Students' Corner
Letter to the Editor

Future prospects for the utility of interferon assays in tuberculosis diagnosis

Madam, tuberculosis remains an important global health problem. For Pakistan, the control of the disease should be a top priority as Pakistan is the 7th leading country with tuberculous disease.[1] Tuberculosis remains a diagnostic dilemma for physicians in endemic areas. Its ability to involve virtually any organ of the body along with its high prevalence in the region warrants its assignment to the list of differential diagnoses for a multitude of presentations. The pursuit of a definitive diagnosis for tuberculosis is imperative because of the consideration of side effects of anti-tuberculous therapy in the recipient. On the other hand, it is important to treat this condition because of its potential for curability; failure to treat can have devastating effects on individuals with this disease. Moreover, it is important to correctly recognize individuals with the disease from amongst the pool of infected individuals; especially where prior BCG vaccination can confound the results of commonly employed diagnostic assays.

The traditional tuberculin skin test has remained a widely employed tool for diagnosing tuberculosis with various "risk-stratified" cut-offs being followed in various regions of the world for different sub-groups of the population.[2] However, the tuberculin skin test is fraught with shortcomings such as high dependency on the reader and the need for patients to return to get the test read after an appropriate time period;[2] both of these factors are important considerations in developing countries.

Interferon gamma assay is an alternative assay that is now rapidly emerging as a modern diagnostic tool for tuberculosis.[2] For any screening test, sensitivity is one of the most important parameters. Many studies have reported that the sensitivity and specificity of interferon assays is higher as compared to tuberculin skin test as far as latent tuberculosis is concerned.[2-4] Limited data has also shown an association between interferon gamma response and progression of latent tuberculosis to active tuberculosis.[3] Mycobacterial antigen six kDa early secreted antigenic target (ESAT6) and culture filtrate protein 10 (CFP10) can be used to detect M. tuberculosis associated interferon gamma responses. In a study conducted in Pakistan recently, it was seen that ESAT6-induced interferon gamma and CXCL9 responses discriminated the severity of tuberculous infections.[5]

However, the cost of this assay and the juxtaposed need for appropriate laboratory facilities and personnel are factors that ostensibly preclude its wider utility in developing countries.[2] Based on available literature, interferon gamma assays may not be conclusively recommended as a replacement for tuberculin skin testing because of lack of studies in endemic areas. Future studies done in endemic countries will, therefore, be instrumental in delineating the superiority of interferon gamma assays over the tuberculin skin test.

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