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Significance of immunological and other risk factors to liver graft rejection

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The impact of immunological factors in liver transplantation is generally believed to be less important than in kidney transplantation. We investigated which factors, immunological or other, associated with liver rejection. Proportional hazards models and generalized linear models were used to assess which risk factors predicted acute or chronic graft rejection in 388 liver transplantations performed in Finland between 1982 and 2002. Incidence of acute rejection, time to acute rejection, graft rejection within 3 months, multiple rejections within one year, steroid resistant rejection, and graft lost to chronic rejection or to chronic dysfunction were evaluated.

Time period to the first acute rejection increased and the occurrence of acute and chronic graft rejection and graft dysfunction decreased by time in this study. Increased total bleeding lengthened the time to acute rejection and reduced the risk of steroid resistant rejection. The occurrence of acute rejection significantly diminished in connection with intraoperative blood transfusion more than 20 units and older donors. However, acute rejections occurred earlier and risk of chronic graft dysfunction increased when donors were older. Preformed panel reactive antibodies against HLA class I antigens, positive crossmatch test or positive CMV serology did not have effect on the occurrence of acute or chronic rejection. Immunosuppression did not change much over time.

Our findings support the suggestion that immunological pretransplant factors have not major effect on the occurrence of rejection after liver transplantation.