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HUMORAL AND CELLULAR CHANGES IN THE LYMPH OF SMALL BOWEL ALLOGRAFT DURING IMMUNOSUPPRESSION

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Prevention of rejection of small bowel allograft by the conventional immunosuppressive regimen is more difficult than of the kidney or liver. The difficulty in prolonging functional survival of intestinal allograft may be due to the lymphoid nature of the bowel and the process of activation of an immune response of the transplanted lymphoid tissue. The purpose of the present study was to correlate the intestinal allograft survival time with the intensity of the immune response of the transplanted intestinal lymphoid tissue, in a group of untreated dogs and a group of dogs on immunosuppressive therapy.

Methods: Ten dogs received a jejunal allograft to the neck vessels, and five of them were placed on Imuran and steroids. A lymph external fistula of the graft was created. Lymph lymphocyte count and smear were made every day. Lymphocytotoxic titer was measured: a) in the graft lymph: to the donor blood lymphocytes, and recipient blood lymphocytes; b) in the recipients serum: to the graft lymph lymphocytes, and to the donor blood lymphocytes. On the 4th day after transplantation lymph derived from the graft contained up to 40% of large pyroninophilic lymphocytes. That number diminished until the day of rejection of the intestine, when only fragments of dead lymphocytes could be found. Serological studies of the lymph revealed, from the 3rd day on, significant increase in lymphocytotoxic titer against donor, as well as recipient lymphocytes. Decreasing titers preceded by 1-2 days the clinically recognisable rejection. In the group on immunosuppression there was an evident increase of lymphocytotoxic titers in the lymph and serum to the donor cells around day 9-11, preceding by 2 days the clinical rejection. At the same time blastic forms of lymphocytes appeared in the lymph. No antibodies to recipient lymphocytes could be found in the graft lymph.

Conclusions: Pharmacological immunosuppression abolishes the GVH reaction in the small bowel transplant, but only slightly prolongs graft survival time. Despite of immunosuppression antibodies to donor lymphocytes appeared in the recipient reaching their peak 2 days before the rejection.