

Antioxidant vitamins, oxidant injuries and diseases

ABSTRACT

Over the past few decades antioxidant vitamins have been shown to aid in disease prophylaxis as well as treatment. Deficiencies of these vitamins in diets have resulted in associated deficiency syndromes in both humans and animals. Since a handful of disease conditions is associated with imbalances of antioxidant enzymes such as catalase, superoxide dismutase, glutathione as well as increases in reactive oxygen species (ROS), nitrogen oxide species (NOS) and lipid per-oxidation markers such as malondialdehyde, supplementation with antioxidant vitamins has resulted in amelioration of oxidative damage and ultimately disease recession. Vitamins A, C and E together with compounds such as carotenoids have been extensively studied for their roles in disease modulation or exacerbation. However, while Vitamins C and E have been shown to have immense potentials in the alleviation of several conditions, Vitamin A and especially carotenoids had shown little or no use in conditions such as cardiovascular disease and cancer prevention. This review highlights the documented roles of these vitamins in disease prevention over the past few decades and the potentials that need to be explored further.

Keyword: Antioxidant vitamins; Disease; Oxidative stress; Antioxidant enzymes