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Interferon-gamma release assay as a diagnostic biomarker for tuberculosis associated uveitis

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T-SPOT.TB is a new interferon-gamma release assay used to diagnose tuberculosis (TB). We studied the use of T-SPOT.TB as a diagnostic biomarker for TB-associated uveitis (TAU). A Prospective cohort study of 162 consecutive new patients with clinical ocular signs suggestive of TAU, seen over a 1 year period at a single tertiary center. All subjects underwent investigations to rule out underlying disease, including T-SPOT.TB and tuberculin skin test (TST). Twenty-one subjects with underlying disease and 3with interdeterminate T-SPOT.TB results were excluded. Those with T-SPOT.TB or TST positive results were referred to infectious diseases physician for evaluation. Anti-TB therapy (ATT) was prescribed if required. Patients' treatment response andrecurrence were monitored for 6 months post-completion of ATT, if given; or 1 year if no ATT was given. The mean age of study cohort (n=138) was 46.8±15.3 years. Majority were Chinese (n=80, 58.0%) and female (n=75, 54.3%). TST was more sensitive than TSPOT. TB (72.0% vs. 36.0%); but T-SPOT.TB was more specific (75.0% vs. 51.1%) for diagnosing TAU.

Patients with either a T-SPOT.TB (1.44; 95% CI, 0.86-2.42) or TST (1.47; 95% CI, 1.12-1.94) positive result are more likely to have TAU. The accuracy of diagnosing TAU increases when both tests are used in combination (AUC = 0.665; 95% CI, 0.533-0.795). Patients with both tests positive are 2.16 (95% CI, 1.23-3.80) times more likely to have TAU. Negative T-SPOT.TB or TST results do not exclude TAU (negative likelihood ratios <1.0). In conclusion, we found T-SPOT.TB is more specific but less sensitive than TST for diagnosing TAU. We recommend performing both tests to improve the accuracy in diagnosis.

Biography

Dr Marcus Ang is currently working at the Singapore National Eye Center, while pursuing a Masters in Clinical Investigation(National University of Singapore) for clinical research. He is involved in research under the Singapore Eye Research Institute to study infectious diseases and immunology of the eye as well as novel ocular drug delivery technologies developed in conjunction with Nanyang Technological University (Singapore). He has published in several journals such as Ophthalmology, American Journal of Ophthalmology, Eye, Cornea and Journal of Glaucoma.