Gvhr in combined small bowel and liver transplantation

1992 Fiscal Year Final Research Report Summary

GVHR IN COMBINED SMALL BOWEL AND LIVER TRANSPLANTATION

Research Project

Project/Area Number

03670610

Research Category

Grant-in-Aid for General Scientific Research (C)

Allocation Type

Single-year Grants

Research Field

Digestive surgery

Research Institution

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Small bowel transplantation / GVHR

Research Abstract

Purebred male Lewis (Lew) and LewisXBrown Norway F1 hybrid (LBNF1) rats weighting 200-300 g were used. The heterotopic small bowei transplantation was carried out using the technique of Monchik and Russel. For the first part of investigation, the tracing of lymphatic cells from grafts was performed. The small bowel was dissected as a graft after intra-peritoneal injection of 20 mg of bromodeoxyuridine (BrdU). The heterotopic small bowel transplantation was carried out in GVHR group (Lew rats served as doner, and LBNF1 rats as recipient). The animals were sacrificed on the fifth day after transplantation. The mucosal specimens and mesenteric lymph nodes from the native intestine were obtained. The sections were stained with ABC method. Anti-Br dU antibody and anti-surface markers of lymphocytes (W3/13) were used.
For the second part of investigation, the animals were divided in two groups to investigate the immunological cell kinetics. The first was iso graft group as a control. LBNF1 ra ts served as doner and recipient. The second was rejection group. LBNF1 rats served as doner and Lew served as recipient. The third was of GVHR. Lew rats served as doner, and LBNF1 rats as recipient. The animals were sacrificed on the eighth day after administration of 20 mg of Br dU. Br dU

labelling index and DNA synthesis time of both Peyer's patch and mesenteric lymph node were examined with flowcytometer.
We documented that the specimens from the native mesenteric lymph nodes include some Br dU positive lymphocytes that immigrated from the graft in GVHR. There was a marked increase of W3/13 positive cells in lymph nodes in GVHR These allogenic T lymphocytes become stimulated and develop an immune response against the native intestine4). We also documented that the Br dU labeling index and DNA synthesis time demonstrated that the lymphatic system of the graft was stimulated, but those of the native intestine was strongly suppressed in GVHR.
These findings suggest that the diffuse barrier function of the mucosal linigs of the native intestine had weakened in GVHR. This results in bacteria and antigens breaking into the portal system, and sometimes causing recipients to develop a septic condition. The combined (small bowel and liver) transplantation may be useful for small bowel transplantation to decrease antigenesty of small bowel graft.▲ Less

Research Products (6 results)

All | Other

All | Publications (6 results)

[Publications] Masao Yagi,et al: "Change in intestinal mucosal protective function after small bowel transplantation." Transplantation Proceedings. 24. 1126-1127 (1992)

[Publications] Masao Yagi,et al: "Changes of mucosal immunological function in GVHR after small boel transplantation." Transplantation Proceedings. 24. 1503-1504 (1992)

[Publications] Masao Yagi,et al: "Frontiers of mucosal immunology,vol 1 GVHR in small bowel transplantation" Elsevier Science Publishers, 161-164 (1992)

[Publications] Masao Yagi, et al: "Changes in intestinal mucosal protective function after small bowel transplantation." Transplantation Proceedings. 24. 1126-1127 (1992)

[Publications] Masao Yagi, et al: "Changes of mucosal immunological function in GVHR after small bowel transplantation." Transplantation Proceedings. 24. 1503-1504 (1992)

[Publications] Masao Yagi, et al: "Frontiers of mucosal immunology, vol.1 GVHR in small bowel transplantation." Elsevier Science Publisher. 161-164 (1992)

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