra- pulmonary sites account for 20% of cases seen in HIV- negative subjects but are much more common among HIV seropositive subjects (1).

The disease has high prevalence in Iran and eastern Iran seems to be the most affected region. An estimated, annual cumulative incidence of tuberculosis in this country has indicated 13 cases per 100,000 (3, 5). Since the epidemiological studies of tuberculosis are the main basis for preventive planning (6), the most important aim of this study was to investigate the epidemiology and incidence of TB among samples referred to the Ghaem Medical Center as the largest university hospital in eastern Iran.

### MATERIALS AND METHODS

Between 2006 and 2007, 3743 samples were obtained from patients referred to the microbiology

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