

problem. Th-2 cytokines such as IL-4 and IL-10, have been demonstrated to inhibit DTH granule formation and increased production of these cytokines was associated with impaired DTH reaction^[11-15]. Th-2 cytokines may affect CCR5 expression of macrophages, because a high concentration of Th-2 cytokines can alter the recruitment of immune cells to DTH granules at least partly by inhibiting CCR5 expression.

REFERENCES

- Deng H, Liu R, Ellmeier W, Choe S, Unutmaz D, Burkhart M. Identification of a major co-receptor for primary isolates of HIV-1. *Nature*, 1996;381(6584):661 - 666
- Dragic T, Litton V, Alloy GP, Martin SR, Huang Y, Nagashima KA. HIV-1 entry into CD4+ cells is mediated by the receptor CC-CKR-5. *Nature*, 1996;381(6584):667 - 673
- Samson M, Libretto F, Doranz BJ, Rocker J, Liesnard C, Farmer CM. Resistance to HIV-1 infection in Caucasian individuals bearing mutant alleles of the CCR-5 receptor gene. *Nature*, 1996;382(6593):722 - 725
- Cocchi F, DeVico AL, Grain Demo A, Arya SK, Gallo RC, Lush P. Identification of RANTES, MIP-1 alpha, and MIP-1 beta as the major HIV-suppressive factors produced by CD8+ T cells. *Science*, 1995;270(5243):1811-1815
- Paxton WA, Martin SR, Tse D, O'Brien TR, Skurnick J, VanDervanter NL. Relative resistance to HIV-1 infection of CD4+ lymphocytes from persons who remain despite multiple high-risk sexual exposure. *Nat Med*, 1996; 2 (4): 412 - 417
- Choe H, Farzan M, Sun Y, Sultan N, Rollins B, Ponath PD. The beta-receptors CCR3 and CCR5 facilitate infection by primary HIV-1 isolates. *Cell*, 1996;85(7):1135-1148
- Chen C, and Okayama H. High efficiency transformation of mammalian cells by plasmid DNA. *Mol Cell Biol*, 1987;7:2745-2749
- Morohashi H, Miyawaki T, Normura H, Kuno K, Murakami S, Matsushima K. Expression of both types of human interleukin-8 receptors on mature neutrophils, monocytes, and natural killer cells. *J Biol*, 1995;57(1):180-187
- Nomura H, Nielsen BW, Matsushima K. Molecular cloning of cDNAs encoding a LD78 receptor and putative leukocyte chemotactic peptide receptors. *Intern Immunol*, 1993;5(10):1239 - 1249
- Pour F, Melon S, Coffinur RL. Interleukin-4 and interleukin-10 to inhibit cell-mediated immunity in vivo. *Er J Immunol*, 1993;23(11):3043 - 3049
- Devergne O, Marring-Choke A, Schall TJ, Leger-Raft MB, Sadick M, Peuchmaur M. Production of the RANTES in delayed-type hypersensitivity reactions: involvement of macrophages and endothelial cells. *J Exp Med*, 1994;179(5): 1689-1694
- Tsicopoulos A, Hamid Q, Varney V, Ying S, Moqbel R, Durham SR. Preferential messenger RNA expression of Th1-type cells (IFN-gamma, IL-2+) in classical delayed type (tuberculin) hypersensitivity reactions in human skin. *J Immunol*, 1992;148(7):2058 - 2061
- Devergne O, Emilie D, Peuchmaur M, Craven MC, Agay MF, Galanaud P. Production of cytokines in sacred lymph nodes: preferential expression of interleukin-1 beta and interferon-gamma genes. *Hum Patrol*, 1992;23(3):317-323
- Heinzel FP, Sadick MD, Holaday BJ, Coffman RL, Locksley RM. Reciprocal expression of interferon gamma or interleukin 4 during the resolution or progression of evidence for expansion of distinct helper T cell subsets. *J Exp Med*, 1989;169(1):59-72
- Sadick MD, Heinzel FP, Holiday BJ, Pu RT, Dawns RS, Locksley RM. Cure of moun with anti-interleukin 4 monoclonal antibody evidence for a T cell-dependent, interferon gamma-independent mechanism. *J Exp Med*, 1990;171(1):115-127

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Relationship between tumor necrosis factor- α and liver fibrosis

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INTRODUCTION

To intrestigate the relationship between tumor necrosis factor- α and liver fibrosis in patients with chronic liver disease.

METHODS

Radioimmunoassay was made in 20 patients with mild chronic hepatitis (CMH), 20 patients with severe chronic hepatitis (CSH), 51 patients with liver cirrhosis (LC) and 32 normal persons to determine the contents of tumor necrosis factor- α (TNF- α), laminin (LN) and hyaluronate (HA) in serum. The changes in and relationship between TNF- α , LN and HA were analyzed. The TNF- α and collagen III were determined using

immunohistochemical studies in liver tissues from 32 persons including 7 normal persons, 3 patients with MCH, 5 patients with SCH and 17 with LC.

RESULTS

TNF- α , LN and HA levels in serum of CSH and LC patients were significantly higher than those in healthy controls (SCH: $1.11 \pm 0.59, 130.7 \pm 17.2, 219.1 \pm 121.3$; LC: $0.92 \pm 0.66, 156.8 \pm 31.7, 400.5 \pm 183.7, P < 0.05 - 0.01$), which increased gradually, and correlated positively with each other in all patients with liver diseases ($n = 91, \gamma = 0.3149, P < 0.01$). TNF- α contents showed a remarkably positive correlation with HA and LN levels in CMH and CSH (LN: $n = 40, \gamma = 0.3404, P < 0.05$; HA: $n = 40, \gamma = 0.3847, P < 0.05$). The total collagen content of MCH, SCH and LC increased gradually in liver biopsy specimens. The number of TNF- α positive cells increased significantly in liver tissues from patients with SCH and LC (62% ;45% ; $P < 0.01$). TNF- α positive cells were mainly located in the periportal areas.

CONCLUSION

TNF- α may be related to liver fibrosis, and might promote liver fibrosis.