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The Impact of gene polymorphisms -899G/C and certain indices on hepatic fibrosis: Relevance to chronic liver diseases

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Background: The link between cyclooxygenase-2 (COX-2) gene polymorphisms and liver diseases has been widely reported. Early and precise estimation and staging of hepatic fibrosis are crucial for prognosis and treatment decisions in those patients. Overexpression of cyclooxygenase 2 (COX-2) has been proposed to be concomitant with hepatocarcinogenesis. We aimed to clarify non-invasive rationale for staging of liver fibrosis using the combined role of -899G/C polymorphism of COX-2 gene, alteration of tumor markers CA 19-9 and CA 125, and plasma protein pattern comparing them to METAVIR stages of liver biopsy. Material and Method: We recurited 103 patients with post-hepatic liver fibrosis and 42 healthy controls. The polymorphism of COX-2 -899G/C was detected by PCR-TaqMan probes. Tumor markers CA19-9, CA125, were analyzed using quantitative ELISA. Plasma proteins were detected by the capillary electrophoresis method. The percutaneous liver biopsy was done for all HCV patients to assess the degree of fibrosis. Results: The genotypes of COX-2 -899G/C were: GG, GC, and CC. The frequencies were 68.0%, 28.2% and 3.9% in the fibrotic group; 97.06%, 2.4%, and 0.0% in healthy control group respectively. The percent COX-2 expression for the fibrotic group and the healthy group were 32% and 2.3% respectively. COX-2 expression scores on mild- vs. sever-fibrosis stages (METAVIR stages 1,2 vs. stages 3,4) were 18.2 %and 81.8% respectively (OR=48.00, 95%CI). Serum level of our tumor markers were significantly higher in fibrotic patients than in control group (69.40 ± 51.82, 13.41 ± 6.49 respectively for CA 19.9 and 59.16 ± 47.23, 10.90 ± 8.36 for CA 125) and in polymorphic than GG patient (116.96 ± 55.00, 33.64 ± 28.39 respectively for CA 19.9 and101.62 ± 51.29, 27.89 ± 25.51 respectively for CA 125). Conclusion: COX-2 -899C allele carriers are more vulnerable to develop hepatitis C-related hepatic fibrosis. The combined elevation of CA 19-9 and CA 125 estimation are useful for identifying patients with advanced fibrosis or cirrhosis. Which play an imperative role in perturbation of the liver diseases.

Biography

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