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## Influence Of Intraoperative Blood Loss On Hepatocellular Carcinoma Recurrence After Surgical Resection

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**Background** : High incidence of tumor recurrence after surgical resection of hepatocellular carcinoma (HCC) still makes the long-term prognosis unsatisfactory. Besides, tumor related factors, operative factor as intraoperative blood loss (IBL) can also influence on HCC recurrence. Excessive IBL causes anti-tumor immunosuppression via the loss of plasma constituents as natural killer cell and spillage of microscopic cancer cells in the peritoneal cavity.

**Methods** : A total of 142 patients who underwent surgical resection for newly diagnosed single HCC at our hospital between March 2010 and July 2021 were investigated. Patients were classified into two groups by the amount of IBL during hepatic resection: group A (IBL  $\geq$  700 ml, n=47) and group B (IBL < 700 ml, n = 95). Demographics, operative results, and oncologic outcomes were compared between two groups.

**Results** : There was no significant difference of demographics between the groups. IBL ( $1,351 \pm 698$  vs.  $354 \pm 166$ ,  $P=0.000$ ) was significantly increased in group A, compared to group B; these patients had greater HCC recurrence ( $p=0.001$ ) and poor overall survival ( $p=0.017$ ). Preoperative albumin (hazard ratio [HR], 0.471; 95% confidence interval [CI], 0.244-0.907  $p=0.024$ ), microvascular invasion (HR, 2.616; 95% CI, 1.298-5.273;  $p=0.007$ ), and EBL  $\geq$  700 (HR, 2.325; 95% CI, 1.202-4.497;  $p=0.012$ ) were significantly related to tumor recurrence after surgical resection. And microvascular invasion was the only significant predictor for overall survival (HR, 4.695; 95% CI, 1.091-20.199;  $p=0.038$ ).

**Conclusions** : Efforts for minimizing IBL would be important to improve oncologic outcomes after surgical resection in HCC patients.

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