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The effect of perioperative fluid volume restriction in postoperative complication of pancreaticoduodenectomy

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Introduction: Perioperative fluid restriction has been suggested to reduce morbidity and length of stay. However, there are few studies regarding fluid restriction of pancreato-biliary surgery. The purpose of this study was to compare the morbidity following PD between the fluid restriction group and conventional management group.

Methods: Between September 2017 and October 2020, 72 patients were enrolled for perioperative fluid restriction of PD. During the operation, main fluid was injected at a rate of 6–8 mL/kg*hr. From the operation day to the day 3 postoperatively, 10% dextrose and Hartmann's solution were infused at a rate of 40 mL/hr and $\{(1.5 \times \text{bwt}) - 42\}$ mL/hr, respectively. Of 72 patients, 57 patients were finally analyzed in this study. The control group consisted of 139 patients who underwent PD from March 2013 to March 2016 and they were conventionally managed after the operation. We compared the postoperative morbidity, transfusion rate, length of hospital stays, amount of input and output, and serum creatinine level between the 2 groups.

Results: The rate of major morbidity defined as any complication from grade III to V on the Clavien–Dindo scale in the study group was not significantly higher than that in the control group (19.3% vs. 18.7%; $p = 1.0$). There were no differences in the rate of clinically relevant postoperative pancreatic fistula (CR-POPF) between both groups (15.8% vs. 12.9%; $p = 0.65$). No significant differences were also present in transfusion rate, operation time and length of hospital stay.

Conclusions: Perioperative fluid restriction did not affect incidence of major morbidity, especially CR-POPF following PD.

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