



Category: Miscellaneous

Plant Polyphenolic Antioxidants in Management of Chronic Degenerative Diseases

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Abstract

With the over growing global population, degenerative diseases are on rise, despite using modern medicine for its cure. People prefer alternative systems of medicine like natural therapy and polyherbal therapy due to adverse effects of allopathic medication. According to W.H.O. report about 70% of world population relying on natural plant-based therapy. For a suitable, sustainable and cost effective cure use of polyphenolic natural antioxidants may be an appropriate tool. Now a day's most food and pharmaceutical products contain synthetic antioxidants. But recent data indicating that, long term use of synthetic antioxidants could have carcinogenic effects on human cells. Thus, search for new natural and efficient antioxidants is need of the hour. Phenolic compounds (polyphenols) are products of secondary metabolites and constitute one of the most widely distributed groups of substance in plant kingdom with more than 10,000 phenolic structures. Polyphenols are structurally characterized by the presence of one or more aromatic benzene ring compounds with one or more functional hydroxyl groups. Polyphenols are naturally occurring and most abundant antioxidants in human diets found largely in the fruits, vegetables and beverages. Plant flavonoids are the largest and best studied class of polyphenols which include more than 4000 compounds. Numerous studies confirm that, flavonoids exert a protective action on human health and are key components of a healthy and balanced diet. Epidemiological studies and associated meta-analysis correlate and strongly suggest that, long term consumption of diets rich in plant flavonoids offer protection against development of chronic and degenerative diseases, such as cardiovascular diseases, diabetes, cancer, osteoporosis and neurodegenerative diseases. One of the main reasons for the age related diseases is linked with reduction in cellular oxidative stress. The involvement of reactive oxygen species (ROS) in the etiology of these degenerative conditions suggested that, phytochemicals possesses potential antioxidative activity leading to various pathways on prevention of diseases. The present review focuses on resources of plant polyphenols and the present understanding and views on structural and functional relationship of flavonoids and their beneficial role in human health and disease with special emphasis on degenerative diseases.

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