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CONGRESS REPORTS

Second Annual Meeting of the American Society of Transplant Surgeons

Chicago, May 20–22, 1976

The American Society of Transplant Surgeons, under its present President, Dr. Folkert O. Belzer, held its second annual meeting at the Drake Hotel in Chicago, Illinois from 20th-22nd May, 1976. 28 papers were presented.

Dr. G. M. Collins, et al., from the University Hospitals in San Diego, evaluated "The influence of preservation technique on early failure rate of cadaveric kidneys." A total of 36 kidneys were preserved either by ice storage with either C_2 solution or Sack solution or by continuous perfusion with either cryoprecipitated plasma or albumin. Differences in functional survival emerged after one month. When kidneys were stored for up to 24 hours, C_2 solution was superior to Sack's solution, plasma perfused or albumin perfused kidneys. Mean preservation times were comparable in all four groups. However, when preservation times exceeded 24 h, the best results were obtained with albumin perfused kidneys, and no kidney functioned after it had been preserved for longer than 24 h when ice storage with C_2 solution was utilized. The authors' conclusion was that the preferred method for storage of cadaver kidneys up to 24 h was C_2 flush and ice storage and for a period exceeding 24 hours machine perfusion with albumin solution. In the discussion it was confirmed that there seems to be a trend, but that the numbers presented were too small to be significant.

Drs. Horst Zincke and John E. Woods from the Section of Transplantation Surgery at the Mayo Clinic reported on "Donor pretreatment in cadaveric renal transplantation." At the Mayo Clinic heart-beating cadaveric kidney donors have been pretreated with high intravenous doses of cyclophosphamide and methylprednisolone 5 1/2 and 2 1/2 h prior to harvesting respectively, since July, 1973. A total of 21 such pretreated kidneys were transplanted and compared to a group of 23 patients who received kidneys which were harvested at the same institution and were not pretreated and 16 kidneys harvested elsewhere and transferred to the Mayo Clinic without any pretreatment. Patients and grafts were at risk for 8 months. Warm and cold ischaemia time, as well as HLA matching were comparable in all three groups. The majority of the kidneys were not matched for any antigen and over 81% of the patients in the first, compared to 52% in the second, and 42% in the third group were considered to be at high risk. Patients who were considered to be at a high risk were older than 45 years of age, had more than 50% preformed antibodies or were juvenile diabetics. A history of myocardial infarction and gastrointestinal bleeding, were not considered high risk factors. The actuarial survival figures at two years for patients and grafts in the first group were 90 and 76 percent, respectively. In the second group, 65% for patient and 61% for grafts, and in the third group 88% for patients and 43% for grafts. Rejection episodes in Group A were delayed and seemed to be less in number and milder. The authors conclude that pretreatment of the human renal allograft donor with cytotoxic agents appears to be a valuable adjunct in improving graft and recipient survival. These results compare favourably with previously reported results.

Dr. Satya N. Chatterjee and his colleagues from the University of Southern California in Los Angeles reported on "Treatment of donors with methylprednisolone in human cadaveric renal allografts - results of a prospective randomized controlled study." The authors tried to evaluate the use of methylprednisolone pretreatment in human cadaveric renal transplantation by pretreating the cadaveric donors with 5 grams of methylprednisolone 2-4 h prior to organ harvesting. They assigned two groups, one which did receive the pretreatment and one which did not. Of the total of 84 kidneys for both groups, there was no significant difference in graft survival. This study showed that methylprednisolone in the above mentioned doses does not lead to better graft survival. As far as the randomized and controlled aspects of

this study are concerned, it is not a truly controlled study, since kidneys were harvested at different institutions and pooled together which would lead to many variables that could account for different survival times. In the discussion, a trend was evident, that it is cyclophosphamide rather than methylprednisolone which is most likely to have significant impact on graft survival with donor pretreatment.

Dr. J. Thomas and colleagues from the Department of Surgery at the Medical College of Virginia, Richmond, discussed the "Immunological monitoring of long surviving renal transplant recipients." In their study 30 patients who are long term renal transplant survivors were studied for over two years with mixed lymphocyte culture (MLC), cell-mediated lympholysis (CML), direct lymphocyte mediated cytotoxicity, antibody-dependent cell-mediated cytotoxicity (ADCMC), K cell cytotoxicity (k-ct) and serum blocking studies. Frozen serum was used for the antibody-dependent cell-mediated cytotoxicity test and enhancement studies. MLC, CML and serum blocking activity, both donor-specific and non-specific, was found in 87% of the patients with well functioning kidneys. Thus, high titres of blocking factors correlated well with excellent long term renal function. Also, deficiency in recipient's ability to generate cytotoxic T cell effectors in vitro was seen in all patients who had good renal function more than five years after transplantation. A positive ADCMC activity was identified as early as three years prior to the onset of clinical chronic rejection in some patients. It seems that ADCMC and K-CT testing was useful in assessing pharmacological control in patients with chronic rejection. It was also evident that serum MLC studies could be used to identify patients who had not taken immunosuppressive drugs within 24 to 48 hrs prior to testing. It was concluded that these studies have been useful in patient management in at least three areas: 1) Serum blocking and defect of cytotoxic T cells is associated with an excellent long term prognosis, 2) ADCMC activity is usually associated with clinical evidence of chronic renal allograft rejection, 3) MLC activity is inversely correlated with the recent intake of immunosuppressive drugs, and 4) preliminary evidence suggests that these tests could be used for monitoring of immunosuppressive therapy.

Drs. Ronald H. Kerman and W. Peter Geis from Loyola University in Chicago discussed the "Prognostic significance of active T-cells in renal allograft survival." A total of 37 renal transplant recipients were evaluated with total T and active T lymphocytes as they related to renal allograft survival in correlation with haemodialysis and blood transfusion. The authors observed that 83% graft survival was seen in patients who had lower percent active T cells prior to renal transplantation as compared to 50% graft survival in patients with a higher percent active T cell counts. On the other hand, pretransplant total T cells, phytohaemagglutinin response and number of transfusions were not prognostic for graft survival. Also, no difference was seen for those patients who were haemodialyzed for more or less than one year. In addition, patients haemodialyzed for over a year received twice as many blood transfusions and there was no difference in the number of T cells or active T cells in either group. On the other hand, lymphocytes from patients haemodialyzed for less than a year were more responsive to phytohaemagglutinin stimulation. The authors concluded that evaluation of the active T cell counts prior to transplantation might be a useful prognostic tool for graft survival. In the discussion, it was mentioned that in performing phytohaemagglutinin studies it seems crucial to consider dilutional factors. Also, it was noted that DNCB studies done by the group at the Johns Hopkins University showed that patients with negative DNCB tests had a more than 80% chance of having surviving grafts as compared to patients with a positive test for whom the percentage was as low as 25%.

Drs. James Cerilli and J.E. Holliday, from the Ohio State University College of Medicine, Columbus, Ohio, discussed "Anti-vascular endothelium antibody in renal transplantation." The value of anti-vascular endothelium antibody as IgG in renal allograft recipients was evaluated and correlated with lymphocytotoxicity panels and clinical results. The authors found that 63% of the patients with antivascular endothelium antibody (AVEAb) lost their graft compared to only 14% of patients negative for AVEAb. Of seven patients who demonstrated AVEAb against their specific and prospective donors 5 experienced accelerated graft rejection. In contrast, only 17% of those without positive AVEAb to their donors experienced graft loss. Evidence for IgG to vascular endothelial cells in living related donor recipients was associated with 87% graft failure. It is concluded that AVEAb assessment was more reliable in predicting renal graft failure than lymphocyte-toxicity tests.

Dr. F. Thomas et al. from the Medical College of Virginia in Richmond discussed "Quantitation of recipient immune responsiveness pre-transplant." In this study 80 patients had measurement of preformed antibodies against random panel lymphocytes, and studies of T-cell reactivity (PHA and Con-A blastogenesis in tissue culture). These studies were correlated with post-transplant rejection reac-

tivity as measured by: 1) rejection in the first month, 2) rejection in the first three months, and 3) irreversible rejection, and 4) graft survival at one year. The authors were unable to find any correlation between the level of preformed antibodies and transplant failure. On the other hand, in 30 patients who were considered high T cell reactors by PHA and Con-A testing, there was a statistically significant decrease in the three month graft survival time as compared to patients who are classified as low T cell reactors by T cell mitogen testing. The one year graft survival in the highest responder group was 40% compared to be 83% in the low responder group, which is statistically significant. It is concluded that T cell reactivity correlates well with one year graft survival and it is a better indicator for graft survival than antibody titres.

Dr. Ronald M. Ferguson and associates from the University of Minnesota discussed the "Problem of host presensitization and renal allograft success at a single institution." Of a total of 462 patients who underwent renal transplantation between June 1970 and February 1975, 51 first transplants had demonstrable non donor-specific anti-HLA lymphocytotoxic antibodies. These patients were compared with a similar number of patients without cytotoxic antibodies who are matched for age and sex of recipient, time of transplant, donor source, as well as with the total transplant population. The results indicated that there was no significant difference in either graft or patient survival of first transplants performed in the presence or absence of any degree of non donor specific presensitization. The authors conclude that these results do not confirm the results of cooperative groups in particular those of Doctor Terasaki. The differences may lie in the routine use of a sensitive crossmatch antiglobulin technique, a strict policy not to transplant recipients whose sera are progressively reacting against the panel, until such progression stops, and a policy not to transplant recipients if any sera, past or present, reacts against the potential donor, and finally the routine use of high potency, high dose ALG which may prevent acute rejection in the responders. In the discussion it was mentioned that half of the patients had increase of preformed antibodies after bilateral nephrectomy and splenectomy and it was shown in an example of 65 donor-recipient tests that prolonged incubation for crossmatching and this in association with antiglobulin technique was 100% successful in detecting positive matches as compared to negative matches with the usual NIH crossmatch technique.

Dr. Oscar Salvatierra and his colleagues from the University of California, San Francisco, discussed "The influence of hyperimmunization on graft survival." A group of 61 patients who had more than 50% of preformed antibodies against random donor cells were evaluated for graft survival. Of these patients, 42 received primary cadaveric renal allograft and 69% are functioning at 4 months to five years with 18 grafts being at risk for over two years. Average reactivity against random donor panel was 83%. Of 12 recipients with second cadaveric grafts who became highly sensitized after their transplant, five of the grafts are functioning at 5 months to 2 1/2 years after transplant. Average reactivity against the donor panel was 10% prior to the first transplant and 94% prior to the second transplant. Only one graft was lost in 7 hyperimmunized recipients of primary living related grafts. Two patients became positive on the direct crossmatch to their donors prior to transplantation and positivity persisted for at least two months on repeated testing. After the crossmatch became negative to the same donor, successful transplantation could be carried out. He also concluded that good graft survival can be obtained in hyperimmunized patients. However, it seems that sensitization following rejection of an allograft appears to confer a less favourable prognosis. In the discussion it was mentioned that IgM, C_3 and fibrinogen on the one hour biopsy, as seen on immunofluorescence and electron-microscopy, is associated with an 87% graft failure and it was mentioned by the transplant group from St. Louis that if these factors are absent, there is a 95% graft success to be expected. The latter study was done in perfused and stored kidneys.

A quite important study which is not directly related, but might be of significance for renal transplantation was reported by Dr. Randall B. Griepp and his group from Stanford University on "Control of graft arteriosclerosis in human heart transplant recipients." The Stanford group has presently a one year patient survival of 61% and over the recent years it was obvious that most of the patients who died after transplantation died of a myocardial infarction due to arteriosclerosis rather than rejection. Significant coronary lesions appear as early as three months following operation. In an attempt to control graft arteriosclerosis, all patients operated on after January, 1970, were placed on a prophylactic regimen of warfarin, dipyridamole, and a low cholesterol and saturated fat diet. The incidence of graft arteriosclerosis was assessed by annual coronary arteriography or at post mortem examination. In 9 recipients

not on the regimen the incidence of graft arteriosclerosis at 1, 2, 3, and 4 years was 36%, 56%, 83%, and 90%, respectively. In 40 recipients maintained on the regimen comparable figures were 5%, 16%, 31%, and 39%, which was statistically significant. The Stanford experience suggests that the incidence of arteriosclerosis in the human cardial allograft can be reduced to acceptable levels by antithrombotic therapy and control of plasma lipid levels. It was mentioned during the discussion that in spite of results from Australian groups on the non-beneficial effect of antithrombotic therapy, therapy might have some beneficial effect also in renal transplantation, particularly as far as coronary artery disease is concerned. It was also mentioned that instead of warfarin, Aspirin, could be used.

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ANNOUNCEMENTS

May 1977 Belgrade	5th Congress of the Jugoslavian Urological Association	Information: Prof. Dr. S. Petkovic Uroloska Klinika Generala Zranova 51 Belgrade, Jugoslavia
September 25-30, 1977 Buenos Aires	XIV. Congress of the American Association of Urology	Information: Dr. Juan Ghirlanda Secretario General Callao 1720 - 7° "B" 1024 - Buenos Aires República Argentina
October 27-29, 1977 Valencia	3rd International Congress of Cyrosurgery	Information: Prof. Dr. Tramoyeres Colegio de Médicos Isabel La Católica 8 Valencia, Spain

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