Is endotoxin receptor CD14 rs2569190/C-159T gene correlated with chronic hepatitis C?

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It is still unknown why the natural history of chronic disease caused by hepatitis C virus (HCV), which currently infects 3% of the world's population, varies from mild in some patients to rapidly progressing in others.

Age, sex, alcohol consumption and liver sensitivity to gut-derived bacterial endotoxins, were the early factors defined to enhance the risk of fibrosis progression. Host genetic variations, e.g., the CD14 single nucleotide polymorphism (SNP), rs2569190/C-159T, have been recently intensively investigated and suggested to be prognostic factors for cirrhosis in various liver diseases. Is this endotoxin receptor SNP correlated with liver disease features in chronic hepatitis C patients?

A research article to be published on August 21, 2009 in the World Journal of Gastroenterology addresses this question. The research team lead by Professor Sabine Mihm and her colleagues from the Department of Gastroenterology and Endocrinology, University Medical Center Göttingen, Germany, analyzed the distribution of various epidemiological, biochemical, and histological characteristics in 2 cohorts of Caucasian chronic hepatitis C patients with respect to their genotypes according to the CD14 rs2569190/C-159T SNP.

In one cohort, patients who carried 2 variant alleles (TT) were found to be younger than C allele carriers (CC or CT). Among the histological

lesions studied, portal lymphoid aggregates were more frequently observed among TT than among C carriers. The presence of portal lymphoid aggregates was also closely correlated with another 2 lesions, moderate and severe hepatic inflammation and the presence of bile duct damage. However, the degree of fibrosis was not found to be related to the CD14 gene C-159T SNP.

The different situation between chronic liver diseases caused by HCV infection or by alcohol consumption in relation to TT status suggests that endotoxin sensitivity depends on both genetic and environmental factors (gene environment interaction). Our analysis suggests, for the first time, a relationship between the CD14 variation and the formation of portal lymphoid aggregates, which was attributed to the host's immunological participation in liver disease pathogenesis.

More information: Askar E, Ramadori G, Mihm S. Endotoxin receptor CD14 genevariants and histological features in chronic HCV infection. *World J Gastroenterol* 2009; 15(31): 3884-3890
www.wjgnet.com/1007-9327/15/3884.asp

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