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Prognostic Value of Preoperative Protein Induced Vitamin K Absence or Antagonist II after Hepatectomy for Hepatitis B Related Hepatocellular Carcinoma: Nationwide multicenter study

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Introduction : The prognostic value of PIVKA-II has been insufficiently elucidated. This study is aimed to determine the prognostic value of preoperative serum PIVKA-II after hepatectomy for hepatitis b related HCC.

Methods : The nationwide multicenter database of the Korean Liver Cancer Association was reviewed. Patients with hepatitis b related HCC who underwent liver resection as a first treatment after initial diagnosis between 2008 and 2014 were selected. Comparative analysis between low versus high PIVKA-II was performed. Survival outcomes of propensity score-matched groups were compared. Kaplan–Meier and multivariable analyses were performed to identify risk factors for disease-specific survival. Univariable and multivariable Cox proportional hazards regression were used.

Results : Among 6,770 randomly selected patients with hepatitis b related HCC, 987 patients were included. The disease-specific 5-year survival rate was 84.6% in patients with PIVKA-II of 106.5mAU/mL or less compared with 76.3% for those with a level exceeding 106.5mAU/mL ($p=0.041$). After propensity score matching, the two groups were well balanced ($n=263$, each). In univariable analysis, high PIVKA-II ($>106.5\text{mAU/mL}$) was a significant predictor for worse survival (hazard ratio (HR), 1.527; $p=0.047$). In multivariable analysis, lymph node positivity (HR, 6.123; $p=0.023$), hyponatremia ($<135\text{mEq/L}$) (HR, 4.187; $p=0.002$), tumor size $\geq 5.0\text{cm}$ (HR, 3.399; $p<0.001$), preoperative ascites (HR, 3.874; $p=0.001$), microvascular invasion (HR, 2.639; $p=0.001$), thrombocytopenia ($<100 \times 10^3/\mu\text{L}$) (HR, 2.620; $p=0.001$), and multiple HCC (HR, 2.068; $p=0.007$) were independent predictors for worse disease-specific survival, but not preoperative high PIVKA-II.

Conclusions : Preoperative high PIVKA-II is significantly associated with worse disease-specific survival after hepatectomy for hepatitis b related HCC, nonetheless, not a strong prognostic factor.

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