

## **RISK FACTORS AND POST-RESECTION INDEPENDENT PREDICTIVE SCORE FOR THE RECURRENCE OF HEPATITIS B-RELATED HEPATOCELLULAR CARCINOMA**

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**BACKGROUND:** Independent risk factors associated with hepatitis B virus (HBV)-related hepatocellular carcinoma (HCC) after resection remains unknown. An accurate risk score for HCC recurrence is lacking.

**METHODS:** We prospectively followed up 200 patients who underwent liver resection for HBV-related HCC for at least 2 years. Demographic, biochemical, tumour, virological, and anti-viral treatment factors were analysed to identify independent risk factors associated with recurrence after resection and a risk score for HCC recurrence formulated.

**RESULTS:** Two hundred patients (80% male) who underwent liver resection for HBV-related HCC were recruited. One hundred patients developed HCC recurrence (median duration after resection, 52 weeks). Multivariate analysis identified that the presence of lymphovascular permeation ( $P < 0.001$ ; relative risk [RR]=2.63), microsatellite lesions ( $P < 0.001$ ; RR=2.56), preoperative HBV DNA of  $>20\,000$  IU/mL ( $P = 0.028$ ; RR=1.62) were independently associated with HCC recurrence. Antiviral treatment before ( $P = 0.008$ ; RR=0.07) and after ( $P = 0.004$ ; RR=0.55) resection was independently associated with lower risk of HCC recurrence. A post-resection independent predictive score (PRIPS) was derived and validated with sensitivity of 72.1% and 69.8% and specificity of 62.9% and 77%, to predict the 1- and 3-year risks for the HCC recurrence respectively with the hazard ratio of 2.71 ( $P < 0.001$ ). The area under the curve for the 1- and 3-year prediction were 0.69 and 0.78, respectively.

**CONCLUSIONS:** Several tumour and virological factors were associated with a higher cumulative risk of HCC recurrence after resection. PRIPS was derived for more accurate risk assessment. Antiviral treatment reduced the risk of recurrence.