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SI/CTR Abstract

The Effects of Total Intravenous Versus Inhalational Anesthesia on Fluid Balance for Patients Undergoing Pancreaticoduodenectomy

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Introduction: Pancreaticoduodenectomy (PD), the most common surgical treatment for pancreatic cancer, is a complex procedure with a morbidity of 45-60%. Recent studies indicate that intraoperative use of total intravenous anesthesia (TIVA) may reduce postoperative complications for PD patients, when compared to inhalational anesthesia (INHA). We hypothesized that patients who receive TIVA may have a more favorable fluid balance, which is known to reduce postoperative complications in PD patients.

Methods: We carried out a retrospective analysis of patients who underwent PD at Thomas Jefferson University Hospital and were administered TIVA or INHA during surgery between April 2017 and January 2019. We analyzed intraoperative net fluid balance, complication rates, length of stay (LOS), and readmission rates. Statistical significance was determined using Fisher's exact test or t-test as appropriate.

Results: In the study period we found 50 patients who underwent PD (34 TIVA, 16 INHA). Intraoperative net fluid balance was not significantly different (ns) between groups (TIVA=4127mL, INHA=3458.5mL). Complication rates (TIVA=52.9%, INHA=56.3%, ns)

and median LOS (TIVA=5.5, INHA=6.0, ns) were comparable between groups. Readmission rates were similar (TIVA=44.1%, INHA=37.5%, ns).

Discussion: In the study comparing TIVA to INHA we found no differences in fluid balance, complication rates, LOS, or readmission rates. Given the ease of using an alternative surgical anesthetic, determining whether PD patients who receive TIVA have reduced morbidity, as compared to INHA, is an important potential avenue to improve patient outcomes. While we did not find significant differences, we were limited by a small sample size at the time of analysis.