Serodiagnosis of tuberculosis : a study comparing three specific mycobacerial antigens

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摘要

Abstract

To compare the efficacy of different mycobacterial specific antigens and to assess the applicability of the combination of several different antigens in the diagnosis of tuberculosis, three ELISA tests derived by Antigen 60, 38kda, and Kp90 were evaluated in 594 Chinese patients (312 patients with active pulmonary tuberculosis and 282 control subjects). Quantified levels of sensitivity and specificity were compared with those in the nontuberculous control groups. Antigen 60 IgG (sensitivity and specificity, 80.77 and 88.4%) was more antigenic and more effective in its determination than was 38kda IgG (sensitivity and specificity, 64.21 and 80.74%) and Kp90 IgA (sensitivity and specificity, 62.58 and 66.3%). The clinical significance of the difference, however, was not striking: negative predictive value of Antigen 60, 38kda, and Kp90 was 93, 86 and 83%, respectively; positive predictive value of Antigen 60, 38kda, and Kp90 was 71, 54, and 39%, respectively. Combination of different antigens could improve the sensitivity and specificity by no more than 10%, with the sacrifice of the opposite parameter by no less than 20%. The same improvement in sensitivity could be easily achieved by adjusting the cutoff values in the ELISA test by a single antigen. We conclude that the sensitivity and specificity of presently available antigens for serodiagnosis of tuberculosis still remains limited at around 80%, which makes it a poor diagnostic tool for disease confirmation. In low incidence areas, its clinical value may be useful in disease exclusion. A combination of several different antigens provides no more improved diagnostic yield than what can be provided by cutoff value adjustment in a single antigen serologic test.