

Kidney Transplantation: The Challenge of Human Leukocyte Antigen and Its Therapeutic Strategies

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Abstract

Kidney transplantation remains the treatment of choice for end-stage renal failure. When the immune system of the recipient recognizes the transplanted kidney as a foreign object, graft rejection occurs. As part of the host immune defense mechanism, human leukocyte antigen (HLA) is a major challenge for graft rejection in transplantation therapy. The impact of HLA mismatches between the donor and the potential recipient prolongs the time for renal transplantation therapy, tethered to dialysis, latter reduces graft survival, and increases mortality. The formation of pretransplant alloantibodies against HLA class I and II molecules can be sensitized through exposures to blood transfusions, prior transplants, and pregnancy. These preformed HLA antibodies are associated with rejection in kidney transplantation. On the other hand, the development of de novo antibodies may increase the risk for acute and chronic rejections. Allograft rejection results from a complex interplay involving both the innate and the adaptive immune systems. Thus, further insights into the mechanisms of tissue rejection and the risk of HLA sensitization is crucial in developing new therapies that may blunt the immune system against transplanted organs. Therefore, the purpose of this review is to highlight facts about HLA and its sensitization, various mechanisms of allograft rejection, the current immunosuppressive approaches, and the directions for future therapy.



Biography

Tagesse Sedoro has completed his/her Msc in health monitoring and evaluation from Jimma University, Ethiopia. Currently, he is the coordinator of community based education in collage of medicine and health science, Wachemo University, Ethiopia. He has one publication and the others more than three are in the process / ongoing. He is lecturer in public health departments. Overall his duties are teaching, doing research, advising different student research, giving community service in selected prioritized health problems and serving as a committee in different university issues.

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