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Pharmacological Activities of *Colchicum Autumnale*

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ABSTRACT

Colchicum autumnale, also known as autumn saffron, has been widely researched for its pharmacological effects. Its main active ingredient, colchicine, is known for its anti-inflammatory, analgesic, and antigout properties, particularly in the treatment of acute gout attacks. *Colchicum autumnale* also has cytotoxic properties, making it a promising candidate for cancer treatment. It has also been shown to have neuroprotective, antibacterial, and anti-arthritic effects. Despite its medicinal potential, colchicine is poisonous in high doses, so dosing needs to be done carefully. The plant's various pharmacological properties demonstrate its medicinal value, but more research is needed to ensure its safe use.

Keywords: Colchicine; Anti-Inflammatory; Anti-Gout; Cytotoxicity; Neuroprotective

Introduction

Familial Mediterranean fever is chronic inflammatory recessively inherited diseases described by repetitive scenes of febrile sterile polyserositis (Rigante [1]). It is related with a transformation in the MEFV quality, encoding pyrin, an invulnerable administrative protein. It has been shown redundantly that in constant fiery illnesses, the provocative weight is related with an expanded pace of atherosclerosis. Colchicine is an important constituent of obtained from *Colchicum autumnale* by preventing the polymerization of cytoskeletal tubules prevents microtubules from disruption [Vandecandelaere et al.,1997]. Likewise, colchicine diminishes the degranulation of neutrophils, upgrades the union of stable prostaglandins, and modifies the capacity and articulation of certain adhesive molecules (E-selectin) and subsequently the cooperation of endothelial cells with neutrophils [Molad., 2000,Chetrit, et al.,1998]. As colchicine prevents the development of amyloidosis and decreases the attacks rate, it is considered as mainstay for the treatment of Familial Mediterranean fever and its action depends on the A and C ring that binds with tubulin [Andreu, et al.,1982]. According to the clinical results in 60% of patients taking colchicine for several years complete cessation of attacks has been observed and in 30% of patient's substantial decrease of attacks was observed (Papageorgiou, et al. [2]). From the results of various experimental studies, it was demonstrated that that colchicine plays significant role in the prevention of cardiovascular diseases (Zhang, et al. [3]).

It has been shown by animal model study of atherosclerosis that colchicine prevents the formation of atheroma plaque. In view of such tests and the arising comprehension of the significance of inflammation in atherosclerosis, a preliminary with colchicine in angina pectoris, myocardial dead tissue, and anticipation of restenosis after angioplasty and sidestep uniting was proposed effectively in 1992. The exact mechanism of colchicine impact is obscure yet could be identified with disturbance of atheroma working as found in animal study models, impact on macrophages, neutrophils, and endotheli-

al cells, which are all involved in the pathogenesis of cardiovascular infection, or by implication by influencing other danger factors like reactive C protein. The part of colchicine treatment across cardiovascular problems has been featured in proof-based rules and position proclamations, and especially in the European Society of Cardiology rules on the administration of pericardial disease (2004), where colchicine alone (1 mg/day) or in combcountry with ibuprofen was prescribed to tighten prednisone in intense pericarditis and to forestall repeatsMaster Opin. Medication Metab. Toxicol. (2015) 11(11) 5A. Y. Gasparyan et al. of pericarditis [Maisch et al., 2004]. beings promising anti-inflammatory agent, colchicine play secondary cardiovascular prevention in neutrophilic rheumatic or non-rheumatic disorders which affect the pericardium, myocardium and coronary vessels (Misra, et al. [4]).

Colchicum autumnale play significant role as hepatoprotective plant due to the presence of colchicine alkaloid in it (Hailu, et al. [5]). It is demonstrated that colchicine prevents the polymerization of microtubules which is a process required for the secretion of collagen. By preventing the secretion and deposition of collagen, colchicine plays remarkable antifibrotic activity. From animal model studies it is stated that colchicine inhibits the formation and secretion of collagen effectively. From several clinical studies on alcoholic cirrhosis and biliary cirrhosis it was observed that colchicine possesses antifibrotic potential (Rambaldi, et al. [6]). *Colchicum autumnale* used for the treatment of various respiratory disorders such as cough, bronchial asthma, pulmonary fibrosis and inflammatory problems (Gulati, et al. [7]). Colchicine is an important chemical constituent of *Colchicum autumnale* is considered effective medication for the treatment of these diseases (Kelly et al., 1995; Schwarz et al., 1990) (McLoughlin, et al. [8]) [9-12].

Conclusion

Colchicum autumnale possesses potent pharmacological properties, including anti-inflammatory, antigout, cytotoxic, and neuroprotective actions. While the main component, colchicine, has therapeutic potential, careful dosing is required due to its toxicity. Further research is required to maximize its therapeutic potential and ensure safe clinical use in a variety of medical disorders.

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