



A commentary on Alteration of antioxidant enzymes and oxidative stress in elderly patient

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Commentary

Oxidative stress is intensified with the method of aging, and within the elderly, this is often amid a more common occurrence of primary hypertension, cardiovascular diseases (CVD) and diabetes. Oxidative stress features a potential role in diabetogenesis, development of diabetic complications like atherosclerosis and disorder .

Aging is characterized by a progressive decline within the efficiency of biochemical and physiological processes, the functional maintenance of tissue homeostasis and an increasing susceptibility to diseases. Aging may be a multifactorial process, which is genetically determined and influenced epigenetically by environment.

In recent years it's been documented that oxidative stress may play important roles in elderly health and, especially , there's in-creasing evidence that aging could be caused by the potential and harmful effects of an accumulation of oxidative damage caused by reactive species (RS, especially reactive oxygen species or ROS and reactive nitrogen species RNS). This evidence is supported by the "free radical theory of aging" proposed by Harman.

The subjects in our study were nonsmokers and non-alcoholics. The aim of our study was explained to the themes and their consent was taken. The study was approved by the institutional ethical committee.

Oxidative stress and hypertension are independent risk factors for cardiovascular events and the latter occur more frequently in old age. It has been suggested that adverse cardiovascular changes in aging may be altered by angiotensin-converting

enzyme (ACE) inhibitors.

Angiotensin II (AngII) is a principal effector of the renin-angiotensin system (RAS) and has been shown to promote aging and cellular senescence. The proposed mechanism of angiotensin II-mediated oxidative stress assumes increased $O_2^{\bullet-}$ generation by activated nicotinamide adenine dinucleotide phosphate (NADPH) and nicotinamide adenine dinucleotide (NADH) oxidases, whose role in cardiovascular disease has already been established. Overproduction of superoxide reduces nitric oxide (NO) bioavailability, as $O_2^{\bullet-}$ readily reacts with NO, to produce peroxynitrite (ONOO⁻). NO is well known for its vasodilatory properties. When the production of NO is impaired, endothelium-dependent vasodilatation is blunted, which has been observed both in aged subjects and hypertensive patients.

Summing up, this study confirms the intensification of oxidative stress in elderly patients, with associated essential arterial hypertension, DM and CVD. Moreover, this study indicates the possible participation of reactive oxygen species, not only within the physiological aging process, but also, most significantly, within the pathogenesis of adulthood diseases, including arterial hypertension, DM and CVD which can accelerate the aging process. The antioxidant defence mechanisms aren't sufficient to stop age related increase in oxidative damage and dietary intake of a spread of antioxidants could be beneficial for preserving the traditional function in elderly people.

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