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**Circulation: Cardiovascular  
Interventions**

**Effects of Acute Colchicine  
Administration Prior to Percutaneous  
Coronary Intervention:  
COLCHICINE-PCI Randomized Trial**

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# Abstract

## Background:

Vascular injury and inflammation during percutaneous coronary intervention (PCI) are associated with increased risk of post-PCI adverse outcomes. Colchicine decreases neutrophil recruitment to sites of vascular injury. The anti-inflammatory effects of acute colchicine administration before PCI on subsequent myocardial injury are unknown.

## Methods:

In a prospective, single-site trial, subjects referred for possible PCI (n=714) were randomized to acute preprocedural oral administration of colchicine 1.8 mg or placebo.

## Results:

Among the 400 subjects who underwent PCI, the primary outcome of PCI-related myocardial injury did not differ between colchicine (n=206) and placebo (n=194) groups (57.3% versus 64.2%, P=0.19). The composite outcome of death, nonfatal myocardial infarction, and target vessel revascularization at 30 days (11.7% versus 12.9%, P=0.82), and the outcome of PCI-related myocardial infarction defined by the Society for Cardiovascular Angiography and Interventions (2.9%

versus 4.7%,  $P=0.49$ ) did not differ between colchicine and placebo groups. Among 280 PCI subjects in a nested inflammatory biomarker substudy, the primary biomarker end point, change in interleukin-6 concentrations did not differ between groups 1-hour post-PCI but increased less 24 hours post-PCI in the colchicine ( $n=141$ ) versus placebo group ( $n=139$ ; 76% [-6 to 898] versus 338% [27 to 1264],  $P=0.02$ ). High-sensitivity C-reactive protein concentration also increased less after 24 hours in the colchicine versus placebo groups (11% [-14 to 80] versus 66% [1 to 172],  $P=0.001$ ).

## Conclusions:

Acute preprocedural administration of colchicine attenuated the increase in interleukin-6 and high-sensitivity C-reactive protein concentrations after PCI when compared with placebo but did not lower the risk of PCI-related myocardial injury.

Registration: URL: <https://www.clinicaltrials.gov>; Unique Identifiers: NCT02594111, NCT01709981.

## Keywords:

**Biomarker; colchicine; inflammation; myocardial infarction; percutaneous coronary intervention.**

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***Randomized Controlled Trial***

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