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Effect of whey protein on angiotensin converting enzyme activity and lipid profile in *Wistar* rats

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The whey protein that contributes approximately 18% of the total milk protein mainly consists of α-lactalbumin, β-lactoglobulin, bovine serum albumin immunoglobulin and glycomacropeptides. Angiotensin II is formed from Angiotensin I by Angiotensin converting enzyme (ACE). Angiotensin II controls the blood pressure via promoting vasoconstriction and sodium water retention. The effect of prolonged intake of whey with respect to ACE activity and lipid profile in *Wistar* rats was investigated. Whey fraction was isolated by filtering the curd through a muslin cloth. The pH of the filtrate was adjusted to 4.6 in order to precipitate any casein remaining. The samples were centrifuged at 10,000 g to remove any excess fat remaining and the pH was adjusted to 7. Fourteen rats were divided into two groups of seven and 2 ml of whey extract was given to one group while the other group (control) was given 2ml of drinking water, via gastric intubation for a period of eight weeks. Blood samples were collected from the lateral tail vein after 12-14 h fasting. Serum samples were analyzed for ACE activity after modification of the method described by Cushman DW and Cheung HS (1971), total cholesterol, HDL cholesterol, & triglycerides were analyzed by a commercially available kit at the beginning and after eight weeks of the experiment period. The whey fed group had a reduction of 3.2% in the body weight, 0.7% in the ACE activity, 5.4% in the total cholesterol, 0.09% reduction in the HDL cholesterol, and 4.5% reduction in the serum triglycerides levels, respectively. The percentage difference in serum total cholesterol showed a significantly lower value ($P < 0.05$) when compared with the control. However, the other parameters assessed did not show any significant difference when compared with the control. This suggests that whey can reduce serum total cholesterol in rats. The cholesterol lowering activity of whey may be due to the formation of short chain fatty acids by the lactic acid fermenting bacteria present in curd.

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