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Possible Association of Elevated Plasma Levels of Growth Arrest-Specific Protein 6 and the Soluble Form of Tyrosine Kinase Receptor Axl with Low Hepatitis C Viral Load in Patients with Type 2 Diabetes Mellitus

By

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Abstract

This study aimed to investigate the plasma levels of Gas6 and soluble Axl (sAxl) in patients with chronic hepatitis C virus (HCV) infection with and without type 2 diabetes mellitus (T2DM). The study involved four groups; 50 patients with chronic HCV, 50 patients with T2DM, 50 patients with chronic HCV and T2DM, and 31 age- and sex-matched healthy controls. T2DM was diagnosed according to American Diabetes Association criteria, HCV antibodies were detected by enzyme-linked immunosorbent assays (ELISA) and confirmed by real-time-polymerase chain reaction. Plasma Gas6 and sAxl levels were assayed in all groups by ELISA. Significant low levels of GAS 6 in HCV/T2DM group versus HCV group were detected (7.92 – 5.18 vs. 16.09 – 7.36, respectively, p = 0.000), but higher than T2DM and control groups (p = 0.05), although non-significant. HCV load was higher in the HCV group than the HCV/T2DM group (1,888,300 – 5,595,070 vs. 1,417,900 – 4,066,460 copies/mL, respectively, p = 0.632). Among HCV group, significant positive correlations were detected between Gas6 and sAxl levels with HCV viral load (r = 0.48, p = 0.000 and r = 0.43, p = 0.002, respectively), while among HCV/T2DM group, significant negative correlations were detected (r=-0.29, p = 0.04 and r=-0.34, p = 0.014, respectively). Significant negative correlations were detected between Gas6/sAxl levels and glycated hemoglobin (r=-0.36, p = 0.01 and r=-0.4, p = 0.003,

respectively) in T2DM despite the positive correlations detected in HCV/T2DM ($r = 0.27$, $p = 0.053$ and $r = 0.55$, $p = 0.000$, respectively). In conclusion, Gas6/Axl system in combined HCV/T2DM diseases may affect the pathogenesis and can alter the biomarkers and complications of both diseases in a manner that differs from a solitary disease.