

Clinical evaluation of several tumor markers in the diagnosis of primary hepatic cancer

Jian-Ying Li, Yue Huang, Ming-Fang Lin

Jian-Ying Li, Yue Huang, Ming-Fang Lin, Gastroenterology Research Center, Sanming First Municipal Hospital, Sanming 365000, Fujian Province, China

Author contributions: All authors contributed equally to the work.

Correspondence to: Dr. Jian-Ying Li, Gastroenterology Research Center, Sanming First Municipal Hospital, Sanming 365000, Fujian Province, China

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Abstract

AIM: To evaluate the significance of alpha fetoprotein (AFP), gamma-glutamyltransferase (GGT), Carcinoembryonic antigen (CEA) and carbohydrate antigen 125 (CA125) in diagnosis of primary hepatic cancer.

METHODS: Thirty six patients with liver carcinoma (male 26, female 10, aged 29-72 years), 6 with hepatic metastasis of gastrointestinal cancer (all male, aged 37-69 years), 62 with benign liver diseases (male 53, female 9, aged 32-71 years) and 222 without liver diseases (male 152, female 70, aged 22-76 years) were studied. Blood samples were taken by venipuncture. Serum was separated and frozen at -20 °C until the analysis was made. AFP, CEA and CA125 were measured by RIA.

RESULTS: Serum AFP in liver cancer ($476.3 \pm 181.4 \mu\text{g/L}$) was significantly higher than that in hepatic metastasis of gastrointestinal

cancer, benign liver diseases and nonhepatic diseases ($P < 0.01$). Serum GGT in liver cancer was $621.1 \pm 289.9 \text{ w/L}$, significantly higher than that in the other groups ($P < 0.05$). CA125 level in liver cancer ($236.3 \pm 127.2 \text{ U/L}$) was markedly higher than that in benign liver diseases and nonhepatic diseases ($P < 0.01$), but no significant difference was found in hepatic metastasis of gastrointestinal cancer ($219.4 \pm 143.7 \text{ U/L}$). Serum CEA in liver cancer ($8.8 \pm 2.1 \mu\text{g/L}$) was markedly lower than that in hepatic metastasis of gastrointestinal cancer ($32.7 \pm 7.2 \mu\text{g/L}$) ($P < 0.01$). The sensitivity of AFP, GGT, CA125 and CEA in the diagnosis of liver cancer was 72.2%, 88.9%, 63.9% and 11.1% respectively; their specificity was 93.1%, 71.1%, 78.2% and 65.8% respectively. The diagnostic sensitivity and specificity of simultaneous detection of AFP, GGT and CA125 in liver cancer were 91.7% and 88.4% respectively.

CONCLUSION: AFP is superior to GGT, CA125 and CEA in the diagnosis of liver cancer; simultaneous detection of AFP, GGT and CA125 might increase the diagnostic sensitivity and specificity of liver cancer.

Key words: Liver neoplasms/diagnosis; Tumor markers, Biological; Gamma-glutamyltransferase; Carcinoembryonic antigen; Alpha globulins; Serodiagnosis

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