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Mineral in Sea Water and Health

Mieko Kimura¹⁾

1) Takeda Research Institute of Life Science and Preventive Medicine

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Abstract:

Effects of westernizing of food habits and lack of exercise on health status based urbanizing of daily life are focused in Japan. With these changes of life habits, protein and lipid intakes are increasing, and mineral and vitamin intakes are decreasing. So that, people with elevated serum cholesterol concentrations are increasing and are at increased risk of developing atherosclerosis and coronary artery disease. On the other hand, the role of magnesium(Mg) in prevent of these disease by improving lipid metabolism is well-known. But in Japanese also with westernizing of food habits, fishes, vegetables and algae intakes are decreasing, and Mg intake is coming lower. To prevent of atherosclerosis and coronary artery disease, the natural Mg rich drink “deep sea water” were made from deep sea water by desalting treatment. The effects of oral administration of “deep sea water” on lipid metabolism of rats were studied. The “deep sea water” were made from deep sea water to remove NaCl and prepared concentration(mg/L)(1):control: distilled water(Mg<1 ppm, Ca<1 ppm),(2) Mg200(Mg200 ppm, Ca67 ppm),(3)Mg600(Mg600 ppm, Ca200 ppm),(4)Mg1000 (Mg1000 ppm, Ca333 ppm). Male Wistar rats weighing about 90 g were fed synthetic diets and for drinking water, distilled water and above three kinds “deep sea water” were provided ad libitum for 12 weeks. Eleven items of blood and twenty-four items of plasma biochemical analyses were automatic methods. The physiological behavior, food intake and water consumption in the rats did not found significant differences in each group. The pathological changes were also not found. In the plasma biochemical data, total cholesterol values in plasma of rats drank 2 kinds of high Mg concentration “deep sea water”((3) Mg600: Mg600 ppm, Ca200 ppm,(4)Mg1000: Mg1000 ppm, Ca333 ppm)resulted in significantly decrease compared to the rats drank distilled water(control group). These results suggest that magnesium rich drinking water made from “deep sea water” without salt may be a useful natural drink to improve lipid metabolism and to prevent of atherosclerosis

and coronary artery disease.

Key words: mineral, sea water, health, nutrition

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