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Serum lipid alterations identified in chronic Hepatitis B, Hepatitis B virus-related cirrhosis and carcinoma patients

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Backgrounds & Aims: Hepatitis B virus (HBV) is a major pathogenic factor of liver diseases. The incidences of chronic hepatitis B (CHB), HBV-induced cirrhosis and carcinoma are high and increasing. This study aimed to evaluate lipid metabolite changes in the serum that are associated with disease progression from CHB to HBV-induced cirrhosis and to HBV-induced carcinoma.

Methods: A targeted metabolomic assay was performed in fasting sera from 136 patients with CHB, 104 patients with HBV-Cirrhosis, and 95 patients with HBV-carcinoma using ultra-performance liquid chromatography triple quadrupole mass spectrometry (UPLC-TQMS).

Results: Totally 140 metabolites were identified. A clear separation between HBV-cirrhosis and HBV-carcinoma was obtained using the PLS-DA (partial least squares discriminant analysis) scores of 9 lipid metabolites. Among the 9 metabolites, progressively lower levels of long-chain lysophosphatidylcholines (lysoPC a C18:2, lysoPC a C20:3, lysoPC a C20:4) were observed from CHB to cirrhosis to carcinoma; lower levels of lysoPC a C20:4 were also found in patients with higher Model For End-Stage Liver Disease (MELD Score) in the same disease group; and lysoPC a C20:3 levels were lower in Child-pugh Class C than in Class A and Class B in HBV-Cirrhosis and HBV-Carcinoma patients. Octadecadienylcarnitine(AC C18:2) level was higher in HBV-Cirrhosis patients than in the other two groups.

Conclusions: Serum levels of selected long-chain lysoPCs are promising markers for the progression of HBV-induced liver diseases.

Biography

Tao Wu has completed her PhD from Shanghai University of Traditional Chinese Medicine. She is mainly engaged in the field of the prevention and treatment of metabolic disease and application of metabonomics in clinical metabolic disease. She has published more than 20 papers in reputed journals.

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