STUDENTS' CORNER
LETTER TO THE EDITOR

Decoding colchicine: Applications and safety insights

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The Editor, Colchicine is an anti-inflammatory drug predominantly used for treating acute and chronic gouty arthritis, due to its ability to inhibit microtubule assembly and suppress inflammasome activation thereby reducing inflammation.[1] However, its efficacy is limited by having multiple drug-drug interactions, particularly with drugs such as CYP3A4 and P-glycoprotein inhibitors, as well as natural grapefruit which augments colchicine concentration. Studies have shown that co-administration with statins may potentially increase the risk of myopathy in some patients.[2] Common side effects such as diarrhoea, nausea, and vomiting are attributed to its anti-mitotic action on the epithelial cells of the gastrointestinal tract. An overdose has also led to the occurrence of some fatalities.[3]

A pivotal 2024 clinical trial study published in 'Diabetes Care' demonstrated that low-dose colchicine had a significant impact on reducing the occurrence of cardiovascular events in patients with type 2 diabetes (T2D). In this double-blind study, 959 patients with T2D were enrolled, with 462 receiving colchicine and 497 receiving a placebo. In the colchicine group 8.7% patients reached a primary endpoint as compared to 13.1% of those in the placebo group. However, one or more adverse effects such as gastrointestinal issues occurred in 15.3% of patients that were administered colchicine compared to 16.1% of those in the placebo group. 2.7% of the patients of the colchicine group experienced nausea, whereas only 0.8% of patients from the placebo group experienced nausea.[4]

This clinical trial is further supported by a study published by Akl et al in 2024, a meta-analysis of 8 clinical trials which had over 12000 patients in it. The study revealed that colchicine when compared to placebo or standard care had significantly reduced the risk of cardiovascular death, myocardial infarction (MI), and stroke possibly by reducing inflammation and, therefore plaque erosion or rupture. However, concerns were raised regarding an increased risk of mortality due to non-cardiovascular causes.[5]

Although the probability of side effects such as sensory, hepatic, infectious, or haematological are small compared to the more common gastrointestinal adverse effects.[6] Physicians must aptly apprise patients about all the potential side effects and perform a judicious assessment of the risk-benefit profile before use.

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