

**BLOOD VS. SKIN TEST: COMPARISON OF TWO INTERFERON-GAMMA RELEASE ASSAYS WITH THE TUBERCULIN SKIN TEST IN THE DIAGNOSIS OF MYCOBACTERIUM TUBERCULOSIS INFECTION AMONG RENAL DIALYSIS PATIENTS**

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**Context:** Renal dialysis patients are at high risk for tuberculosis (TB). Interferon gamma (IFN- $\gamma$ ) assays that assess immune response to specific TB antigens offer potential advantages over tuberculin skin testing (TST) in screening such patients for *Mycobacterium tuberculosis* infection.

**Objective:** Determine whether IFN- $\gamma$  assay results are more closely associated with recent TB exposure than TST results.

**Design and Setting:** Prospective cohort investigation of patients potentially exposed to a case of infectious TB at a hemodialysis center in California in 2003.

**Participants:** Patients without a history of TB were asked to participate; 104 (49% foreign-born, median age of 55 years) of 124 enrolled. Patients underwent initial and repeat testing with QuantiFERON<sup>®</sup>-TB Gold (QFT-G) and ELISPOT tests, and TST.

**Main Outcome Measure:** Prevalence of positive test results and identification of factors associated with positive results and test result discordance.

**Results:** Twenty-nine persons had positive TST results, 23 had positive QFT-G results, and 30 had positive ELISPOT results. TB case contacts and non-contacts were similar with regard to sex and foreign-birth, but contacts were significantly younger (52 vs. 59 years,  $p=0.05$ ). In multivariate analysis, controlling for age and other significant risk factors, positive QFT-G results were associated with contact ( $p=0.03$ ) and older age ( $p=0.03$ ); whereas, contact had no influence on TST results. Positive ELISPOT results showed a trend association with contact ( $p=0.07$ ). When considering seating distance between patients and the TB case, closely-sitting contacts were more likely to have positive IFN- $\gamma$  assay results ( $p=0.05$  for QFT-G,  $p=0.01$  for ELISPOT). Positive TST results were associated only with foreign-birth ( $p=0.02$ ) and having a TST performed in the previous year ( $p=0.05$ ).

**Conclusions:** Positive IFN- $\gamma$  assay results were more closely associated with recent TB exposure than were positive TST results. QFT-G and ELISPOT might offer a better method for detecting TB infection in renal dialysis patients.