

The effectiveness of antioxidant therapy and Aspirin for prevention of thrombosis in normal population by assay of Aspirin resistance and Level of free Radicals.

Free radicals are atoms or groups of atoms with an odd (unpaired) number of electrons and can be formed when oxygen interacts with certain molecules. Once formed these highly reactive radicals can start a chain reaction, like dominoes. Their chief danger comes from the damage they can do when they react with important cellular components such as DNA, or the cell membrane.

Antioxidants are molecules which can safely interact with free radicals and terminate the chain reaction before vital molecules are damaged. Although there are several enzyme systems within the body that scavenge free radicals, the principle micronutrient (vitamin) antioxidants are vitamin E, beta-carotene, and vitamin C. Additionally, selenium, a trace metal that is required for proper function of one of the body's antioxidant enzyme systems, is sometimes included in this category. The body cannot manufacture these micronutrients so they must be supplied in the diet.

Aspirin (ASA) as a platelet-inhibiting agent through inactivation of Cyclooxygenase-1 (COX-1) is mostly used for the prevention and treatment of atherothrombotic disorders. ASA inhibits the COX-1 enzyme and therefore blocks platelet thromboxane A₂ (TXA₂) synthesis. However, some of the serious vascular events in high-risk vascular patients are attributable to a failure of ASA to suppress platelet aggregation. The Aim of our study is to increase antithrombotic activity of ASA by adding antioxidants in normal population using Aspirin for prevention of thrombosis.

Fifty volunteer healthy individuals were enrolled in this study. They took aspirin for one week and then took aspirin and supplemental supplement for one week. In this study, factors such as platelet aggregation and lipid profiles, liver enzymes, renal factors, platelet and antioxidant factors were investigate in 2017, in University affiliated hospital, Tehran, Iran.

Resistance to aspirin was measured using a chronologic agregometer. This device shows the amount of light passing through the accumulated platelets. It is show platelet aggregation of more than 70% after adding collagen, they are known as resistance to aspirin.

Results: Adding of Antioxidant to Aspirin had decreased level of SOD. Cholestrol, Urea with P value of <0.001. Aspirin Resistance was also decreased by P value <0.001.

Conclusion: . The consumption of antioxidant or antioxidant rich foods such as vitamin C, E, and polyphenols might impart anti-thrombotic and cardiovascular protective effects via their inhibition of platelet hyper-activation or aggregation similar to the action of aspirin, although increasing the antioxidant property of aspirin is concern.

1) frequent consumers of foods packed with carotenoids may have a low tendency of developing stroke and other cardiovascular disorders. Bahonar A, Saadatnia M1, Khorvash F, Maracy M, Khosravi A. Nutrition Journal December 2017

2) The effectiveness of antioxidant therapy in aspirin resistance, diabetes population for prevention of thrombosis. B iomedicine&Pharmacotherapy 83(2016)277–28 s