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Anti-atherosclerotic and Anti-hyperlipidemic potential of Gossypetin: Medicinal importance and therapeutic potential in the medicine

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Objectives: Flavonoidal compounds have been documented in the medicinal due to their numerous health beneficial properties and therapeutic values. Anti-atherosclerotic and Anti-hyperlipidemic medicine could play important role in the treatment of stroke which is associated with high-fat diets, obesity, a sedentary lifestyle and diabetes. Stroke causes 5.7 million deaths every year worldwide accounting for 9% of all deaths. Flavonoids are important class of secondary metabolite and valuable groups of polyphenolic compounds that are well known for their anti-atherosclerotic and anti-hyperlipidemic potential. Gossypetin is an important class of flavonoidal chemical found in Hibiscus species.

Methods: To investigate anti-atherosclerotic and anti-hyperlipidemic potential of gossypetin, important pharmacological data have been collected from different literature sources in the present investigation and analyzed for their anti-atherosclerotic and anti-hyperlipidemic activity. Further to make better co-relation between claimed pharmacological activities with their molecular mechanism, numerous scientific data of molecular study have been also analyzed through data analysis of various scientific research. Further in order to understand the beneficial health effects of gossypetin in atherosclerosis and hyperlipidemia, present work also summarized the detailed pharmacological study of gossypetin towards tissue plasminogen activator through scientific database analysis.

Results: From the analysis of the collected data in the present investigation, gossypetin revealed the anti-atherosclerotic, anti-hyperlipidemic and antioxidant potential. Various scientific studies revealed that gossypetin is having potential to reduce reactive oxygen species concentration, inhibits LDL cholesterol oxidation and intracellular lipid accumulation which are the main factors for the development of atherosclerosis in the Human being. Molecular study revealed the importance of tissue plasminogen activator in the atherosclerotic plaque and hyperlipidemic condition.

Conclusions: Present study aim is to investigate the medicinal importance and therapeutic benefit of gossypetin for the treatment of the atherosclerotic plaque and hyperlipidemia and to identify better molecule for the treatment of these disorders.