

Jaja S.I., Kehinde M.O., Olowoyeye O.A., Shoneye K.O., Tubi O.O. and Adekunle O.O (2013).

Vitamin C increases catalase but decreases liver enzymes and lipid peroxidation in sickle cell anemia subjects in the steady state. Nig. Quart. J. Hosp. Med. 23(3): 232-236.

ABSTRACT

Background: Vitamin C may be of benefit to sickle cell disease sufferers. In the steady state, sickle cell disease sufferers may have elevated liver enzymes and decreased blood enzymes activities. It is not clear what effect vitamin C will have on these enzymes activities.

Objective: This study determined and compared the effect of low-dose, chronic, oral vitamin C supplementation on the activities of some liver enzymes, an antioxidant enzyme and lipid peroxidation in non sickle cell anemia (NSCA) and sickle cell anemia (SCA) subjects in the steady state.

Methods: Aspartate aminotransferase (AST), alanine aminotransferase (ALT), alkaline phosphatase (ALP), catalase (CAT) and malondialdehyde (MDA) levels were measured and compared in 20 NSCA and 15 SCA subjects before and after oral vitamin C supplementation (300 mg/day for 6 weeks).

Results: All the measured variables were significantly higher in SCA subjects than in the NSCA subjects ($p < 0.001$ in each case). Vitamin C decreased all the liver enzymes ($p < 0.01$ in each case) in SCA subjects but only ALP ($p < 0.05$) in NSCA subjects. It also decreased MDA levels in the two groups of subjects ($p < 0.001$ in each group). However, it increased CAT activity in the two groups ($p < 0.05$ in each group). Supplementation caused greater percent changes (% ?) in AST, ALT and MDA ($p < 0.001$ in each case) in SCA than in NSCA subjects.

Conclusion: These findings provide further evidence that vitamin C supplementation is of benefit to SCA sufferers.