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May 27(Fri), 14:40-16:40 Kidney Transplantation 1

HLA Matching & Eplet Load

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Kidney transplant failure is known to compromise patients' quality of life and survival. Immune-mediated injury is a leading cause for graft failure. Molecular incompatibility between donors and recipients on sequence defined HLA targets on the surface of human leukocyte antigens (HLA) called eplets, has been shown to associate with immune-mediated injury. With the advent of HLA gene sequencing, precise evaluation of molecular HLA compatibility, and its optimization at the time of organ allocation, could become a reality.

While cumulative eplet mismatch loads between kidney transplant recipients and donors are often studied in association with transplant outcomes, the consideration of molecular compatibility in organ allocation warrants verification of individual mismatches as determinants of immune injury. A better appreciation of the immunogenicity and antigenicity of eplets as well as the hierarchy between mismatched eplets as determinants of immune-injury graft loss can inform priorities for donor-recipient matching.

The presentation will outline a roadmap towards the implementation of donor-recipient molecular matching. Strategies to increase the feasibility of molecular matching, minimize disparities in access to transplantation, as well as opportunities to mitigate immunological risk among harder to match candidates through personalized care, will also be discussed.