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The Effect Of Early Supplemental Parental Nutrition In Patients After Pancreaticoduodenectomy

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Background : Pancreaticoduodenectomy(PD) has multi-potential factors for malnutrition as its surgical boundary covered organs with digestive juices and decreased bowel motility. Although it is clear that enteral nutrition is superior to parental nutrition(PN) for postoperative patients, it is still controversial whether supplemental-PN is helpful for PD patients who often have poor nutritional status. This study aimed to investigate the effect of use of postoperative supplemental-PN after PD.

Methods : From 2014 to 2020, 927 patients undergoing PD in Samsung-Medical-Center were divided according to use of supplemental-PN (n=161) or not (n=766) analyzed retrospectively. Supplemental-PN was administered to patients as 3-in-1 formula for 1-3 days after PD. Postoperative outcome was included with nutrition status, hospital stay, and postoperative complications. A subgroup analysis was performed on patients with diabetes mellitus(DM) and sarcopenia.

Results : In postoperative complication, Supplemental-PN group had significantly higher rate of postoperative pancreatic fistula(POPF) and delayed gastric emptying ($p<0.001$ and $p=0.012$, respectively). The supplemental-PN group had similar hospital stay ($p=0.547$) but improved nutrition status change ($p<0.001$) with non-PN group. In the subgroup analysis with preoperative DM (n=252), postoperative major complications of supplemental-PN group (37.5 vs 20.6%, $p=0.016$), especially POPF (27.1 vs 10.8%, $p=0.006$), were significantly higher than those with non-PN group. In preoperative sarcopenic patients (n=89), supplemental-PN group had significant prolonged hospital stay compared to non-PN group (13.7 vs 11.4 days, $p=0.040$).

Conclusions : In terms of postoperative complications, the routine use of supplemental-PN after PD is not beneficial for the patients. Especially, its use should be cautioned in patients with preoperative DM and sarcopenia.

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