A STUDY OF SOME SERUM MARKERS FOR EVALUATING THE EXTENT OF LIVER FIBROSIS IN CHRONIC HEPATITIS "C" PATIENTS

Thesis
Submitted for fulfillment of the M.D. Degree
In Medical Biochemistry

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Faculty of Medicine
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2013
Introduction

Chronic hepatitis C virus (HCV)-related cirrhosis has become one of the most common indications for liver transplantation (LT), accounting for approximately 50% of transplants in the United States and in Europe [Micheloud et al., 2009]. Recurrent histological hepatitis occurs in the majority of patients, with progression to cirrhosis in up to 30% after 5 years of follow-up. This, in turn, leads to a reduction in survival that recently was described to be lower than that observed in patients having undergone liver transplantation for causes other than HCV (Cross et al., 2009).

Liver cirrhosis is a complex process involving production and deposition of insoluble components that constitute the extra-cellular matrix. These components can be divided into collagenous and noncollagenous glycoproteins; fibronectin, laminin, undulin, entactin, vitronectin, tenascin, osteonectin, and elastin, proteoglycans; heparan, dermatan, and chondroitin sulfates, and a polysaccharide; hyaluronan-(hyaluronic acid; HA) (Kim et al., 2009).

Serum markers of liver fibrosis:

Markers associated with the liver fibrosis can be divided into 3 groups:

1) Markers associated with matrix deposition.
2) Markers associated with matrix degradation.
3) Cytokines and chemokines associated with fibrogenesis.

(Michael and Nezam, 2003)
YKL-40 (Chitinase 3-like 1, CH3L1, Cartilage glycoprotein-39) is a glycoprotein which is related in amino acid sequence to the chitinase protein family. We termed this protein YKL-40 based on its molecular weight (40 kDa) and the one-letter code for its three N-terminal amino acids (tyrosine, lysine and leucine), (Hakala et al., 1993) but has no chitinase activity. It was initially discovered as a prominent protein in the whey secretions of non-lactating cows (Rejman & Hurley, 1988) and as a protein secreted in large amounts by the human osteosarcoma cell line (Johansen et al., 1992) by cultures of human synovial cells and by cultures of human cartilage cells (Nyikos & Golds, 1990; Johansen et al., 1993).

Liver biopsy is currently the gold standard in assessing liver histology. One of the most important information obtained by a liver biopsy in patients with chronic viral hepatitis B and C is the stage of fibrosis. This has an important prognostic value on which the decision to treat the patient with antiviral therapy is currently based (Dienstag, 2002).