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Clinical Experience of Latent Tuberculosis Infection in Living Donor Kidney Transplant Recipients

Tae Hyun Ban, Byung Ha Chung, Bum Soon Choi, Byung Soo Kim, Cheol Whee Park, Yong-Soo Kim, Chul Woo Yang
Department of Internal Medicine-Nephrology, The Catholic University of Korea, Seoul St. Mary's Hospital, Korea, Republic of

Objectives: Latent tuberculosis infection (LTBI) is a risk factor of active tuberculosis (TB) in kidney transplant recipients (KTRs). Current guideline recommends LTBI prophylaxis in KTRs. The aim of this study was to assess the property of current LTBI prophylaxis.

Methods: We investigated 404 living donor KTRs between November 2013 and December 2017. We analyzed Data including QFT, TST, chest radiography, past TB history, post-transplant TB incidence, and current practice of LTBI prophylaxis. LTBI was diagnosed to one of following criteria: (1) positive result in tuberculin skin test (TST) or interferon-gamma release assays (IGRA) by QuantiFERON-TB Gold In-Tube test (QFT); (2) the old healed TB sequelae in chest radiography without TB treatment history; (3) previously insufficient TB treatment history; (4) contact history with active pulmonary TB patient within a year.

Results: The mean follow-up period of the patients 21.6 ± 14.2 months. QFT was positive in 38.6% (n=156), while TST was only positive in 7.4% (n=30). Additionally, not only 170 patients failed TST measurement owing to time interval of 48 hours until interpretation, but also only seven patients (2.8%) among 248 patients with negative QFT were positive TST. On the other hand, no one developed TB for followed-up period. Isoniazid was a primary agent in total 137 patients prescribed to LTBI prophylaxis, but 40 subjects (29.2%) underwent adverse event, with especially hepatotoxicity (40%).

Conclusions: The patients with LTBI were a lower TST prevalence than QFT, therefore QFT may be a solely useful strategy for diagnosis of LTBI. High incidence of hepatotoxicity on isoniazid prophylaxis suggests to analyze genetic polymorphism such as N-acetyltransferase and establish alternative agents as strategy of LTBI prophylaxis.