Introduction

Hepatitis C virus (HCV) infection and its complications are known to be major public health problem in Egypt, where 10-15% (about 9 million) of general population is infected. Approximately 20% of chronically infected patients develop complications such as liver fibrosis and cirrhosis. Subsequent complications include liver failure and hepatocellular carcinoma, which are the main cause of mortality ***(Frank et al., 2000).***

Chronic HCV infection results in complicated cascade of immune mediated inflammatory events that result in inflammation, necrosis, fibrosis and cirrhosis ***(Duffour , 1997).***

Until recently, liver fibrosis has been believed to be irreversible, but recent studies suggest that liver fibrosis and cirrhosis are a dynamic process and potentially reversible ***(Schuppan et al., 2003) and (Afdhal and Nunes, 2004).***

Currently, liver biopsy is still considered the gold standard for assessing liver histology. In Egypt clinicians depend mainly on liver biopsy to estimate the degree of fibrosis. However, liver biopsy is an invasive procedure and severe complications had been reported ***(Afdhal and Nunes, 2004).***

When cirrhosis is obvious, biopsy is not appropriate. There are few studies in the literature estimating the predictive value for cirrhosis of clinical, biologic or morphologic signs ***(Lebrec et al., 1982) ,(Piccinino et al., 1986), (Teare et al., 1993) and (Aube et al., 1999).*** The following signs potentially have a high positive predictive value: firm liver, ascites,

and splenomegalia, spider angiomata, prothrombin time lower than 60%, high serum hyaluronate and platelet count < 100,000 / cmm. With ultrasound, liver surface nodularity and reduction of portal flow velocity have the better predictive values.

A reduction in the indications for liver biopsy could be achieved by increasing the positive predictive value and the negative predictive value of surrogate cirrhosis markers ***(Poynard et al., 2000).***

Nowadays, serum fibrotic biochemical markers that provide alternatives to liver biopsy in patients with chronic HCV, as fibro test for assessment of fibrosis and Acti test for necroinflammatory activity are being used, ***(Poynard et al., 2002 and Myers et al., 2002)***, but their results don't consistently predict either the presence or absence of significant fibrosis and could not reliably be used to reduce the need of liver biopsy ***(Rossi et al., 2003)***

Liver fibrosis due to HCV infection is a dynamic process during which different biochemical markers associated with connective tissue turnover are released into the blood for example increased serum level of procollagen III N-terminal peptide (PIII NP) ***(Murawaki et al., 1994)***, decreased serum level of matrix metalloproteinase (MMP-1) ***(Murawaki et al., 1999)***, associated with severe necro-inflammation, and progression of fibrosis indicated by increased levels of 7S fragment of type IV collagen (PIVNP) ***(Murawaki et al., 1994)***, hyalouronic acid ***(Patel et al.,2003)***, gelatinase A ***(Murawaki et al., 1999)*** , and tissue inhibitor of metalloproteinase ***(Murawaki et al., 1994).***

In addition, cytokines such as transforming growth factor TGFβ1 strongly up regulates production and deposition of the major extracellular matrix molecules ***(Gressner, 2002)***.

The measurement of two combined serum markers for example: PIII NP (reflecting fibrogenesis) and MMP-1 (reflecting fibrolysis) identified cut-off values that provided reliable information about the amount of liver fibrosis in chronic HCV ***(Leroy et al., 2004)***.