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Effect of high-dose pancreatic enzyme replacement on prevention of postpancreatectomy hepatic steatosis after pancreatoduodenectomy: A prospective cohort study

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Introduction: Postpancreatectomy hepatic steatosis (PHS) is a long-term complication of pancreaticoduodenectomy (PD), which has been not well noticed. The aim of this study was to evaluate the effect of high-dose pancreatic enzyme replacement therapy (high-dose PERT) on prevention of PHS after PD by analyzing prospectively collected data.

Methods: Among patients who were assigned randomly to receive high-dose PERT (40,000 IU of Norzyme) for 3 months or placebo in the previous prospective study (Clin Gastroenterol Hepatol. 2020;18:926–934), 94 patients who had unenhanced computer tomography (CT) scans at preoperative and postoperative 1 year were enrolled in this study. PHS was defined when mean CT values of the liver were < 40 Hounsfield unit (HU) or 10 HU lower than values of the spleen. The incidence and risk factors of newly developed PHS at postoperative 1 year were analyzed.

Results: There were 42 patients in the high-dose PERT group and 52 patients in the placebo group. The incidence of PHS was significantly lower in the high-dose PERT group (4/42) compared with the placebo group (12/52) ($p < 0.001$). Multivariate analysis identified placebo intake (odds ratio [OR] 1.640, $p = 0.020$), preoperative body mass index (BMI) > 24 (OR 9.065, $p = 0.032$), body weight loss > 5% in postoperative 3 months (OR 2.087, $p = 0.024$) as independent risk factors. Subgroup analysis showed that the lower incidence of PHS after high-dose PERT compared with the placebo control were consistent in high risk groups: preoperative BMI > 24 (high-dose PERT vs. placebo, 3/14 vs. 13/22, $p = 0.019$) and body weight loss > 5% (4/12 vs. 30/46, $p = 0.013$).

Conclusions: The results revealed that high-dose PERT significantly reduced the development of PHS after PD.

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