Tuberculosis (TB) is still a major human health problem, especially in developing countries. It has been estimated that third of the world's population is latently infected with Mycobacterium tuberculosis (MTB). Identification of the highly specific RD1 region of the MTB genome has enabled development of the new diagnostic for MTB infection. IFN-γ Release assay (IGRA) are therefore more specific than conventional tuberculin skin test (TST), i.e. do not yield false positive results after BCG vaccination or infection with non-tuberculous mycobacteria. The number of nosocomial TB infections, the frequency of such outbreaks in psychiatric hospitals is estimated to be approximately 3.5 times that of general hospitals. In this study, the prevalence of latent tuberculosis infection (LTBI) in patients who were hospitalized with diagnosis of chronic schizophrenia and to compare the diagnostic value of tuberculosis skin test (TST) and QuantiFERON-TB Gold (QFT-G) were investigated.

METHODS

In our study, M. tuberculosis specific ESAT-6 and CFP-10 antigen specific interferon gamma (IFN-γ) cytokine levels were investigated by QFT-G method (cut off value ≥ 0.35 kU/l) in male (n=71, mean age 55.12±10.03) and female (n=95, mean age 58.21±11.08) patients who had been hospitalized for at least three years with diagnosis of chronic schizophrenia. All of the patients were on antipsychotic treatment and free of immune-suppressive treatment. TST was performed using 5 TU PPD-RT 23 (TW80) according to Mantoux method and diameter of enduration (cut off value ≥ 10 mm) was measured after 72 hours of inoculation. The patients were evaluated clinically and radiologically.

RESULTS

TST was positive in 99 (%59.63) and QFT-G was positive in 88 (%53.01) patients (Figure 1). There was a low agreement between the two tests (κ=0.38). Four patients with active disease were diagnosed based on radiological and clinical findings and the institution was notified. The frequencies of both of the active disease (2.4%) and LTBI (63%) were found to be very high (Table 1).

DISCUSSION

This study revealed that chronic schizophrenic patients are at high-risk group for tuberculosis. A high rate of active tuberculosis and LTBI prevalence was observed in our schizophrenic patient group. The active tuberculosis infection was diagnosed according to TST and QFT-G and confirmed by clinical and radiological evaluation. However microbiological culture, microscopic evaluation and DNA fingerprinting of the strains were not performed in 4 patients diagnosed with active tuberculosis infection. Thus it could not be confirmed whether these individuals were infected by an outbreak in the hospital (micro-epidemy) or single cases infected in different places. Tuberculosis outbreak in psychiatric clinics can be prevented by the use of QFT-G tests and therapeutic interventions with low side effect profiles. The use of QFT-G for screening and early prophylaxis in high-risk individuals such as patients and health-care personnel in contact with infected individuals, can be more useful in psychiatric clinics of Turkey with very high rates of BCG vaccinated individuals. All in all, the prevalence of LTBE and tuberculosis disease were found relatively high. Thus, the regular QFT-G screening in psychiatric hospitals may be useful tool for the prevention TB outbreaks.

REFERENCES