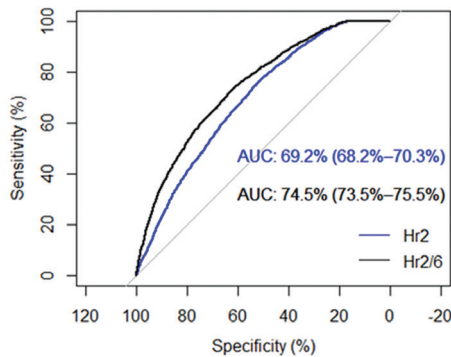


Figure. Receiver-operating characteristic (ROC) of TDM to identify in silico HIV/TB patients with low PZA blood concentrations (as defined by the AUC₀₋₂₄ less than 363 mg/hr/L).



Disclosures. All authors: No reported disclosures.

789. Comparison of Interferon-γ Release Assays (IGRAs) for Diagnosis of Latent or Active Tuberculosis in Cancer Patients

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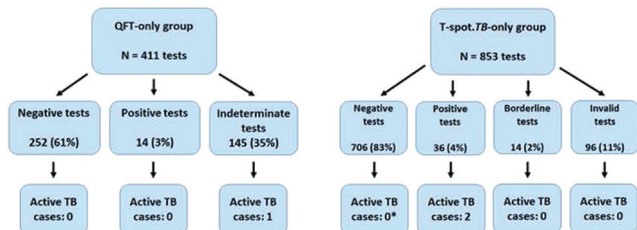
Background. Patients with certain types of cancer are at increased risk for progression from latent tuberculosis infection (LTBI) to active tuberculosis (ATB) because of immunosuppression. The purpose of this study was to compare the utility of the two commonly used IGRAs, QuantiFERON-TB Gold[®] (QFT) and T-spot.TB[®] (T-spot.TB), for diagnosis of LTBI or ATB in cancer patients.

Methods. We identified patients who had an initial IGRA during 2013 and 2014 at our institution. Along with demographic information, collected clinical data included type of underlying cancer or other condition, reason for testing, diagnosis of ATB following testing, and absolute lymphocyte count (ALC) at the time of testing. IGRA results (positive, negative, borderline, or indeterminate/invalid) were compared between patients who underwent testing with either QFT or T-spot.TB.

Results. A total of 356 patients had 411 QFT tests done, while 737 patients had 853 T-spot.TB tests performed. The most common underlying malignancies in the QFT and T-spot.TB groups were acute myeloid leukemia (30% and 25%, respectively) and solid tumors (28% vs. 30%, respectively). The most common reasons for testing were pre-hematopoietic-cell transplantation (HCT) screening (42% with QFT and 31% with T spot.TB) or suspected pulmonary ATB (34% with QFT and 42% with T spot.TB). In the QFT group, 145/411 (35%) tests were indeterminate, while only 96/853 (11%) tests in the T-spot.TB group were invalid ($P < 0.001$). The median ALC was 650 cells/ μ L in patients with an indeterminate result in the QFT group and 90 cells/ μ L in patients with an invalid test in the T-spot.TB group. A total of four patients were diagnosed with ATB at 1 year after testing. Figure 1 provides a flowchart describing IGRA testing results and development of ATB.

Conclusion. The frequency of an inconclusive test result is significantly higher with QFT as compared with T-spot.TB for diagnosis of LTBI or ATB in cancer patients. A low ALC is likely a contributing factor in indeterminate QFT and invalid T spot.TB results.

Figure 1. Flowchart of results of interferon-gamma release assay testing among cancer patients during 2013 and 2014



* The 4th patient was diagnosed with active extrapulmonary tuberculosis and had a T-spot.TB assay done 2 weeks after he was started on a 4-drug antituberculous regimen which yielded a negative result.

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790. The Efficacy of the Interferon-γ Releasing Assay-Based Isoniazid Treatment for Preventing Active Tuberculosis in Kidney Transplant Recipients: A Quasi-experimental Study

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Background. Interferon-γ releasing assays (IGRAs) are useful for diagnosing LTBI. However, there are limited data on the efficacy of IGRA-based isoniazid (INH) treatment with/without back-up tuberculin skin test (TST) to prevent the development of TB in solid-organ transplant recipients.

Methods. All adult patients admitted to a KT unit from January 2014 to December 2016 were retrospectively reviewed in a 2,700-bed, tertiary-care hospital in Seoul, South Korea. The IGRA (i.e., QuantiFERON-In-Tube) with/without TST was performed on all recipients before KT, and 9-month INH treatment was given to patients with clinical risk factors for LTBI regardless of IGRA results. Our hospital policy on LTBI diagnosis and treatment was changed as follows. Period 1 (January 2014–September 2015) adopted IGRA-based INH treatment. We administered INH treatment to all patients with positive IGRA results. Period 2 and period 3 adopted IGRA-based followed by back-up TST-based INH treatment. Period 2 (October 2015–December 2015) included the temporary shortage of Mantoux test, so INH treatment was not given to the patients with positive IGRA since back-up TST was not performed. In Period 3 (January 2016–December 2016), we administered INH treatment to the patients with positive IGRA results followed by back-up TST ≥ 10 mm. The development of TB after KT as the primary endpoint was observed from January 2014 to April 2018.

Results. The study flow is shown in Figure 1. Of the 1,150 KT recipients, 14 (1.2%) developed TB (incidence rate 0.63 per 100 person-years, 95% CI 0.35–1.06). The median time for TB development was 9.4 months (IQR 4.7–14.5). Seven (3.2%) of 216 patients with positive IGRA without INH treatment developed TB, whereas none of 106 patients with positive IGRA with INH treatment developed TB (rate difference 2.43 per 100 person-years, $P = 0.008$) and 7 (0.8%) of 828 patients with negative or indeterminate IGRA results developed TB (rate difference 2.0 per 100 person-years, $P < 0.001$). The number needed to treat (NNT) for IGRA-based INH treatment was 31 (95% CI 18–114).

Conclusion. IGRA-based INH treatment is effective to prevent the development of TB in KT recipients without clinical risk factors for LTBI with reasonable NNT.

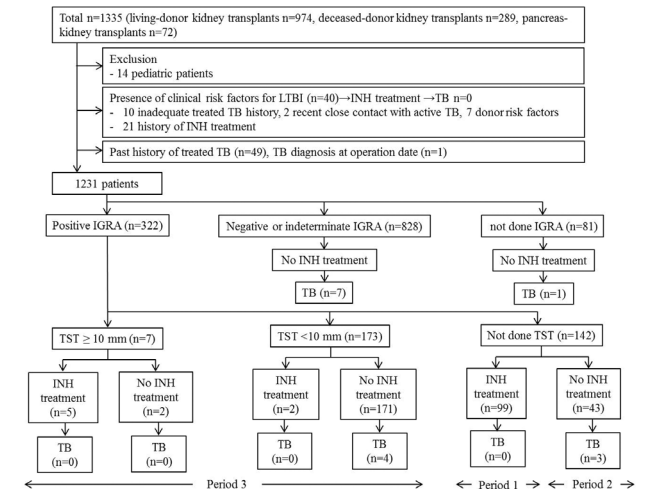


Figure 1. Schematic flow chart of the study. INH, isoniazid; IGRA, interferon-γ-releasing assay; TST, tuberculin skin test; LTBI, latent TB infection

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791. Hyponatremia Incidence and Its Association With Mortality in Patients With Tuberculosis

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Background. In 2014, 26,000 new cases of tuberculosis were reported in Mexico. TB infection can cause hyponatremia which has a strong association with mortality. The objective of this study was to determine the association of mortality with hyponatremia in patients with tuberculosis infection.