Hepatic CXCL16 is increased in gallstone accompanied with liver injury

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Abstract

Background and aims: This study aimed to investigate the relationship between circulating soluble C-X-C chemokine ligand 16 (CXCL16) levels and clinical characteristics of gallstone.

Methods: 93 subjects including 53 subjects with gallstone, 25 subjects with nonalcoholic fatty liver disease (NAFLD), and 40 control subjects were recruited. All gallstone subjects underwent ultrasounds to confirm the gallstone patients. Serum CXCL16 levels and other clinical and biochemical parameters in all subjects were obtained based on standard clinical examination methods. Liver tissues from patients with gallstone undergoing cholecystotomy and healthy subjects were also used to determine the hepatic CXCL16 profiles by IHC staining and real-time quantitative PCR.

Results: Serum CXCL16 levels were significantly increased in patients with gallstone and NAFLD as compared to healthy controls ($P < 0{\cdot}001$). Hepatic CXCL16 mRNA and protein levels were also significantly increased in gallstone patients following with elevation of hepatic triglycerides and free fatty acid concentration, as compared to those in healthy subjects ($P < 0{\cdot}001$). Otherwise, serum CXCL16 levels positively correlated with nonalcoholic fatty liver disease (NAFLD), alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, gamma-glutamyl transpeptidase (GGT) and direct bilirubin ($P < 0{\cdot}05$), but negatively with total protein and albumin after adjustment with age and gender. Multiple stepwise regression analyses indicated that CXCL16 was independently associated with AST, NAFLD and albumin ($P < 0{\cdot}05$, respectively).

Conclusions: Serum CXCL16 levels are significantly increased in patients with gallstone, and are independently associated with liver injury in Chinese population, suggesting that CXCL16 may be a biomarker of liver injury in subjects with gallstone or NAFLD.

Keywords: CXCL16; NAFLD; gallstone

Reference:

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