

Effects of Active Ceramic Water on the Cholesterol and Sodium Cholate Diet-fed Rats

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Introduction

Accumulation of cholesterol may occur due to liver injury like hepatic steatosis and fibrosis as well as atherosclerosis and coronary heart disease. The aim of this study was search for protective effect of active ceramic water on experimental hepatic injury induced by high cholesterol diet(containing 1.0 % cholesterol and 0.3 % sodium cholate) in rats.

Materials and Methods

Active ceramic water is made by passing normal tap water through bioactive multipurpose magnetized ceramics. The ceramic are composed of Maek-Ban and soft sericite stone with other constituents. 32 Male Sprague-Dawley rats were divided into 2 groups that received during 12 week : normal tap water + high cholesterol diet (G1), active ceramic water + high cholesterol diet (G2). Rats were sacrificed at week 3, 6, 9 and 12 and analyzed via traditional microscopy and immunohistochemistry.

Results

Serologically, the serum AST, ALT levels in G2 were significantly lower than in G1. Microscopically, mild fibrosis was observed in G1 at week 9 and in G2 at week 12. Collagen fibers in G1 was more increased than G2. Immunohistochemically, the number of α -SMA-positive myofibroblasts in G1 were predominantly increased, as compared to G2. These results suggest that active ceramic water may protect liver steatosis and fibrosis induced by high cholesterol diet in rats.

Discussion

We suggest the active ceramic water used in our study has an inhibitory and protective capability against a high cholesterol diet-induced hepatic steatosis and fibrosis in rats. Moreover, this study demonstrates effects in active ceramic water treated liver injury animals.

References

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