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1: World J Surg. 2003 Apr;27(4):412-5.

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SpringerLink FULL-TEXT ARTICLE

Impact of perioperative treatment of recombinant human growth hormone on cell immune function and intestinal barrier function: randomized, double-blind, controlled trial.

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The objective of this study was to evaluate the effects of recombinant human growth hormone (GH) on cell immune function, intestinal barrier function, and outcome. A placebo-controlled randomized double-blind trial was performed, with 20 patients undergoing abdominal surgery enrolled in the study. The patients in the study group received GH (0.3 IU/kg/day) subcutaneously from day 3 before operation until day 7 after operation. The patients in the control group received placebo injections. All the patients were given isonitrogenic (0.15 g N/kg/day) and isocaloric (20 kcal/kg/day) parenteral nutrition from preoperative day 1 through postoperative day (POD) 6. The serum GH and insulin-like growth factor-1 (IGF-1) levels, intestinal permeability, peripheral CD4+/CD8+ lymphocyte subsets, and routine blood and biochemistry analyses were evaluated before and after GH treatment. In the study group a significant increase in serum levels of GH and IGF-1 was observed on PODs 3 and 7. A significant decrease in the CD4+ subset population and the CD4+/CD8+ ratio was observed in the control group on POD 7 compared with preoperative studies, whereas no change was observed in the study group. The lactulose/mannitol excretion (L/M) ratio in the control group was elevated significantly on POD 7 compared with that before operation ($p = 0.01$), whereas the L/M ratio in the study group did not change compared to preoperative values ($p = 0.08$). No adverse reactions were related to the administration. There were no differences observed in operation-related complications or postoperative hospital stays between the two groups. This small pilot study suggests that GH attenuated the depression in cellular immunity following surgical stress and possibly reduced the increase in intestinal permeability that occurs following operation. Further studies of a large group of patients are needed to determine if these changes can be translated into improved outcome in surgical patients.

Publication Types:
- Clinical Trial
- Randomized Controlled Trial

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