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ABSTRACT

Biophenols and their Role in Health Care System- A New Perspective

Man has developed over a period, the habit of identifying food for survival unaware of their scientific potential and through experience has acquired knowledge of better food for preservation of health. Plant and plant products containing several bioactive polyphenols and the current research attributes these biophenols having beneficial effects against diseases. Oxidative stress is implicated in many disease progressions and there is an evidence based knowledge existing on role of free radicals in the pathogenesis of diseases. Biofriendly polyphenols therapeutic potential have not been established therapeutically and much more remains to be learned to explore better utilization of these naturally occurring compounds in the health care system.

The present study has been undertaken with an objective to investigate medicinal plants containing bioactive polyphenols and selected pure compounds against ischemic heart disease, Alzheimer's disease and drugs

induced adverse drug effects. The plant extracts (alcoholic and aqueous) of *Tinospora cordifolia*, *Terminalia chebula*, *Hydrocotyle asiatica*, *Leucas aspera* and the pure compounds isolated from milk thistle. **Silymarin** showed good anti-oxidant activity and cardioprotective activity against ischemia-reperfusion induced myocardial infarction in animal models. The percentage cardio protection offered by the extracts (alcoholic and aqueous) and Silymarin lies in the range of 91.85% to 41.56%. The *Piper betel* extract (alcoholic and aqueous) showed percentage increase in the memory retention time on 10th day lies in the range of 129.09% to 49.13% against scopolamine induced amnesia. The percentage increase in memory time on 10th day against Maximum Electric Shock induced amnesia model ranges from 69.86% to 44.81%. The percentage decrease in Acetylcholinesterase levels (Cortex, Cerebellum, Midbrain and Medulla oblongata) by alcoholic and aqueous extracts ranges from 24.62% to 3.64% in normal rats. The percentage

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protection against scopolamine induced amnesia model ranges from 44.83% to 8.44%.The polyphenols **Quercetin, Silymarin and Naringenin** produced protection on hematological adverse effects induced by Phenytoin. The results will be discussed.