

Reelin expression in liver and pancreas and its correlation with liver fibrosis

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Reelin is an extracellular glycoprotein secreted by a variety of cell types in both embryonic and adult tissue and plays a critical role during brain development (1,2). Reelin is up-regulated in experimental liver cirrhosis of rats in hepatic stellate cell(HSC)s, the cell type mainly implicated in liver fibrogenesis, supporting that reelin is involved in the pathogenesis of liver fibrosis (3). Pancreatic stellate cell(PSC)s share similar morphology and function to HSCs, in pancreatic fibrosis setting (4). Currently, the role of reelin in human liver and pancreas is still unclear. We investigated reelin expression in different stages of chronic liver disease in 81 liver biopsies of HCV affected patients and in pancreatic tissue near to tumoral lesions. The expression of Reelin, HSC markers (CRBP1, alpha-SMA) and Dab1, a Reelin adaptor protein, was investigated by immunohistochemistry and immunofluorescence. Reelin protein was expressed by HSCs and a strong correlation was found between Reelin expression and liver fibrosis stage ($p<0.05$). Reelin expression correlated with CRBP1 positive HSCs ($p<0.05$) but not with alpha-SMA positive ones, suggesting that Reelin should not be regarded as a marker of HSC differentiation but a functional protein expressed by HSCs in some phases of liver fibrosis. Dab1 was found expressed in ductular reaction (DR) cells and the number of Reelin positive HSCs correlated with DR ($p<0.05$), suggesting a paracrine role of Reelin during liver fibrosis. Furthermore we identified in the pancreas PSCs showing a variable degree of Reelin expression. A role of Reelin expression in liver fibrosis and in the remodelling pancreatic tissue surrounding tumoral lesions can be postulated on the basis of the present findings.

References

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Keywords

Reelin; liver fibrosis; hepatic stellate cells; pancreatic stellate cells; HCV.