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**Title:** Evaluation of cut-off values of QuantiFERON-TB Gold, interferon gamma inducible protein-10 and tuberculin skin test in active tuberculosis diagnosis

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**Body:** Aim: The diagnostic accuracy of interferongamma- based assays for Mycobacterium tuberculosis infection may be improved by using lower cut-off values for the tuberculin skin testing (TST), QuantiFERON-TB Gold (QFT) and Interferon gamma inducible protein (IP)-10. Methods: A total of 70 adult TB patients and 81 healthy controls were included for this study. Three assays, TST, QFT and (IP)-10, were evaluated for their diagnostic performance with respect to different cut-off values. Test cut-offs were established based on receiver operating characteristic curve analysis. Results: The sensitivities of the assays were: TST 40 %, QFT 87 % and IP-10 85 %, while their specificities were TST 58 %, QFT 71 % and IP-10 74 %. Both QFT and IP-10 were significantly more specific than TST (both  $P < 0.001$ ), but were similar to each other ( $P > 0.5$ ). Receiver operating characteristic analysis revealed that a cut-off value of 0.29 IU/ml for QFT and 1857 IU/ml for IP-10 maximises specificity without significant loss of test sensitivity. Using lower cut-off values for TST, however, also increased the sensitivity of the assay but resulted in a significant decrease in specificity. Conclusions: Lower cut-off values for TST, QFT and (IP)-10 increased the sensitivity of each assay, but a lower cut-off value for QFT and (IP)-10 could specificity be maintained.