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HEPATITIS C VIREMIA INCREASES THE PREVALENCE OF NON-INSULIN-DEPENDENT DIABETES MELLITUS IN A HEPATITIS B AND C ENDEMIC AREA

Jee-Fu Huang[1,2], Wan-Long Chuang[1], Chia-Yen Dai[1,3], Chi-Kung Ho[4], Wen-Yu Chang[1], Ming-Lung Yu[1,3]

[1]Hepatobiliary Division, Department of Internal Medicine, Kaohsiung Medical University Hospital, Kaohsiung; [2]Department of Internal Medicine, Kaohsiung Municipal Hsiao-Kang Hospital, Kaohsiung; [3]Department of Occupational Medicine, Kaohsiung Municipal Hsiao-Kang Hospital, Kaohsiung; [4]Department of Occupational Medicine, Kaohsiung Medical University Hospital, Kaohsiung.

BACKGROUND: In addition to established liver injury, there are multiple examples of extrahepatic disease attributed to hepatitis C virus (HCV) infection. Diabetes mellitus (DM), mostly non-insulin-dependent diabetes mellitus (NIDDM), is a less recognized example.

AIMS: To elucidate the epidemiological link between NIDDM and viral hepatitis infections, a prospective, computer-sampled cross-sectional study was conducted in an area endemic for viral hepatitis B (HBV) and HCV infections.

PATIENTS AND METHODS: A total of 9,934 eligible subjects aged 40 to 65 years underwent blood testing for hepatitis B surface antigen (HBsAg), hepatitis C virus antibody (anti-HCV), fasting plasma glucose, total cholesterol, triglycerides, and alanine aminotransferase levels.

RESULTS: The prevalence of HBsAg (+) and anti-HCV (+) was 13.1% and 6.5%, respectively. For those with HCV viremia, it showed significant differences between NIDDM and non-NIDDM subjects (6.9% vs 4.5%; $p<0.001$). On the other hand, the prevalence of HBsAg-positivity did not differ between NIDDM and non-NIDDM subjects (12.5% vs 13.9%; $p=0.19$). The prevalence of NIDDM among subjects for HBsAg (+), anti-HCV (+), HCVRNA (+), and those negative for viral hepatitis markers were 11.4% (155/1,363), 15.0% (96/642), 18.0% (86/478), and 12.5% (997/8,004), respectively. The prevalence of NIDDM among HCVRNA-positive subjects was significantly higher than in those positivity for HBsAg (18.0% vs 11.4%; $p=0.001$) and those negative for viral hepatitis markers (18.0% vs 12.5%; $p=0.001$). By contrast, there was no difference in prevalence of NIDDM between positive for HBsAg and those negative for viral hepatitis markers (11.4% vs 12.5%; $p=0.303$). Multivariate logistic regression analyses showed that HCV viremia was the leading significant factor associated with NIDDM, followed by male gender, hypertension, BMI, and age.

CONCLUSIONS: We demonstrated a significant association between NIDDM and HCV infection, but not HBV infection, in this HBV/HCV endemic area.

Keywords: viral hepatitis, non-insulin dependent diabetes mellitus