

EFFECT OF BCG VACCINATION AND NON-TUBERCULOUS MYCOBACTERIUM INFECTION ON INTERFERON GAMMA SPECIFIC ASSAY AND A TUBERCULIN SKIN TEST AMONG CHILDREN WITH A TUBERCULOSIS CONTACT IN SURABAYA, INDONESIA

Landia Setiawati¹, Anang Endaryanto¹, Annie Kusumadewi¹ and
Pudji Lestari²

¹Child Health Department, ²Public Health Department, Faculty of Medicine,
Airlangga University, Dr Soetomo Hospital, Surabaya, Indonesia

Abstract. The tuberculin skin test (TST) as a diagnostic tool for tuberculosis (TB) infection is used in many countries, including Indonesia, but lacks specificity. Interferon- γ is a highly specific assay because it is not influenced by previous BCG vaccination or non-tuberculous mycobacteria (NTM) infections. We aimed to study the effect of BCG vaccination and NTM infection on the results of the interferon- γ specific assay and TST among children with a TB contact. We carried out a cross-sectional study of children at an outpatient clinic in Surabaya, Indonesia. We studied 37 children aged 1-15 years having a household contact with an acid-fast bacilli positive adult index case. BCG vaccination was determined by the presence of a BCG scar. A PPD RT23 2 tuberculin test was used for the TST. ESAT-6, CFP-10, and TB 7.7(p4) antigens were used for the interferon- γ assay by ELISA. Gastric aspirates were cultured in Lowenstein-Jensen media. A comparison of the two diagnostic tools among children aged 1-5 years without a BCG scar, revealed high agreement, while children with a BCG scar it revealed disagreement. Among children aged >5 years with or without a BCG scar the comparisons revealed disagreement. Among children aged >5-10 years, a comparison of the two diagnostic tools among NTM positive and negative children, there was a disagreement in results. Among children aged 1-5 years, the TST was influenced by a BCG scar. Infection with NTM had no influence on the results of the TST among children aged >5-10 years, while in children aged 1-5 years and >10 years the results could not be determined in this study.

Keywords: tuberculin skin test, interferon- γ specific assay, BCG scar, non-tuberculous mycobacteria

Correspondence: Landia Setiawati, Department of Child Health, Dr Soetomo Hospital, Faculty of Medicine, Airlangga University, Jl. Prof Moestopo 6-8, Surabaya 60285, Indonesia.
Tel: 0315501614, Fax: 0315501748,
E-mail: lucialandia@yahoo.com