CORNEA: KERATOPLASTY A

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TO QUANTIFY CLINICAL AND OPERATIVE FACTORS INFLUENCING CORNEAL GRAFT OUTCOME

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Purpose: To investigate the rate of failure and the rejection free survival of HLA matched penetrating keratoplasty (PKP) in patients with a high risk for immune rejection.

Methods: 247 patients with a history of multiple PKP failure and regraft, corneal neovascularization, and/or age younger than 15 y. were prospectively included in a prospective HLA matching PKP program (89 to 9/94) involving 33 French surgical centers. Corneal grafts were obtained from 39 different hospitals. Mean graft preservation time was 8.8±0.2 days (1 to 276). Survival curves were computed in SAS using the Kaplan-Meier estimate and compared using the Log-Rank regression method.

Results: Analysis of the degree of matching revealed 1 or 2 HLA class II DR identities in 118 and 121 grafts respectively, and 2, 3 or 4 HLA class I (A,B) identities in 116, 74 and 7 grafts respectively. Follow up was 18±10.1 months. Preliminary analysis of 177 eyes with more than 12 months follow-up showed that a higher level of DR matching correlated significantly with a reduced rejection free survival (p<0.001). Non-reversible immune rejection was observed in 15% of grafts at 12 months. None of the other clinical parameters assessed, including vascularization of the recipient bed, number or failure cause of previous PKP, lens status, inflammatory status, endothelial failure status, graft diameter could be significantly correlated to anatomical outcome.

Conclusion: These results may further clarify whether HLA matching is of current interest to prevent immune reactions and to improve graft survival in patients with a high risk of rejection following PKP.

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CORNEAL TRANSPLANTATION IN HIGH-RISK PATIENTS: INFLUENCE OF HLA MATCHING.


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ABSTRACT:

Methods: During the last 6 years, 165 patients underwent keratoplasty at the Eye Clinic of the Santa Maria Hospital. Of these, 47 eyes presented with the above mentioned high-risk criteria. HLA-A, HLA-B, and HLA-DR matching were performed. Periodic clinical observation was carried out. Cytotoxic antibodies were used for the prevention and treatment of corneal allograft rejection.

Results: Graft rejection was observed in 15 of these 47 eyes (31.9%).

Conclusions: HLA matching definitely does not eliminate the risk of allograft rejection in high-risk patients. Different methods should be employed and different antigens should be assessed. However, HLA matching still remains a useful tool in the pre-operative evaluation of these patients. Cytotoxic antibodies are the mainstay in preventing and treating allograft rejection.

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SURVIVAL OF HIGH RISK HLA MATCHED PENETRATING KERATOPLASTY

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THE ROLE OF MAJOR AND MINOR HISTOCOMPATIBILITY ANTIGENS IN MURINE ORTHOTOPIC CORNEAL TRANSPLANTATION

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Purpose: The importance of major and minor histocompatibility antigens has been studied in the experimental model of orthotopic corneal transplantation in mice.

Methods: Corneal allografts were transplanted into eyes of three recipient groups: naive, presensitized and tolerant. Tolerance was induced by intravenous injection of newborn mice with 12-15 x 10^6 lymphoid donor cells. Presensitized animals were prepared by transplantation of skin from the same donor. The evaluation of corneal grafts has been performed twice a week based on the scale determining opacity, edema and vascularization.

Results: 1. The rejection occurred 12 - 21 day after allograft transplantation in 90% of naive recipients. Presensitized recipients rejected in 100% 12 day after grafting. There was no difference in survival between grafts mismatched either in both major and minor histocompatibility antigens or minor histocompatibility antigens only in both groups. There was no sign of rejection in tolerant animals as well as in syngeneic controls.

Conclusions: Corneal graft disparity in minor histocompatibility antigens led to the same rejection rate as disparity in all histocompatibility antigens. Corneal tissue apecific antigens are not efficient to elicit rejection.