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Association between Body Mass Index and Postoperative Morbidity after Liver Resection of Hepatocellular Carcinoma A Multicenter Study of 1,324 Patients

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Introduction : Mortality following liver resection has decreased dramatically over the last several decades such that some centers report a zero incidence of mortality. Postoperative morbidity, however, remains a major concern. The aim of this study was to investigate the association between preoperative body mass index (BMI) and postoperative morbidity after liver resection for hepatocellular carcinoma (HCC).

Methods : Consecutive patients who underwent curative-intent liver resection for HCC from 2010 to 2016 in seven Chinese centers were enrolled. Patients were divided into three groups according to preoperative BMI: low-BMI (≤ 18.4 kg/m²), normal-BMI (18.5~24.9 kg/m²) and high-BMI (≥ 25.0 kg/m²). Baseline patient characteristics, operative variables, postoperative 30-day mortality and morbidity were compared. Univariable and multivariable analyses were performed to identify independent risk factors associated with postoperative morbidity.

Results : Among 1,324 patients, 108 (8.2%), 733 (55.4%), and 483 (36.5%) were low-BMI, normal-BMI, and high-BMI, respectively. There were no differences in postoperative 30-day mortality among patients based on BMI ($P=0.199$). Postoperative 30-day morbidity was, however, higher in low-BMI and high-BMI patients versus patients with a normal-BMI (33.3% and 32.1% vs. 22.9%, $P=0.018$ and $P<0.001$, respectively). On multivariable analysis low-BMI and high-BMI remained independently associated with increased postoperative morbidity (OR:1.713, 95% CI:1.070-2.743, $P=0.025$, and OR:1.534, 95% CI:1.164-2.021, $P=0.002$, respectively). Similar results were also noted in the incidence of postoperative 30-day surgical site infection (SSI).

Conclusions : Compared with normal-BMI patients, low-BMI and high-BMI patients had higher postoperative morbidity, as well as a higher incidence of SSI after liver resection for HCC.

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