A – 07: The effect of oral vitamin C therapy on serum lipid profile

Shanthi Mendis[1] , P R D Gunawardane[1], R Sivakanesan[2]
([1]Dept of Medicine, [2]Dept of Biochemistry, Faculty of Medicine, University of Peradeniya)

Vitamin C has been shown to promote conversion of cholesterol to 7-hydroxy cholesterol which is the first reaction in the metabolism of cholesterol to bile acid. We investigated the effect of oral vitamin C therapy on the serum lipid profile in patients with ischemic heart disease.

31 (11 males) patients 31-57 years, with elevated serum cholesterol levels were recruited for the study. Vitamin C was given at a dose of 1g daily for 6 weeks. Fasting serum lipid profile and plasma vitamin C levels were measured at baseline and after vitamin C therapy. Vitamin C levels were measured again after a further 6 weeks. During these 12 weeks no change was made in their regular medications or diet.

The mean cholesterol (mmol/1) and low density lipoprotein (mmol/1) (LDL) at baseline was 6.3 (SD 0.57) and 4.42 (SD 0.55) and after 6 weeks of vitamin C therapy 5.4 (SD 0.6) and 3.7 (SD 0.69) respectively. The reduction was statistically significant ($p<0.001$). When vitamin C was withdrawn for 6 weeks, a significant increase ($p<0.001$) in serum cholesterol and LDL were seen: 6.0, (SD 0.8) and 4.16 (SD 0.92) respectively.

There were no significant differences in serum triglyceride and high density lipoprotein levels before and after vitamin C therapy. The plasma vitamin C level after oral therapy was significantly higher compared to baseline levels ($p<0.001$).

We conclude that oral vitamin C therapy has a cholesterol lowering effect. This may be due to enhanced conversion of cholesterol to bile acids.