

Study on the dynamic alterations of serum HA in rats with carbon Tetrachloride-induced liver fibrosis

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Author contributions: All authors contributed equally to the work.

Supported by The Natural Scientific Foundation of Yunnan Province, No. 96C010M.

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Received: May 5, 2000
Revised: June 10, 2000
Accepted: July 10, 2000
Published online: September 15, 2000

Abstract

AIM: To study the clinical significance of alterations of serum hyaluronic acid in rats with carbon tetrachloride induced liver fibrosis.

METHODS: Rat liver fibrosis model was induced by carbon tetrachloride (CCl₄). The rats were divided into five groups: group 1 (control): 0 wk with no CCl₄-inducing; group 2, 3, 4 and 5: 3, 6, 9 and 12 wk after CCl₄-induction respectively. Serum HA level was

analysed among various live rbfibrosis groups and control, and then compared the HA findings with the hepatic histopathology.

RESULTS: During rat liver fibrosis, serum HA levels of the liver fibrosis groups (group 2: 7.98 ng/mL; group 3: 20.10 ng/mL; group 4: 229.73 ng/mL; group 5: 324.74 ng/mL) were significantly higher than that of control group (group 1: 0.21 ng/mL) ($P < 0.01$), in which group 4 and group 5 are much higher 1094 times (229.73 ng/mL/0.21 ng/mL) and 1546 times (324.74 ng/mL/0.21 ng/mL) than group 1 respectively. When compared with each other, the serum HA levels are 38 times (7.98 ng/mL/0.21 ng/mL; $P < 0.01$, group 2 vs group 1); 2.5 times (20.10 ng/mL/7.98 ng/mL; $P < 0.01$, group 3 vs group 2); 11.4 times (229.73 ng/mL/20.10 ng/mL; $P < 0.01$, group 4 vs group 3); 1.4 times (324.74 ng/mL/229.73 ng/mL; $P < 0.01$, group 5 vs group 4) respectively.

CONCLUSION: The results demonstrated that the dynamic alterations of serum HA play an important role in the early clinical diagnosis and staging of liver cirrhosis.

Key words: Hyaluronic acid/blood; Liver fibrosis; Rats; Sandwich immunoassay; Carbon tetrachloride; Immunohistochemistry

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Ma L, Zhao LS, Li CH, Lu Q, Li RK, Deng SS. Study on the dynamic alterations of serum HA in rats with carbon Tetrachloride-induced liver fibrosis. *World J Gastroenterol* 2000; 6(Suppl3): 100 Available from: URL: <http://www.wjgnet.com/1007-9327/full/v6/iSuppl3/100.htm> DOI: <http://dx.doi.org/10.3748/wjg.v6.iSuppl3.100>

E- Editor: Zhang FF



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