OBJECTIVE: The lipopolysaccharide (LPS)-triggered release of inflammatory cytokines from Kupffer cells is mediated via the CD14/TLR4 receptor complex. This inflammatory pathway can be influenced by alterations in genes encoding for LPS receptor components. Thus, a -260 C>T transition in the CD14 promoter is thought to result in enhanced CD14 expression thereby increasing the LPS responsiveness in chronic liver diseases, whereas a D299G exchange in the TLR4 gene has the opposite effect. Our objective was to analyze these two variations.

MATERIAL AND METHODS: The study comprised 1712 patients with chronic liver diseases of different etiologies and 385 healthy controls. Genotyping was carried out by melting curve analysis with fluorescence resonance energy transfer (FRET) probes in the LightCycler. RESULTS: Genotype frequencies of CD14 -260C>T and TLR4 D299G did not significantly differ between patients and controls (CD14 TT 21.6% versus 21.8%; TLR4 DG or GG 9.7% versus 10.4%). We found no significant correlation of these alterations with disease course either in the groups of patients with alcoholic liver disease or hepatitis C virus (HCV) infection or among patients requiring liver transplantation. A significantly higher frequency of the CD14 -260TT genotype was observed (36.6% versus 21.8% in healthy controls,
p=0.036) only in a small subgroup of patients (n=41) with mild cryptogenic chronic liver disease.

CONCLUSIONS: Variants within these LPS receptor genes were equally distributed among patients with chronic liver diseases of different etiologies and obviously do not confer an increased risk for the severity of these chronic liver processes.