

Diabetes mellitus and oxidative stress-A concise review

Asmat Ullah

Department of Pharmacy, University of Swabi, Swabi, Pakistan

Abstract

Human body is continuously exposed to different types of agents that results in the production of reactive species called as free radicals (ROS/RNS) which by the transfer of their free unpaired electron causes the oxidation of cellular machinery. In order to encounter the deleterious effects of such species, body has got endogenous antioxidant systems or it obtains exogenous antioxidants from diet that neutralizes such species and keeps the homeostasis of body. Any imbalance between the ROS and antioxidants leads to produce a condition known as "oxidative stress" that results in the development of pathological condition among which one is diabetes. Most of the studies reveal the inference of oxidative stress in diabetes pathogenesis by the alteration in enzymatic systems, lipid peroxidation, impaired Glutathione metabolism and decreased Vitamin C levels. Lipids, proteins, DNA damage, Glutathione, catalase and superoxide dismutase are various biomarkers of oxidative stress in diabetes mellitus. Oxidative stress induced complications of diabetes may include stroke, neuropathy, retinopathy and nephropathy. The basic aim of this review was to summarize the basics of oxidative stress in diabetes mellitus.

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Biography

Gedifew Nigatu Beza is the chairman of Forensic Toxicology Laboratory of Saint Paul's Hospital Millennium Medical College (Addis Ababa, Ethiopia), and a forensic toxicology lecturer in the Department of Forensic Medicine and Toxicology at the same institution. He obtained a B.Sc. in applied chemistry from Arba Minch

where he acquired his first research Liaison of the year" of the Medical Science Liaison Society USA, 2018. Internationally awarded: in 2014 with (i) IOCIM Award to Medical Excellency and (ii) CIS Excellency in Health, granted each by the International Organization for Training & Medical Research and the International Confederation of Health. Author and international speaker.