Expression of mutant nuclear b-catenin correlates with non-invasive hepatocellular carcinoma, absence of portal vein spread, and good prognosis.

朱娟秀

Mao TL;Chu JS;Jeng YM;Lai PL;Hsu HC

摘要

Abstract

beta-catenin has functions both in the cadherin-mediated cell adhesion system and in the signalling pathway that mediates dorsal axis patterning in the embryo; it has been shown to be aberrantly expressed or mutated in diverse types of human tumour, but the biological significance of this remains to be clarified. To elucidate the clinical implications of aberrant beta-catenin expression and the potential differences between mutant and wild-type beta-catenin protein expression in hepatocellular carcinoma (HCC), the protein expression was analysed by immunohistochemical staining, supplemented by the analysis of gene mutation. Among 372 unifocal primary HCCs, beta-catenin was detected in the tumour cell membrane alone in 272 tumours (group A) and also in the nuclei in 100 (group B). In group A, 148 tumours had decreased beta-catenin expression, but the reduction did not correlate with invasion or prognosis. When compared with group A, however, group B had significantly lower frequencies of hepatitis B surface antigen carrier ($p=0.015$), and alpha-fetoprotein elevation ($p=0.0003$), but more often had non-invasive HCC ($p<0.001$) and better survival ($p=0.01$). Nuclear beta-catenin expression strongly correlated with mutation of the gene ($p<0.00001$). In group B, HCC with mutant nuclear beta-catenin correlated positively with non-invasive (stage 1) tumour and inversely with portal vein tumour thrombi (stage 3 HCC), and had significantly better 5-year survival, $p<0.001$ and $p<0.0003$, respectively. These results suggest that beta-catenin mutation plays an important role in the tumourigenesis of a subset of HCC of good prognosis, and that mutant and wild-type nuclear beta-catenin proteins are not functionally equivalent