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Relationship between HBxAg and Fas/FasL in patients with hepatocellular carcinoma

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Abstract

AIM: To assess the relationship between HBV X-gene, X-gene product and Fas/FasL which mediate hepatocellular apoptosis in patients with hepatocellular carcinoma.

METHODS: Tissue from 34 patients with hepatocellular carcinoma was tested for the expression of HBxAg. Quantitative ELISA assay was used to detect sFas; and sFasL and PCR were used to detect the HBV X-gene in sera from 30 patients with hepatocellular carcinoma, 32 patients with liver cirrhosis and 20 normal controls.

RESULTS: The positive expression of HBxAg, Fas and FasL in carcinoma tissue was 97.06%, 85.29% and 100%, respectively. The positive signal was mainly presented in the plasma, and all of these three positive staining may appear in the same area. Redit analysis showed that there was no significant difference among these three positive staining ($P > 0.05$). The mean levels of sFas in sera from hepatocellular carcinoma, liver cirrhosis and normal controls were 722.97 ± 321.12, 801.90 ± 419.94 and 224.07 ± 148.23, respectively, showing that sFas levels in patients with hepatocellular carcinoma and liver cirrhosis were significantly elevated than that in normal controls ($P < 0.01$). The mean levels of sFasL in sera from hepatocellular carcinoma, liver cirrhosis and normal controls were 152.27 ± 7.99, 162.97 ± 12.40 and 154.99 ± 6.96, showing that sFasL level in patients with liver cirrhosis was significantly higher than that in patients with hepatocellular carcinoma and normal controls ($P < 0.01$). HBV X-gene was found to be positive in sera of 30% patients with hepatocellular carcinoma; HBV X-gene was found to be positive in sera of 43.75% of patients with liver cirrhosis. There was no significant difference in sFas/sFasL level between HBV X-gene positive patients and HBV X-gene negative patients ($P > 0.05$).

CONCLUSION: The expression of HBxAg and Fas/FasL in the tissue of hepatocellular carcinoma seemed to be almost the same, but relation between cause and effect is unclear. The detection of sFas and sFasL in patient sera may reflect the state of apoptosis mediated by Fas/FasL system. Our data showed that HBV X-gene expression in sera seemed to have no relation to s Fas/sFasL level; however, these data also suggested that some patients with negative HBsAg in sera might have integrated HBV X-gene in liver tissues, and therefore X-gene is detectable in those patient sera.

Key words: Liver neoplasms; Gene expression; Apoptosis; Liver cirrhosis; Serodiagnosis; Hepatitis B virus; Polymerase chain reaction

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