

THE INCIDENCE OF LATENT TUBERCULOSIS INFECTION DETECTED BY WHOLE BLOOD INTERFERON GAMMA-BASED ASSAY AMONG HEALTH CARE WORKERS IN POLAND

U. Demkow^{1, 2}, B. Broniarek-Samson¹, M. Filewska¹, B. Białas-Chromiec¹, E. Augustynowicz-Kopeć¹, Z. Zwolska¹ and J. Kuś¹

¹Institute of Tuberculosis and Lung Diseases, Warsaw, Poland; ²Warsaw Medical University, Warsaw, Poland

Health care workers (HCW) are at risk for developing active tuberculosis (TB). However, the prevalence of latent tuberculosis infection (LTBI) in this group is unknown in Poland, due largely to the problems associated with interpreting TST in BCG immunized population. The goal of the study was to test the prevalence of LTBI in 117 HCW (88 females and 29 males) and to compare the groups at different levels of risk (44 TB lab employees, 23 clinicians on TB wards, 29 analytical lab employees, 21 primary care physician). All participants were interviewed using a questionnaire and underwent interferon-gamma whole blood assay (Quantiferon-Tb-Gold – QTF) as well as a tuberculin skin test (TST). The questionnaire provided information on possible risk factors for LTBI, including demographic and socioeconomic details, the presence of BCG scars, degree of occupational exposure (year of training and active practice in the TB, job category, non-medical tuberculosis contact). The average prevalence of LTBI among HCW was 24%. A higher risk of acquiring LTBI disease was associated with certain work locations (TB lab workers – 50%, TB ward clinicians – 34%). All microbiologists processing sputum from TB patients without modern safety facilities were infected. Gender was not associated with a positive test result. There was a significant correlation between the level of IFN- γ and age ($P < 0.001$) and with the length of employment ($P < 0.01$). The correlation between the skin test induration diameter and the magnitude of INF gamma response was highly significant ($P < 0.001$). Consistency of both tests was 82%. HCW, particularly those working in the TB service, are at increased risk of infection, suggesting that appropriate preventive strategies should be undertaken. IFN-gamma assays have a useful role in screening HCW who are BCG vaccinated.