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Br J Cancer. 2015 Sep 1;113(5):756-62. doi: 10.1038/bjc.2015.227. Epub 2015 Aug 13.



Serum levels of chemokines CCL4 and CCL5 in cirrhotic patients indicate the presence of hepatocellular carcinoma.

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Abstract

BACKGROUND: Most hepatocellular carcinomas (HCCs) are diagnosed at an advanced stage. The prognostic value of serum tumour markers alpha-fetoprotein (AFP) and des-gamma-carboxy prothrombin (DCP) is limited. The aim of our study is to evaluate the diagnostic value of serum growth factors, apoptotic and inflammatory mediators of cirrhotic patients with and without HCC.

METHODS: Serum samples were collected from cirrhotic potential liver transplant patients (LTx) with (n=61) and without HCC (n=78) as well as from healthy controls (HCs; n=39). Serum concentrations of CRP, neopterin and IL-6 as markers of inflammation and thrombopoietin (TPO), GCSF, FGF basic and VEGF, HMGB1, CK-18 (M65) and CK18 fragment (M30) and a panel of proinflammatory chemokines (CCL2, CCL3, CCL4, CCL5, CXCL5 and IL-8) were measured. Chi square, Fisher exact, Mann-Whitney U-tests, ROC curve analysis and forward stepwise logistic regression analyses were applied.

RESULTS: Patients with HCC had higher serum TPO and chemokines (P<0.001 for TPO, CCL4, CCL5 and CXCL5) and lower CCL2 (P=0.008) levels than cirrhotic patients without HCC. Multivariate forward stepwise regression analysis for significant parameters showed that among the studied parameters CCL4 and CCL5 (P=0.001) are diagnostic markers of HCC. Serum levels of TPO and chemokines were lower, whereas M30 was significantly higher in cirrhotic patients than in HCs.

CONCLUSIONS: High serum levels of inflammatory chemokines such as CCL4 and CCL5 in the serum of cirrhotic patients indicate the presence of HCC.

PMID: 26270232 PMCID: [PMC4559820](#) DOI: [10.1038/bjc.2015.227](#)

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