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INCREASED SERUM ACTIVIN A DIFFERENTIATES ALCOHOLIC FROM CIRRHOSIS OF OTHER AETIOLOGIES

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Introduction, background and aim Activin A is a molecule of the TGF superfamily, implicated in liver fibrosis, regeneration and stem cell differentiation. However, data on activins in liver diseases are very few. The authors therefore studied serum levels of Activin A in chronic liver diseases. To identify the origin of Activin A, levels in the hepatic vein were estimated and expression of Activin A was studied in isolated rat Kupffer and stellate cells.

Methods 162 patients participated in the study: 39 with Hepatocellular Carcinoma (HCC, 19 viral cirrhosis associated, 20 alcoholic cirrhosis associated), 18 with Chronic hepatitis C (CHC), 47 with Primary Biliary Cirrhosis (PBC, 26 stage I–II and 21 stage IV), 22 with Alcoholic cirrhosis (hepatic vein blood available in 16), 20 with HCV cirrhosis (hepatic vein blood available in 18) and 16 patients with alcoholic fatty liver with mild to moderate fibrosis but no cirrhosis. 19 normal controls were also included. A commercially available ELISA was used for serum determinations and a semiquantitative PCR for Activin A expression in isolated rat Kupffer and Stellate cells.

Results Activin-A levels were significantly increased ($p < 0.001$) in serum of patients with alcoholic cirrhosis (median 673 pg/ml, range 449–3279), compared to either controls (149 pg/ml 91–193) or patients with viral cirrhosis (189 pg/ml, 81–480), CHC (142 pg/ml, 65–559) PBC stage I–II (100 pg/ml 59–597) and PBC stage IV (104 pg/ml, 81–579). Only patients with alcoholic cirrhosis associated HCC had significantly increased levels of activin-A (2403 pg/ml, 1561–7220 pg/ml). Activin A mRNA was strongly expressed in both Kupffer and stellate cells.

Conclusions Serum levels of Activin A are increased in patients with alcohol related cirrhosis or HCC and can discriminate these patients from cirrhotics of other aetiologies.

Competing interests None.

Keywords activin A, alcoholic cirrhosis.