

# **Colchicine Reduces Postoperative Atrial Fibrillation**

**Imazio M, Brucato A, Ferrazzi P, et al. for the COPPS Investigators  
(Discussant: Nancy A. Nussmeier, M.D.)**

## **Colchicine**

- **Anti-inflammatory drug used for centuries for the treatment of gout**
- **Only recently reviewed and approved by the FDA – in 2009**
- **Also beneficial in the treatment and secondary prevention of pericarditis**
- **Mechanism not entirely understood**
  - **Related to capacity to disrupt microtubules by binding  $\beta$ -tubulin**
  - **Inhibition of leukocyte function by this mechanism (anti-inflammation)**

## **Postoperative Atrial Fibrillation (POAF)**

- **Most common complication after cardiac surgery (27-40% incidence)**
- **Causes - inflammation, excess catecholamines, hemodynamic factors**
- **Increased incidence of CHF, renal insufficiency, stroke, increased duration of hospital stay and readmission rate**

# Colchicine Reduces Postoperative Atrial Fibrillation

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A substudy of the “Colchicine for the Prevention of the Postpericardiotomy Syndrome (COPPS) Trial”

**Purpose:** To test the hypothesis that colchicine may prevent postop atrial fibrillation (POAF)

**Design:** Colchicine (1.0 mg bid x 1 day, then 0.5 mg bid) or placebo administered for 1 month, commencing on POD #3

360 patients enrolled in 6 hospitals in Italy

336 patients analyzed (after exclusions for chronic preop AFib and for development of AFib prior to randomization on POD #3)

**1° Endpoint:** POAF - 22.0% in placebo patients vs. 12.0% in colchicine patients (p=0.021)

**2° Endpoints:** Hospital Stay ~ 1 day shorter in colchicine patients (p=0.04)  
No difference in death or stroke

**Side Effects:** Nonsignificant trend toward more GI distress (diarrhea) in colchicine patients (p=0.082)

## **Colchicine Reduces Postoperative Atrial Fibrillation**

### **Implications**

**Colchicine, administered prophylactically as an anti-inflammatory therapy, appears to halve the incidence of POAF after cardiac surgery**

**Potentially a cheap, effective, and relatively safe option for decreasing the incidence of PPS and POAF**

## **Colchicine Reduces Postoperative Atrial Fibrillation**

### **Strengths**

**First trial to show evidence of colchicine efficacy for specific prevention of POAF**

**Well-designed - randomized, double-blind, prospective placebo-controlled, multicenter clinical trial**

**Practical, useful implications – relatively safe, inexpensive, attractive option**

### **Weaknesses / Limitations**

**Relatively small sample size**

**Relatively healthy adult Caucasian population**

**Colchicine started on POD #3**

**GI intolerance may limit use**

## **Colchicine Reduces Postoperative Atrial Fibrillation**

### **Future Research**

**Larger multicenter trials to confirm efficacy (including other ethnic and age groups)**

**Earlier administration of colchicine (starting preop) for prophylaxis against POAF?**

**Colchicine as an adjunct for treatment and prevention of recurrence of POAF after it develops?**