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Risk Factors Of Unfavorable Outcome Of Patients Who Experienced Unplanned ICU Admission Following Elective Hepatobiliary & Pancreas Surgery

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Background : Hepatobiliary and pancreatic (HBP) surgery is related to high severe complication or perioperative mortality rate. Recently, fewer patients are admitted in the intensive care unit (ICU) immediately after undergoing a major HBP surgery. Hence, it is necessary to have a comprehensive understanding of the patients who experienced unplanned ICU admission (UIA) due to severe postoperative complications. We aimed to identify the prognostic factors of these patients to predict their clinical course and to treat them accordingly.

Methods : : This single-center retrospective cohort study was conducted in Seoul Asan Medical Center. We enrolled patients who required UIA following an HBP surgery from January 1, 2014 to December 31, 2020. Those who underwent emergency surgery, were co-operated in another department, were readmitted in the hospital, underwent routine ICU admission 〈48 h after surgery, and were admitted in the ICU before surgery were excluded

Results : In total, 165 patients met the inclusion criteria, with a mean age of 66.6 years; of them, 76.4% were men. The mean age-adjusted Charlson comorbidity index (ACCI) score was 5.11, and the body mass index was 23.6 kg/m2. Pancreatoduodenectomy was the most common type of surgery (35.2%, 58/165). The mean duration of surgery was 304 min; the mean Acute Physiology and Chronic Health Evaluation (APACHE) IV score was 80.9. The mean length from index surgery to initial ICU admission was 6.9 days; the mean length of stay (LOS) in the ICU was 14.3 days; the mean length of hospital stay was 40.4 days; and the mortality rate was 29.1%. Compared with the favorable outcome group (n=73), the unfavorable outcome (mortality+LOS in ICU ≥7 days) group was older (age 69.6 vs 62.8 years, p〈.001) and had a higher ACCI score (5.6 vs 4.5, p〈.001). They had higher rates of obtaining an American Society of Anesthesiologists physical status score of 3 (35.6% vs 12.3%, p=0.038), undergoing hepatectomy+extrahepatic bile duct resection or hepatopancreatoduodenectomy (40.2% vs 19.2%, p=0.004), and developing sepsis as reasons for ICU admission (43.5% vs 17.8%). In addition, the index surgery to ICU admission was longer (8.7 vs 4.7, p=0.020) and the APACHE IV score was higher by 20 points (90.3 vs 69.8, p〈.001). The ACCI score, surgery type, sepsis incidence, and an APACHE IV score of 〉75 were significant prognostic factors

Conclusions : Patients who underwent UIA following elective HBP surgery with higher ACCI score, complex surgery type, severe condition (APACHE IV score 〉75), and sepsis with unfavorable outcomes should be monitored closely and treated accordingly

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