

Insulin Resistance in Patients with Chronic Hepatitis C Virus Infection: Upper Egypt Experience

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Abstract : Background: In the last few years, factors such as insulin resistance (IR) and hepatic steatosis have been linked to progression of hepatic fibrosis. Patients with chronic liver disease, and cirrhosis in particular, are known to be prone to IR. However, chronic HCV (hepatitis C) infection may induce IR, regardless of the presence of liver cirrhosis. Our aims are to study insulin resistance (IR) assessed by HOMA-IR (Homeostatic Model Assessment Insulin Resistance) as a possible risk factor in disease progression in cirrhotic patients and to evaluate the role of IR in hepatic fibrosis progression. The correlations of HOMA-IR values to laboratory, virological and histopathological parameters of chronic HCV are also examined. Methods: The study included 50 people divided into 30 adult chronic hepatitis C patients diagnosed by PCR (polymerase chain reaction) within previous 6 months and 20 healthy controls. The functional and morphological status of the liver were evaluated by ultrasonography and laboratory investigations including liver function tests and by liver biopsy. Fasting blood glucose and fasting insulin levels were measured and body mass index and insulin resistance were calculated. Patients having HOMA-IR >2.5 were labeled as insulin resistant. Results: Chronic hepatitis C patients with IR showed significantly higher mean values of BMI (body mass index) and fasting insulin than those without IR ($P < 0.000$). Patients with IR were more likely to have steatosis ($p = 0.006$), higher necroinflammatory activity ($p = 0.05$). No significant differences were found between the two groups regarding hepatic fibrosis. Conclusion: HOMA-IR measurement could represent a novel marker to identify the cirrhotic patients at greater risk for the progression of liver disease. As IR is a potentially modifiable risk factor, these findings may have important prognostic and therapeutic implications. Assessment of IR by HOMA-IR and improving insulin sensitivity are recommended in patients with HCV and related chronic liver disease.

Keywords : hepatic fibrosis, hepatitis C virus infection, hepatic steatosis, insulin resistance

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