J Liver 2016, 5:2(Suppl)
http://dx.doi.org/10.4172/2167-0889.C1.006

A proteomic approach for the involvement of the ANXA4 in HCC: Moving towards an understanding of tumor progression

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Proteomics-based clinical studies have been shown to be promising strategies for the discovery of novel biomarkers of a particular disease. To gain insight into development of Hepatocellular carcinoma utilizing promising strategies (2 dimensional electrophoresis and ESI-QTOF-MS/MS) we aimed to identify potential biomarkers for hepatocellular carcinoma (HCC) and analyzed a set of 115 samples (HCC=50, Fibrosis= 50 & Control= 15). From the series of seventeen differentially expressed proteins, collectively we identify annexin A4 (ANXA4) an intracellular C^{a2}+ sensor, as a new biomarker for early diagnostic and prognostic potential. Expression of ANXA4 was found to be up- regulated (fold change ≥ + 2.0, P ≤0.05) in HCC as compared to fibrosis and control. After validated current finding, we applied *in silico* analysis to integrate the data generated from proteomics technologies. We extend this current understanding to demonstrate the significantly induced phosphorylation and S-nitrosylation signals by insilico study, suggesting a role of ANXA4 in cell survival may have implications for cancer progression and chemoresistance. Moreover, we revealed interacting partner of ANXA4 bestowed with critical capabilities, namely apoptosis, cell cycling, anticoagulation, cell motility and stress resistance that together demonstrate their possible role in cancer progression. Overall, our results shed new light on the potential of biomarker ANXA4 as biomarker used for early diagnosis, prognosis prediction, and personalized treatment of HCC.

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Advances in pharmacotherapy for primary biliary cirrhosis

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Primary biliary cirrhosis (PBC) is a chronic autoimmune liver disease mostly seen in middle-aged women characterized by progressive non-suppurative destruction of small bile ducts resulting in intra hepatic cholestasis, parenchymal injury and ultimately end-stage liver disease. Despite major breakthroughs in our understanding of PBC, there remains only one FDA-approved agent for treatment: ursodeoxycholic acid (UDCA) to which one-third of patients are unresponsive. Biochemical response to treatment with UDCA is associated with excellent survival rates in PBC patients. However, there is a need for alternative treatments for non-responders. Results from human epidemiological and genetic studies as well as preclinical studies in PBC animal models have provided a strong impetus for the development of new therapeutic agents. In this review, we discuss the recent advances in translational research in PBC focusing on promising therapeutic approaches, namely immune-based targeted therapies and agents targeting the synthesis and circulation of bile acids. We are in a new era for the development of novel therapies for PBC. Data on fibrates, budesonide and obeticholic acid offer encouragement for non-responders to UDCA.

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