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Comparison of tuberculin skin test (TST) and quantiferon test (QFT) for detection of latent TB infection among health care workers (HCWs) in a tertiary care hospital in Riyadh, Saudi Arabia

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Background: Latent TB Infection is a common finding among HCWs in the middle east, that is usually discovered on routine pre-employment examination or during regular health check, it needs a course of anti-tuberculous drug medication for months with subsequent side effects. Tuberculin Skin Test (TST) is the traditional testing method for diagnosing LTBI, but it has a known high rate of false positive with subsequent needless loss of time, efforts, loss of productivity and side effects. QFT test has a higher sensitivity and specificity.

Aim: To determine the sensitivity, specificity, positive and negative predictive value of TST versus QFT Test as a diagnostic tool for latent TB among new hires of health care workers at KFMC, Riyadh, Saudi Arabia.

Methods: A descriptive study of 268 new HCWs agreed to participate, questionnaire with socio-demographic data and work history was filled, and both test were done TST and QFT test. Recent BCG vaccination and TST result of 5 mm or less were excluded, since there is a low positive rate.

Results: Sensitivity and specificity of TST at standard 10mm or more to be positive, was 100 % and 53.4% as compared to QFT test. Using different cutoff measurements of size of TST indurations specificity was improved at the expense of sensitivity; at 13mm or more, sensitivity, specificity and κ were 95.5%; 73.2 and 0.611 respectively; while at 15mm or more it was 74.8%; 84.1% and 0.605 respectively. Frequency distribution of sizes of induration according to QFT test results and ROC curve showed that at 13 mm or more specificity would be improved to 70 percent approximately and sensitivity to be still at 90% approximately.

Conclusion: When comparing TST and QFT, Rates of True negatives and Agreement were improved from (specificity = 53.4%) and (κ=0.536), to (Specificity=63.9%) and (κ=0.611) when using a different cut off point for induration sizes of 13 mm or more, rather than the traditional 10 mm or more cutoff point. Large scale study is required to confirm such findings in Middle Eastern health care settings.

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