



Significant Role of Antioxidants in Metabolic Syndrome

Elia Hine*

Department of Emergency Medicine, Adnan Menderes University, Aydın, Turkey

ARTICLE HISTORY

Received: 02-Sep-2022, Manuscript No. EJMOAMS- 22-76008;
Editor assigned: 06-Sep-2022, PreQC No. EJMOAMS- 22-76008 (PQ);
Reviewed: 22-Sep-2022, QC No. EJMOAMS- 22-76008;
Revised: 27-Sep-2022, Manuscript No. EJMOAMS- 22-76008 (R);
Published: 04-Oct-2022

Description

Metabolic Syndrome (MS) is a collection of risk factors that increase the risk of heart disease and other health problems, such as obesity. Clustering of metabolic disorders is closely related to oxidative stress and inflammation, as well as the progression of atherosclerosis. Antioxidants are reducing agents that inhibit the oxidation of other molecules and can be used not only for the prevention, but also for the treatment of complications of MS and atherosclerosis. They can be used in the normal diet, as they are contained in many foods or in food supplements. We focus on antioxidants with some evidence of action for this condition, such as flavonoids, arginine, vitamin C, vitamin E, carotenoids, resveratrol, and selenium. In general, antioxidants (especially those found in foods) can be used by people with MS because of their direct effects on oxidative stress. In addition, they should be encouraged as part of lifestyle changes, as this is part of the therapy for all metabolic disorders.

Metabolic syndrome is conceptualized as a set of physiological or anthropometric abnormalities. These are typically overweight, hyperglycaemia, elevated blood pressure, low HDL cholesterol, and hypertriglyceridemia. In addition, various other uric acid abnormalities, inflammation, haemostasis, and fibrinolysis are often considered part of this syndrome.

Several studies have shown that consumption of dietary flavonoids is associated with a reduced risk of metabolic syndrome. Many types of flavonoids are commonly found in fruits, vegetables, and beverages at varying levels. Many studies have shown antioxidant effects of flavonoids, and such effects likely contribute to the health benefits of flavonoids.

Vitamin E

Vitamin E supplementation may have beneficial effects on patients with metabolic syndrome characterized by obesity, hyperlipidaemia, chronic low-grade inflam-

mation, and others. Vitamin E has been found to have antioxidant, anti-inflammatory, anti-obesity, anti-hyperglycaemic, anti-hypertensive and anti-hypercholesterolemia properties. Pathways regulated by vitamin E are critical in the development of metabolic syndrome and its components. Therefore, we postulate that vitamin E may have some health benefits in patients with metabolic syndrome.

Carotenoids

Increased intake of carotenoid antioxidants, especially lycopene, can reduce the risk of developing metabolic syndrome by approximately 50%. Data from a population-based study showed that 374 middle-aged and elderly men with the highest average intake of all carotenoids had a 58% lower incidence of metabolic syndrome, while the highest intake of lycopene was associated with a 45% lower incidence compared to men with the lowest average consumption. A potentially protective effect was also observed for beta-carotene intake.

Vitamin C

Patients with metabolic syndrome require more vitamin C to break the cycle of antioxidant depletion. Increased intake of vitamin C is critical for patients with metabolic syndrome who are trying to stop a potentially deadly cycle of antioxidant impairment and related health problems. Vitamin C in combination with other antioxidants such as polyphenols or vitamins used in the management of metabolic syndrome.

Resveratrol

Resveratrol supplementation has shown promising effects in reducing some markers of inflammation in patients with metabolic syndrome and related disorders.

Selenium

Selenium reduces cellular inflammation and lipid peroxides; therefore, its association with Cardio Vascular Disease (CVD) and the metabolic syndrome.