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Colchicine for stroke prevention in patients with symptomatic coronary artery disease: A systematic review and pairwise meta-analysis of efficacy and safety

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It has been long established that inflammation plays a role in the pathophysiology of cerebrovascular diseases. Colchicine is a low-cost anti-inflammatory drug used commonly in clinical practice for gout and pericarditis. Recent clinical trials have demonstrated that colchicine has a beneficial effect in reducing composite cardiovascular outcomes. These composite outcomes include stroke incidence in the study populations. We conducted a systematic review and meta-analysis to study the effect of colchicine in preventing stroke in patients with coronary artery disease. We systematically reviewed 8 RCTs, and meta-analysed 7 RCTs, including a total of 12270 patients (colchicine group: 6152, control group: 6118; mean age in colchicine group=60.9±9.6, control group=63.3±9.6) with a following up ranging from 31 days to 36 months. There is a statistically significant reduction in risk of incident stroke in patients with a history of symptomatic CAD in the colchicine compared to the control group (placebo or no treatment) (risk ratio 0.5 (95% CI 0.31-0.81); p = 0.005) without heterogeneity across the analysis (I2 = 0%; P for Cochran Q = 0.48). Colchicine treatment in addition to standard therapy in patients diagnosed with ACS (≤30 days) was statistically significant in reducing stroke incidence compared to control groups (risk ratio 0.37, (95% CI 0.17-0.80); I2 = 0%; p = 0.01). There was no statistical significance in risk of stroke in patients with CCS in the colchicine compared to the control group (risk ratio 0.61, (95% CI 0.45 0.33-1.12); I2 = 0%; p = 0.11). Colchicine prevents stroke in patients with coronary artery disease, with a larger effect in acute coronary syndrome compared to chronic coronary syndrome. 227 and 193 patients with CAD and ACS respectively, need to be treated with colchicine to prevent 1 event of stroke over a follow-up timeline of 24.2 months. Timing of treatment, history of previous stroke, PCI incidence, dosing and follow up duration are factors worth evaluating in future studies to determine suitability of colchicine for clinical use.