SURGERY

COPPS trial heralds new indication for colchicine

The findings of the COPPS trial, which have been published in the *European Heart Journal* by Massimo Imazio and colleagues, indicate that colchicine safely prevents the postpericardiotomy syndrome (PPS) in patients who have undergone cardiac surgery. To the investigators' knowledge, this study is the first multicenter prospective, randomized placebo-controlled trial to test the efficacy of colchicine in this patient population.

Colchicine is a natural product with anti-inflammatory properties, which is derived from plants in the genus *Colchicum*. The mechanism of action of colchicine is thought to involve inhibition of leukocyte function, through disruption of microtubule assembly during cell division. This drug has, historically, been used for the treatment of gout, Mediterranean fever, and pericarditis.

“...pharmacological prevention of PPS and its associated complications can be safe and effective...”

“Colchicine has also been proposed for the primary prevention of PPS in a preliminary report from Israel,” says Dr Imazio, “where a statistically nonsignificant trend towards a reduction in the incidence of the syndrome was recorded in patients [receiving] colchicine.” PPS is a common postoperative complication that can lead to life-threatening events, such as

cardiac tamponade, and for which no definitive treatment exists. Finding a simple, inexpensive therapy for this syndrome is an important goal. The COPPS researchers, therefore, sought to further investigate the effect of colchicine in the setting of PPS in a large, multicenter cohort of patients.

A total of 360 consecutive patients who were scheduled to undergo cardiac surgery at one of six hospitals in Italy were randomly assigned to receive colchicine or placebo, commencing on the third postoperative day. Patients were administered two 1.0 mg doses on the first day of colchicine therapy, after which they received 0.5 mg colchicine twice daily for 1 month. PPS diagnosis required the presence of two of the following: fever lasting beyond the first postoperative week (without signs of infection), pleuritic chest pain, friction rub, pleural effusion, and new or worsening pericardial effusion. The majority (85%) of PPS diagnoses were made during the first 4 weeks after surgery. At 12 months, the incidence of PPS was significantly reduced among patients in the colchicine group when compared with those receiving placebo (8.9% versus 21.1%; $P=0.002$). In addition, the composite secondary end point (cardiac tamponade, disease-related hospitalization, constrictive pericarditis, and recurrent pericarditis) occurred less often among patients who took colchicine than in the placebo group. All adverse drug-related effects were gastrointestinal in nature, and no statistically significant differences were demonstrated in the

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rates of these effects between the two groups. The percentage of patients who discontinued therapy was also statistically comparable between the two groups.

The findings from the COPPS trial are encouraging because the study shows, for the first time, that pharmacological prevention of PPS and its associated complications can be safe and effective. “On this basis, we could expand research from prevention to treatment,” says Dr Imazio, “and start to consider [giving patients] colchicine after cardiac surgery in clinical practice.”

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