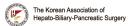
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## Comparative Study Of Propensity Score Matching Method And Benchmark Article Method On The Outcomes Of Laparoscopic Major Liver And Open Major Liver Resection For Hepatocellular Carcinoma

Boram LEE<sup>1</sup>, <u>Jai Young CHO\*</u><sup>1</sup>, Hanisah GURO<sup>2</sup>, Ho-Seong HAN<sup>1</sup>, Yoo-Seok YOON<sup>1</sup>, Hae Won LEE<sup>1</sup>, Soyeon AHN<sup>3</sup>, MeeYoung KANG<sup>1</sup>, Yeshong PARK<sup>1</sup>, Eunhye LEE<sup>1</sup>, Yeongsoo JO<sup>1</sup>

<sup>1</sup>Department Of Surgery, Seoul National University Bundang Hospital, REPUBLIC OF KOREA <sup>2</sup>Department Of Surgery, Amai Pakpak Medical Center, PHILIPPINES <sup>3</sup>3Medical Research Collaborating Center, Seoul National University Bundang Hospital, REPUBLIC OF KOREA

**Background** : To compare the outcomes of major laparoscopic liver resection (LLR) and open liver resection (OLR) for hepatocellular carcinoma (HCC) with two methods.

**Methods** : We retrospectively reviewed a data of 177 patients who underwent major liver resection for HCC (LLR; n=67 vs. OLR; n=110). We performed 1:1 propensity score matching (PSM) between two groups and matched 65 patients for both groups. Another comparison was done with already published article as a benchmark after applying similar inclusion and exclusion criteria (LLR; n=30 vs. OLR; n=34).

**Results** : After PSM, there were no significant differences in blood loss (1407.2±2322.7 vs 1071.5±1160.6ml; P=0.299), and transfusion rate (32.2% vs 32.0%; P=0.574) between two groups. The mean operative time was significantly longer in LLR than in the OLR group (418.7±172 vs 335.1±121.6 min; P=0.002). Complication rate (21.5% vs 33.8%; P=0.085) was similar and the mean hospital stay was shorter in the LLR than in the OLR group (11.4±8.5 vs 17.6±21.4days; P=0.009). After benchmarking method, there were no significant differences in between two groups in terms of blood loss (780±822 vs 947±660.5 ml; P=0.382), transfusion rate (30.0 vs 32.4%; P=0.528), hospital stay (9±3.7 vs 10.4±3.59days; P=0.119), and complication rate (10.0% vs 20.6%; P=0.208). Operation time (395±166.6 vs 296±68.3min; P=0.002) was significantly longer in the LLR than in the OLR group. Benchmarking method showed significant loss of number of patients analysed, but results were quite similar to PSM method.

**Conclusions** : Both methods showed that major LLR was safe compared to major OLR. Benchmarking method can be easily used to compare with data of other published article.

Corresponding Author : Jai Young CHO (jychogs@gmail.com)