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THE MDA AS LIPID PEROXIDATION MARKER STIMULATED UNDER THE FIBROTIC LIVER CONDITION

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Introduction: MDA(malondialdehyde) is the parameter of lipid peroxidation. The change of MDA value was investigated in normal and in fibrotic rats by bile duct ligation and scission operation. In order to know how does lipid peroxidation play under the fibrotic condition we studied whether MDA as lipid peroxidation marker has correlation with one of the liver fibrotic parameters.

Material & Methods: The rats were divided into the normal and fibrotic groups. The liver fibrosis in rats was induced by BDL/S operation and the rats were observed for 2 weeks. Sera and liver tissue were used for MDA and the clinical biochemistry(AST, ALT, ALP, BUN, t-bil) and total collagen content(hyp). The t-test was accepted for the correlation, significant, median and standard deviation of data.

Result: The liver fibrosis developed in 2 weeks after BDL/S operation. The strong jaundice on ear and bile juice stasis(2-6 ml) in expanded extrahepatic bile duct appeared in BDL/S operated rats. The ratio of liver to the body weight was observed significantly higher in fibrotic rats than in normal group($3.8 \pm 0.24\%$, $5.89 \pm 0.45\%$, $p < 0.001$). The significantly higher value of AST(44.0 ± 13.2 IU/ml, 238.5 ± 44.8 IU/ml, $p < 0.001$), ALT(15.88 ± 3.33 IU/ml, 32.25 ± 4.64 IU/ml, $p < 0.0001$) and t-bilirubin(0.1 ± 0.2 mg/dl, 6.48 ± 0.56 mg/dl, $p < 0.001$) showed in fibrotic rats than in normal rats. Especially the total collagen as fibrotic marker was significantly higher in BDL/S operated group than in normal group(242.0 ± 74.9 $\mu\text{g/g}$, 528.9 ± 229 $\mu\text{g/g}$, $p < 0.001$). The MDA value was significantly higher 4times in fibrotic liver group compared with normal group(6.3 ± 2.2 nmol/ml, 23.8 ± 3.2 nmol/ml, $p < 0.001$). The good correlation showed between MDA and AST, t-bil($r=0.79$, $r=0.90$) in all sample, and weak correlation between MDA and ALP, hyp($r=0.68$, $r=0.69$).

Conclusion: The intensive lipid peroxidation was induced in 2 week after operation for biliary liver fibrosis. And the result of good or weak correlation between MDA and AST, ALP, t-bil, hyp means that the measurements of MDA, AST, ALP in sera and hyp in liver tissue of the fibrotic liver are useful parameters for antioxidant and hepatic protective effect screening.

Paternal treatment with subchronic low doses of CP induced the failure of apoptosis to eliminate cells with DNA damage in testes, which caused adverse effects on male fertility and pregnancy outcome. (2) Although acrolein has failed to induce apoptosis at subchronic low doses, it showed no remarkable adverse effects on male fertility as well as pregnancy outcome, suggesting enhancing effect of two reactive metabolites of CP each other *in vivo*.