**1389. Risk Factors and Clinical Outcomes of Tuberculosis Among Kidney Transplant Recipients in High Endemic Country: A Case–Control Study**

Saranya Thitisuriyarax, MD[1]; Kamonwan Jutivorakool, MD[2]; Suwasin Udomkarnjananun, MD[2]; Natavudh Townamchai, MD[1]; Gompol Suwanpimolkul, MD[2]; Jakapat Vanichanan, MD; [1]Faculty of Medicine, Chulalongkorn University, Bangkok, Krung Thep, Thailand; [2]King Chulalongkorn Memorial Hospital, Bangkok, Krung Thep, Thailand

**Session:** 154. Transplant ID: Myobacterial Infections

*Friday, October 4, 2019: 12:15 PM*

***Background.*** Tuberculosis (TB) is considered as a challenging issue in solid-organ transplant recipients because of high morbidity and mortality. Active TB after transplant can occur from reactivation of latent infection or newly acquired from community. Understanding risk factors and clinical information of TB may provide an appropriate prevention and treatment strategies in this specific patient population; however, most of data were from non-endemic countries.

***Methods.*** A single-center, matched case–control study was conducted in our institute. Cases were defined as newly diagnosed proven or probable active TB in patients who underwent kidney transplant between April 1992 and October 2018. For each case, 5 controls were matched by age and sex. Risk factor associated with TB was determined using univariate and multivariate conditional logistic regression.

***Results.*** Between study period, kidney transplant was performed in 787 patients. None of the recipients was screened or treated for latent tuberculosis. Twenty-seven patients (3.43%) were diagnosed with active TB including 20 proven and 7 probable cases. The overall incidence of TB in our population was 315 cases per 100,000 patients per year. Allograft rejection was significantly associated with active TB ($P < 0.001$). The median onset of infection was 17 months (IQR, 4–59 months) after transplantation and 3.4 months (IQR, 2.7–16.3 months) after episode of allograft rejection. Majority of patients (96.3%) were cured after complete treatment; however, those with TB remained having significant unfavorable outcomes including higher all-cause mortality and graft loss.

***Conclusion.*** Incidence of TB in kidney transplant recipients is higher than normal population. Increasing risk of active TB after allograft rejection is probably due to mycobacterial reactivation following high-dose immunosuppression. Since TB is associated with poor post-transplant outcomes, screening, and treatment of latent infection may be beneficial even in endemic country.

**Table 1:** Univariate and multivariate analysis of clinical characteristics between KT recipients with TB and control

| Risk factor | Univariate | | Multivariate | |
|---|---|---|---|---|
| | OR (95%CI) | P-value | aOR (95%CI) | P-value |
| **Induction** | | | | |
| • No induction | Ref | | Ref | |
| • Induction | 3.82 (1.08-15.55) | 0.04 | 1.1 (0.09-13) | 0.938 |
| **Donor type** | | | | |
| • Living | Ref | | Ref | |
| • Cadaveric | 2.26 (0.91 - 5.6) | 0.08 | 3.02 (0.54-16.76) | 0.206 |
| **Cyclosporin** | | | | |
| • No | Ref | | Ref | |
| • Yes | 7.56 (2.7 - 21.17) | <0.001 | 3.24 (0.49-21.3) | 0.221 |
| **Allograft rejection** | | | | |
| • No | Ref | | Ref | |
| • Yes | 30.25 (6.82 -134.26) | <0.001 | 7.5 (1.11-50.6) | 0.039 |

OR=Odds ratio, aOR =adjusted Odds ratio ; P-value evaluated by conditional logistic regression. In multivariate model, induction, adjusted donor type, cyclosporin, we found only allograft rejection was associated with TB infected after KT, aOR=7.66; 95% CI: 1.22 – 47.98; P=0.03

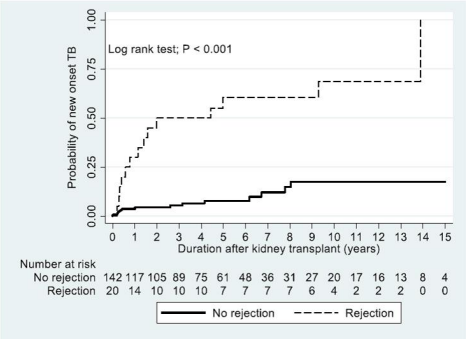


Figure 1 Compare probability of TB disease after kidney transplantation between KT recipients with and without rejection

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**1390. A Novel Application of the Interferon-Gamma Release Assay (IGRA) Among End-Stage Heart Failure Patients Awaiting Heart Transplantation**

Ming-Jui Tsai, Internal Medicine; Aristine Cheng, MBBChir; Hsin-Yun Sun, MD; Yih-Sharng Chen, Surgery; Nai-Kuan Chou, Surgery; Sheoi-Shen Wang, Surgery; Yee-Chun Chen, MD, PhD; Shan-Chwen Chang, MD, PhD; National Taiwan University Hospital, ZhongZheng, Taipei, Taiwan (Republic of China)

**Session:** 154. Transplant ID: Myobacterial Infections

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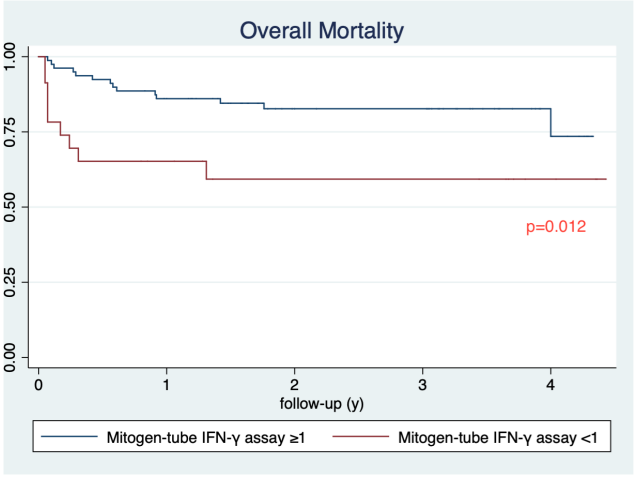
***Background.*** The optimal approach to assay the immune status in heart failure is challenging because of the inherent complexity of chronic inflammation. Interferon-gamma release assays (IGRAs) measure an aspect of cell-mediated immunity encompassing both the innate and adaptive immunity. In this study, we evaluated the utility of a commercial IGRA for predicting mortality and infectious complications among heart transplant candidates.

***Methods.*** This prospective cohort study was conducted between August 1, 2014 and January 31, 2019 at a medical center in Taiwan. All heart transplant candidates received an IGRA (QuantiFERON®-TB Gold In-Tube, QFT-GIT) at baseline as part of the initiative to screen for latent tuberculosis. Impaired cell-mediated immunity was defined as the release of <1 IU/mL of interferon-γ (IFN-γ) in response to the common mitogen in the positive control tube.The patients were then followed until death or January 31, 2019.

***Results.*** A total of 102 patients were enrolled; of whom, 23 (22.5%) had impaired cell-mediated immunity at baseline. During the study period with a median follow-up of 1.90 years (IQR 1.17–3.56), 23 (22.5%) patients died and 45 (44.1%) patients developed an infectious complication. Overall mortality was significantly greater among those with impaired cell-mediated immunity [39.1% (9/23) vs. 17.7% (14/79), $P = 0.031$]. A trend toward higher rates of infection was observed among impaired cell-mediated immunity group [60.9% (14/23) vs. 39.2% (31/79), $P = 0.066$]. The most common cause of death was infection (56.5%). No patient developed active tuberculosis during the study and the most common infection was bacteremia (35.6%). In the age-adjusted multivariate analysis, impaired cell-mediated immunity was an independent predictor of mortality (HR 2.87, CI 1.23–6.68, $P = 0.014$) and subsequent infectious event (HR 3.00, CI 1.56–5.76, $P = 0.001$).

***Conclusion.*** An interferon-γ release assay utilizing the positive control tube of the QuantiFERON®-TB Gold In-Tube kit was predictive of overall mortality and infections among patients with advanced heart failure awaiting heart transplantation.




***Disclosures.*** **All authors:** No reported disclosures.

**1391. Latent Tuberculosis Screening Cascade in Liver Transplant Candidates: A Single, Transplant Center Experience**

Natalia Medvedeva, MD[1]; Harry Cheung[1]; Elizabeth Wootton, PA[2]; Kara Ventura, MSN, DNP; Marwan M. Azar, MD[1]; Maricar Malinis, MD, FACP, FIDSA, FAST[1]; [1]Yale School of Medicine, New Haven, Connecticut; [2]Yale New Haven Health, New Haven, Connecticut

**Session:** 154. Transplant ID: Myobacterial Infections

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***Background.*** Screening for latent tuberculosis infection (LTBI) is an essential component of the pre-transplant evaluation and key in identifying patients at risk for TB reactivation post-transplantation. At our center, liver transplant candidates (LTC) are routinely referred to transplant infectious disease (TID) for pre-TID evaluation including LTBI screening. Our aim was to determine the effectiveness of our screening practices and identify barriers to LTBI treatment.

***Methods.*** We conducted a medical chart review of actively wait-listed LTC as of February 18/2019. Data points collected included: TB risk factors, TID referral and completion of evaluation, intention to screen for LTBI (defined as placing an order), screening completion (with documentation of a test result), screening method (IGRA or PPD), screening test result, radiographic findings, and treatment initiation and completion, if applicable. A positive screen was defined as a positive IGRA or PPD result while a negative screen was defined as a negative result or an indeterminate result with