Efficacy and safety of colchicine after myocardial infarction: a systematic review and meta- analysis

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Background: Inflammation plays a key role in atherosclerotic plaque destabilization and adverse cardiac remodeling. Recent evidence has shown a promising role of colchicine in patients with coronary artery disease.

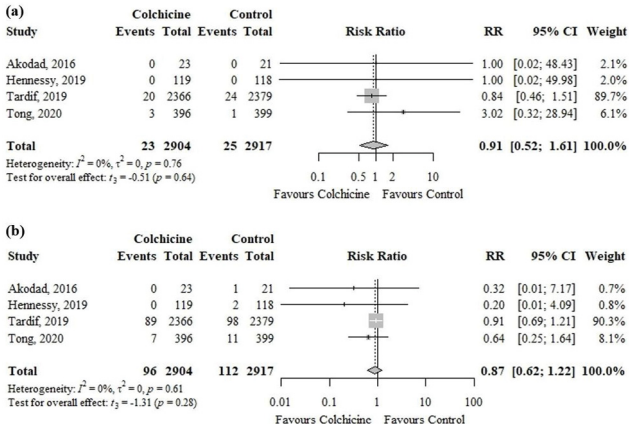
Purpose: We evaluated the efficacy and safety of colchicine in post-acute myocardial infarction (MI) patients.

Methods: We searched five electronic databases from inception to January 18, 2021, for randomized controlled trials (RCTs) evaluating colchicine in post-acute MI patients. Primary outcomes were cardiovascular mortality and recurrent MI. Secondary outcomes were all-cause mortality, stroke, urgent coronary revascularization, levels of follow-up high-sensitivity C-reactive protein (hs-CRP), and drug-related adverse events. All meta-analyses used inverse-variance random-effects models.

Results: Six RCTs (n=6005) patients were included. Colchicine did not significantly reduce cardiovascular mortality (risk ratio [RR], 0.91; 95% confidence interval [95% CI], 0.52–1.61; p=0.64), recurrent MI (RR, 0.87; 95% CI, 0.62–1.22; p=0.28), all-cause mortality (RR, 1.06; 95% CI, 0.61–1.85; p=0.78), stroke (RR, 0.28; 95% CI, 0.07–1.09; p=0.05), urgent coronary revascularization (RR, 0.46; 95% CI, 0.02–8.89; p=0.19), or decreased levels of follow-up hs-CRP (MD, –1.95 mg/L; 95% CI, –12.88 to 8.98; p=0.61) compared to the control group. There was no increase of any adverse event (RR, 0.97; 95% CI, 0.89–1.07; p=0.34) or gastrointestinal adverse events (RR, 2.49; 95% CI, 0.48–12.99; p=0.20). Subgroup analyses by colchicine dose (0.5 versus 1 mg/day), time of follow-up (<1 versus ≥1 year), and treatment duration (≤30 versus >30 days) showed no changes in the overall findings.

Conclusion: In post-acute MI patients, colchicine does not reduce cardiovascular or all-cause mortality, recurrent MI, or other cardiovascular outcomes. Also, colchicine did not increase drug-related adverse events.

Effect of colchicine versus control on (a) cardiovascular mortality and (b) recurrent myocardial infarction



Effects of colchicine on (a) all-cause mortality, (b) stroke, (c) urgent coronary revascularization, (d) any adverse events, (e) gastrointestinal adverse events, and (f) follow-up levels of (mg/L)