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## **Nutritional therapy of chronic hepatitis by whey protein (non-heated).**

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In an open study the clinical efficacy of milk serum (whey) protein (Immunocal; cysteine content: 7.6-fold higher than that of casein) isolated from fresh milk and purified without heating was evaluated in 25 patients with chronic hepatitis B or C. Immunocal (12 g as protein) food (mousse) was given twice a day, in the morning and evening, for 12 weeks (test period). Casein (12 g as protein) food (mousse) was similarly given for two weeks prior to the start of the supplement with Immunocal food (induction period) and for four weeks after the end of the supplement with Immunocal food (follow-up period). Serum alanine aminotransferase (ALT) activity was reduced, and plasma glutathione (GSH) levels increased in six and five of eight patients with chronic hepatitis B, respectively, 12 weeks after the start of the supplement with Immunocal food. Serum lipid peroxide levels significantly decreased, and interleukin (IL)-2 levels and natural killer (NK) activity significantly increased. However, there were no significant Immunocal-related changes in 17 patients with chronic hepatitis C. These findings suggest that the long-term supplement with Immunocal alone may be effective for improving liver dysfunctions in patients with chronic hepatitis B.

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