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A retrospective multicenter validation of 2016 ISGPS classification and grading system of postoperative pancreatic fistula by analyzing 522 consecutive cases of pancreaticoduodenectomy

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Introduction : In 2016, ISGPS proposed an updated definition for postoperative pancreatic fistula (POPF). The definition of B-POPF varies widely and B and C-POPF criteria may overlap to a certain degree.

Methods : A retrospective study of 522 consecutive cases underwent PD in four major hospitals between May 2013 and May 2018 was carried out. Risk factors were examined with univariate and multivariate analysis. B-POPFs were subclassified into 2 classes (B1: non-interventional; B2: interventional). Outcomes were analyzed between subgroups.

Results : 522 cases were recruited. B-POPF rate is 27.4%; C-POPF rate is 5.7%. Reoperation rate is 4.8%. Perioperative mortality is 3.3%. 8 cases were re-admitted in 30 days. The length of stay (LOS) is 27.6±20.0 days. Logistic regression analysis identified 3 independent factors: diameter of pancreatic duct [OR=0.693, 95%CI=(0.559, 0.858)], laparoscopic procedure [OR=4.68, 95%CI=(1.034, 21.083)] and PDCA/CP pathology [OR=0.397, 95%CI=(0.195, 0.811)]. In the comparison between B1 and B2-POPF, there are statistic significance in reoperation rate (1.69% vs. 15.0%, P=0.001); mortality (0 vs. 17.5%, P=0.000); hemorrhage (11.9% vs. 45.0%, P=0.000); ICU stay (1.01±1.89 vs. 5.45±12.11, P=0.026); LOS (35.80±21.75 vs. 47.78±33.75, P=0.041) and cost (USD 27762.57±12433.72 vs. 49433.39±37029.22, P=0.004). The comparison between B2 and C-POPF showed significance between bile leakage (37.5% vs. 11.1%, P=0.041) and rate of reoperation (15.0% vs. 55.6%, P=0.001).

Conclusions : Diameter of pancreatic duct and PDCA/CA pathology are risk factors and laparoscopic procedure may reduce POPF. B-POPF is a heterogeneous entity. 2 subclasses can be identified. Some B2-POPF have the same characters with C-POPF. These results will promote changes and researches for accurate grading.

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