参考資料8

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Transplanting the highly sensitized patient: The emory algorithm.

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Abstract

Renal transplant patients sensitized to HLA antigens comprise nearly one-third of the UNOS wait-list and receive 14% of deceased donor (DD) transplants, a rate half that of unsensitized patients. Between 1999 and 2003, we performed 492 adult renal transplants from DD; 120 patients (approximately 25%) had a panel reactive antibody (PRA) of >30%, with nearly half (n = 58) having a PRA of >80%. Our approach is based upon high-resolution solid-phase HLA antibody analysis to identify class I/II antibodies and a 'virtual crossmatch' to predict compatible donor/recipient combinations. Recipients are excluded from the United Network for Organ Sharing match run if donors possess unacceptable antigens. Thus, when sensitized patients appear on the match run, they have a high probability of a negative final crossmatch. Here, we describe our 5-year experience with this approach. Five-year graft survival ranged from 66% to 70% among unsensitized (n = 272), moderately sensitized (PRA < 30%, n = 100) and highly sensitized (>30% PRA; n = 120) patients, equal to the average national graft survival (65.7%). The application of this approach (the Emory Algorithm) provides a logical and systematic approach to improve the access of sensitized patients to DD organs and promote more equitable allocation to a highly disadvantaged group of patients awaiting renal transplantation.

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Review of the Uruguayan Kidney Allocation System: the solution to a complex problem, preliminary data.

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Abstract

The National Kidney Transplant Program with cadaveric donors is based on centralized and unique waitlist, serum bank, and allocation criteria, approved by Instituto Nacional de Donación y Trasplante (INDT) in agreement with clinical teams. The median donor rates over last 3 years is 20 per million population and the median number of waitlist candidates is 450. The increased number of waiting list patients and the rapid aging of our populations demanded strategies for donor acceptance, candidate assignment, and analysis of more efficient and equitable allocation models. The objectives of the new national allocation system were to improve posttransplant patient and graft survivals, allow equal access to transplantation, and reduce waitlist times. The objective of this study was to analyze variables in our current allocation system and to create a mathematical/simulation model to evaluate a new allocation system. We compared candidates and transplanted patients for gender, age, ABO blood group, human leukocyte agents (HLA), percentage of reactive antibodies (PRA), and waiting list and dialysis times. Only 2 factors showed differences: highly sensitized and patients >65 years old (Bernoulli test). An agreement between INDT and Engineering Faculty yielded a major field of study. During 2008 the data analysis and model building began. The waiting list data of the last decade of donors and transplants were processed to develop a virtual model. We used inputs of candidates and donors, with outputs and structure of the simulation system to evaluate the proposed changes. Currently, the INDT and the Mathematics and Statistics Institute are working to develop a simulation model, that is able to analyze our new national allocation system.

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Renal transplantation of highly sensitised patients via prioritised renal allocation programs. Shorter waiting time and above-average graft survival.

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Abstract

BACKGROUND: Highly sensitised renal transplant candidates (HSP) have a reduced chance of receiving a transplant. In Eurotransplant (ET), two special allocation programs have been made available for such patients: the Highly Immunised Tray (HIT) program and the Acceptable Mismatch program (AM), albeit with different inclusion and exclusion criteria (HIT, current PRA% >or=85%; AM, current and/or historical PRA% >or=85%). When a suitable kidney is available for a patient, included in these special programs, the kidney is mandatory offered. In contrast, in the point score system of the standard ET kidney allocation procedure (ETKAS), HSP (PRA >or=85%) only get a marginal bonus according to their current sensitisation. It was tested whether the allocation priority of the two special allocation programs is justified from the perspective of transplant outcome.

METHODS: The post- transplant outcomes of recent consecutive cohorts of AM, HIT and HSP-ETKAS transplants were compared. The end points were initial graft function, rejection episodes during the first three months post-transplant, and 1-year kidney graft outcome.

RESULTS: Between January 1, 1997 and June 30, 1998, 101 HSP received a kidney-only transplant: 29 via AM, 39 via HIT and 33 via ETKAS. HLA-A,B,DR matching was more favourable in the AM and HIT allocation groups and their waiting times till transplantation were much shorter than those of the HSP-ETKAS allocation group. The incidence of initial graft non-function was similar among the three HSP allocation groups, averaging 50%. Recovery of the initial non-function was more likely for AM and HIT transplants. No difference was present with regard to the percentage of patients who experienced at least one rejection episode during the first three months post-transplant, averaging 43%. However, the AM group had less severe and/or less recurrent rejection episodes. The 1-year kidney graft survival, censored for death with functional graft, was 96% for AM, 82% for HIT and 75% for HSP-ETKAS transplants ($p = 0.04$).

CONCLUSIONS: The two special allocation programs for HSP do yield adequate results and offer a shorter waiting time, compared to the standard kidney allocation procedure. The AM approach might be preferred because of the smoother post-transplant management and the better graft survival, keeping the HIT approach as a back up. Since the allocation priority is justified in view of efficiency, the renal transplant community should support the incorporation of a special allocation program for HSP in their respective organ exchange program.

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The high grade match kidney sharing algorithm of the South-Eastern Organ Procurement Foundation (SEOPF): altering recipient demographics through improved matching.

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Abstract

BACKGROUND: Studies of kidneys shared through the South-Eastern Organ Procurement Foundation (SEOPF) have shown that regional organ procurement (ROP) trays can predict negative crossmatch in highly sensitized patients when the HLA match is of a high grade. In an attempt to offer more well-matched kidneys to highly sensitized patients, SEOPF organized the High Grade Match (HGM) Program.

METHODS: This United Network for Organ Sharing (UNOS)-approved allocation variance requires mandatory sharing of all kidneys by participating centers after UNOS mandatory sharing requirements have been met. The HGM levels of sharing are: (1) 0 A,B mismatch (MM); panel-reactive antibody (PRA) > or = 40%; negative ROP crossmatch; (2) 0 B,DR MM with > or = 40% PRA; negative ROP crossmatch; (3) 0 B,DR MM with PRA < 40%. Non-HGM cadaveric transplants at the same participating centers--locally or distally procured--serve as the control group.

RESULTS: During the first 18 months of this program, the 23 participating centers shared 124 kidneys of the 1592 that were available. Well-matched kidneys (two mismatches or less) accounted for 91.1% in the HGM group, but only 19% of the controls (P<0.0001). Highly sensitized patients (PRA > or = 40%) represented 13.8% of the HGM group, but only 3.3% of the non-HGM group (P<.0001). With HGM kidneys, there was a shift in recipient demographics. Patients with blood group O, female patients, older patients, and retransplanted patients all accounted for significantly larger percentages of the HGM group compared with the non-HGM control group. The racial composition of the recipients of high-grade matches was, however, no different than that of the control recipients at the same centers.

CONCLUSION: The HGM Program resulted in longer ischemia times, but graft survival was not affected. The 1-year actuarial graft survival rate (Kaplan-Meier) for HGM kidneys was not different from the control cadaveric graft survival rate. By sharing kidneys based on improved HLA matches with consideration for high PRA, the HGM Program offered more transplant opportunities to women, blood group O recipients, retransplants, and older patients.