Latent tuberculosis infection among a large cohort of medical students at a teaching hospital in Italy

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Background

The surveillance of latent tuberculosis infection (LTBI) in both healthcare workers and healthcare students attending teaching hospitals is considered an important tool for tuberculosis (TB) prevention worldwide. Very few studies have investigated the epidemiology of TB infection and the associated risk factors among undergraduate students in areas with a low incidence of TB. The aim of the present study was to estimate the prevalence of LTBI and evaluate the potential risk-factors associated with this condition in a large cohort of medical students in a country with a low incidence of TB.

Methods

In a cross-sectional study, 1511 eligible subjects attending the Medical School of the University of Genoa were actively called to undergo the Tuberculin Skin Test (TST). All the TST positive cases were also tested with an Interferon-Gamma Release Assay (IGRA) to confirm the diagnosis of LTBI. Information for all eligible students about age, gender, nationality, birth in a high or low TB incidence country, past and recent medical history, current health status, year of attendance at the Medical School, Bacille Calmette Guérin (BCG) vaccination history, exposure to active TB cases both at a professional (inside and outside the teaching hospital) and at community level (i.e., family, social activity) were collected using a standardized form.

Results

One-thousand three-hundred and two (1302/1511 = 86.2%) students underwent TST testing and completed the questionnaire. The prevalence of TST positives was 0.8% (11/1302) and LTBI diagnosis was confirmed in only 2 (0.1%) cases. Professional exposure to active TB patients (OR 21.7, 95% CI 2.9 – 160.2; p-value = 0.003) and previous BCG immunization (OR 28.3, 95% CI 3.0 – 265.1; p-value = 0.003) resulted the only conditions independently associated with TST positivity.

Conclusions

Despite the prevalence of LTBI among Italian medical students resulted very low, an occupational risk of TB infection still exists in countries with low circulation of Mycobacterium tuberculosis. This scenario confirms the current recommendation for regular screening of all healthcare students before clinical training, to guarantee an optimal control of TB.
Key messages

- Very few studies have investigated the epidemiology of latent tuberculosis infection and the associated risk factors among undergraduate students in areas with a low incidence of tuberculosis.
- Despite the prevalence of latent tuberculosis infection among medical students resulted very low, our results confirm the recommendation for screening all healthcare students before clinical training.