1-Minute Pearls/Pitfalls for the Clinician

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Kwame Dapaah-Afriyie, MD, MBA[1,2]

[1] Division of Hospital Medicine, Department of Medicine, Miriam Hospital,
[2] Department of Medicine, Brown University

Journal of Brown Hospital Medicine
Vol. 3, Issue 3, 2024

Article Information

Keywords: colchicine, coronary artery disease, sbp prophylaxis, cirrhosis, ascites

https://doi.org/10.56305/001c.118676

Submitted: May 16, 2024 EST

Accepted: June 14, 2024 EST

Abstract

This article describes a few pearls/pitfalls pertinent to the use of colchicine in patients with coronary artery disease and the use of long-term prophylactic antibiotics in patients with cirrhosis.

QUESTION 1: SHOULD PHYSICIANS ROUTINELY PRESCRIBE COLCHICINE FOR PATIENTS WITH CORONARY ARTERY DISEASE?

A 68-year-old male with history of ischemic cardiomyopathy, diabetes mellitus and gout who is on Carvedilol, Rosuvastatin, Lisinopril, Empagliflozin, Lasix, Allopurinol and Aspirin is requesting the addition of Colchicine to his medications. He has had 3 episodes of myocardial infraction, the most recent being about 2-3 weeks ago. His request is based on what he had read about its positive effects for people with atherosclerotic heart disease. What will be your next steps?

The recent data on the use of Colchicine 0.5mg daily for its anti-inflammatory effects will lead to a number of requests like this. Inhibition of microtubule polymerization by binding to the tubulin molecule is colchicine's primary mechanism of action. Its anti-inflammatory effects, which form the basis of its effect on cardiovascular outcomes, are due to the following:

a. The inhibition of the NLRP3 inflammasome function.

b. Suppression of the pro-inflammatory M1 macrophages and upregulation of anti-inflammatory M2 macrophages.

c. Inhibition of leukocyte-platelet aggregation is believed to be the possible mechanism underlying cardiovascular benefits.

The Colchicine Cardiovascular Outcomes Trial (COLCOT) revealed that low-dose colchicine 0.5 mg/day significantly reduces the risk of ischemic cardiovascular events in managing patients with a prior myocardial infarction. Additionally, it was noted that initiating colchicine earlier during the hospitalization of eligible patients may provide better outcomes. The COLCOT trial findings have been complemented by the results of the more recent Low Dose Colchicine for Secondary Prevention of Cardiovascular Disease 2 (LoDoCo2) study.

This patient will benefit from the addition of colchicine, but its drug-drug interactions must be assessed and addressed appropriately. Colchicine should be avoided or at least its dose reduced in patients who are on medications that inhibit the activity of Cytochrome 3A4. Commonly used medications in this category include macrolides, antifungals—azoles, non-dihydropyridine calcium channel blockers, carvedilol, and Amiodarone.

In this patient, as in all patients who are being considered to be started on colchicine, there is the need to avoid drug interactions, which may lead to colchicine toxicity, which is characterized mainly by renal failure, rhabdomyolysis, and bone marrow suppression. In this patient, switching his carvedilol to long-acting metoprolol or Bisoprolol for the required beta-blocker mortality benefit for his ischemic cardiomyopathy will be prudent before adding colchicine to his current medications. As patients increasingly become aware of management options for their medical conditions through artificial intelligence modalities, there is a need for in-depth discussions about the risks and benefits of the options offered.[1-3]

QUESTION 2: WHEN SHOULD PHYSICIANS PRESCRIBE LONG-TERM PROPHYLACTIC ANTIBIOTICS IN CIRRHOTIC PATIENTS?

A 45-year-old female with history of cirrhosis due to long-standing non-alcoholic liver disease presents with progressively worsening abdominal pain. Ultrasound of her abdomen has revealed moderate ascites for which a diagnostic paracentesis was done. Ascitic fluid demonstrated neutrophils 150 cells/mm3 and total protein 1.2g/dL. Her serum creatinine was 3mg/dl (baseline of 2 mg/dl) and serum sodium level was 127mEq/L. Upper endoscopy done

by Gastroenterology revealed no red wale signs or large esophageal varies. She is concerned about risk for repeated hospitalizations which may interfere with her demanding professional career. What will be your next steps?

A: In addition to close follow-up with gastroenterology and scheduled ultrasound studies for cancer screening, this patient needs to be considered for primary spontaneous bacterial peritonitis (SBP) prophylaxis based on the results of her ascitic fluid analysis.

- Patients who have recovered from an episode of SBP should receive long-term prophylaxis with fluoroquinolones (ciprofloxacin or norfloxacin) or Trimethoprim-sulfamethoxazole.
- Antibiotic prophylaxis for SBP should be instituted in patients with cirrhosis and upper gastrointestinal hemorrhage. IV ceftriaxone 1 g/24 hours is the antibiotic of choice and should be used for a maximum of 7 days.
- In patients with cirrhosis and low protein (<1.5 g/dL) ascites, primary SBP prophylaxis can be considered in selected patients with renal dysfunction (serum creatinine level >1.2 mg/dL, blood urea nitrogen level >25 mg/dL, or serum sodium level <130 mEq/L) or liver failure (Child-Turcotte-Pugh score >9 and bilirubin >3 mg/dL).[4,5]

Primary SBP should be discussed and offered to this patient.

Disclosures/Conflicts of Interest

The author has no conflicts of interest to disclose

Corresponding Author

Kwame Dapaah-Afriyie, MD
Professor of Medicine, Clinical Educator
Warren Alpert Medical School at Brown University
Division Director
Division of Hospital Medicine
The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906

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