KSN 2020
FULLY VIRTUAL MEETING

Abstract Submission No. : IL-9140

Biomarker of acute rejection

Sang Ho Lee
Kyung Hee University Hospital at Gangdong, Korea, Republic of

Compared with dialysis, kidney transplantation is the preferred treatment for patients with end-stage renal disease (ESRD). Although newly developed immunosuppressive agents effectively manage acute rejection (AR) after renal transplantation, AR remains the major obstacle of successful long-term graft outcomes. Invasive renal biopsy has been used as the gold standard for AR diagnosis; however, the biopsy process presents many problems, such as bleeding and graft loss, sampling errors, inter-observer variability in biopsy readings, and cost of repeated biopsies due to allograft rejection. Furthermore, nonspecific immunosuppressive therapy resulting in insufficient or excessive immunosuppression could induce renal graft damage such as acute rejection, calcineurin inhibitor (CNI) toxicity, acute tubular necrosis (ATN), and BK virus nephropathy. Therefore, a need exists for specific, sensitive and noninvasive means for the diagnosis and prognosis of AR or kidney allograft dysfunction as well as timely, accurate, and personalized immunosuppressive therapy for improving long-term outcomes.
Given their ease of availability and the compatibility with a large technical array, blood-based biomarkers have been widely evaluated for use as potential predictive and diagnostic biomarkers. mRNA biomarker from urine sample was also reported as promising in assessment of acute rejection. Recently, mass spectrometry based approach to explore the change of proteome or metabolites in plasma and urine was introduced in biomarker study after kidney transplantation.
Here, the authors review the currently suggested non-invasive biomarkers, such as modification of immune cell subsets and mRNA, miRNA, proteome and metabolite profiles, identified in the blood and urine of kidney transplant recipients.