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High preoparative levels of serum periostin are associated with poor prognosis in patients with hepatocellular carcinoma after hepatectomy

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Abstract

Aims: Periostin (POSTN) is implicated in cancer development and progression. The aim of this study was to evaluate the diagnostic and prognostic significance of serum POSTN in patients with hepatocellular carcinoma (HCC) receiving curative surgery.

Methods: Enzyme-linked immunosorbent assay was performed to determine serum POSTN levels in 69 healthy volunteers, 30 patients with hepatolithiasis, 27 patients with cirrhosis, and 56 HCC patients. The relationships between serum POSTN and clinicopathologic features were analyzed. Receiver operating characteristics analysis was used to calculate diagnostic accuracy of serum POSTN, serum alpha-fetoprotein (AFP), and their combination. The prognostic impact of serum POSTN on overall survival (OS) and relapse-free survival (RFS) was also investigated.

Results: The median serum POSTN level was significantly ($P < 0.05$) increased in HCC patients, compared to healthy controls, patients with hepatolithiasis, and patients with liver cirrhosis. Elevated serum POSTN was only significantly associated with Edmondson grade ($P = 0.007$). The combination of serum POSTN and AFP had a markedly higher area under the curve (0.805 (95% confidence interval [CI]: 0.677-0.932)) than POSTN (0.582 (95% CI: 0.427-0.736)) or AFP (0.655 (95% CI: 0.504-0.806)) alone. Kaplan-Meier analysis indicated that elevated serum POSTN was associated with unfavorable OS ($P =0.031$) and RFS ($P =0.027$). Moreover, multivariate analysis revealed elevated serum POSTN as an independent poor prognostic marker for OS and RFS.

Conclusions: Preoperative serum POSTN has limited diagnostic value in distinguishing HCC from non-malignant liver diseases, but serves as independent prognostic biomarker in HCC patients.

Biography

Wei Wang has completed his Master at the age of 25 years from Anhui Medical University of China. His major is the oncology. So far, he has published more than 5 papers in SCI journals and also taken charge of 2 projects of the Chinese national natural scientific foundation on the anti-angiogenic molecular mechanisms of hepatocellular carcinoma (HCC).