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Contact: Lin Tian

wjg@wjgnet.com

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Higher HCC risk with increased insulin resistance in hepatitis C patients

Recent studies have demonstrated that type 2 diabetes mellitus (DM) is associated with high risk of hepatocellular carcinoma (HCC) development in patients with chronic hepatitis C. Insulin resistance (IR), which correlates inversely with circulating adiponectin concentration, is a consistent finding in patients with type 2 DM. Chronic hepatitis C virus (HCV) infection has been reported to be associated with increased IR. Recent studies suggest that IR plays a crucial role in fibrosis progression, and has been demonstrated to have a negative impact on treatment responses to antiviral therapy in patients with chronic hepatitis C.

A research article to be published on May 14, 2010 in the *World Journal of Gastroenterology* addresses this question. The research team led by Dr. Hung from Kaohsiung Chang Gung Memorial Hospital prospectively investigated the IR assessed by the homeostasis model (HOMA-IR) and serum adiponectin level in two independent cohorts of consecutive newly diagnosed HCC patients and those with different clinical stages of chronic HCV infection. Among 165 HCC patients, type 2 DM was more prevalent in HCV subjects compared to hepatitis B virus (HBV) or non-HBV, non-HCV cases. HOMA-IR was higher in HCC patients with HCV than in those with HBV infection. In 188 patients with chronic hepatitis C, HCC subjects had higher blood sugar, insulin level and HOMA-IR than those with chronic hepatitis and advanced fibrosis.

Based on stepwise logistic regression analysis, HOMA-IR was one of the independent factors associated with HCC development. This result was similar even if the diabetic subjects were excluded for analysis. The research team concluded that increased IR, regardless of the presence of diabetes, is significantly associated with HCC development in patients with chronic HCV infection.

These findings may have important prognostic and therapeutic implications in the management of chronic HCV-infected patients. Since IR is a potentially modifiable factor, therapeutic intervention aimed at decreasing IR may be warranted in these patients.

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Reference: Hung CH, Wang JH, Hu TH, Chen CH, Chang KC, Yen YH, Kuo YH, Tsai MC, Lu SN, Lee CM. Insulin resistance is associated with hepatocellular carcinoma in chronic hepatitis C infection. *World J Gastroenterol* 2010; 16(18): 2265-2271 <http://www.wjgnet.com/1007-9327/full/v16/i18/2265.htm>

Correspondence to: Dr. Chao-Hung Hung, Division of Hepatogastroenterology, Department of Internal Medicine, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, 123 Ta Pei Road, Niao Sung 833, Kaohsiung, Taiwan, China. chh4366@yahoo.com.tw

Telephone: +886-7-7317123 Fax: +886-7-7322402

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