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Tophaceous Gouty Arthritis

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Keywords

gout; tophaceous gout; allopurinol; anakinra

Introduction

The management of gout may be complicated by comorbid conditions that limit treatment options for acute and recurrent flares.

Case Presentation

A 64 year-old man with diastolic heart failure, chronic kidney disease (CKD), and tophaceous gout with frequent recurrent flares was admitted for acutely decompensated heart failure. Diuresis with intravenous furosemide was commenced with improvement of his volume status but resulting in a flare of polyarticular gout. On his third hospital day of receiving a diuretic, he developed acute pain, redness, and swelling in multiple joints of his right upper extremity, but most noticeably in a large tophus overlying his right second proximal interphalangeal (PIP) joint. Non-steroidal anti-inflammatory agents (NSAIDs) were avoided due to his renal dysfunction. Colchicine was initially deferred on the basis of the same reasoning. Glucocorticoids were not given for fear of worsening his volume overload. Anakinra was administered, with rapid relief of pain and inflammation over several days. The patient was started on allopurinol with colchicine prophylaxis following the resolution of his flare. Outpatient intravenous infusions of pegloticase were discussed as an alternative treatment for his chronic tophaceous gout, but deferred due to the cost and concerns over adherence.

Discussion

The prevalence of gout increases with age and is associated with comorbidities such as obesity, hypertension, and CKD [1]. For an acute flare of gouty arthritis, the recommended first line agents are NSAIDs or colchicine [2]. Glucocorticoids may also be used for those in whom these first line agents are contraindicated, though caution must be taken in individuals with heart failure [1]. Anakinra, an IL-1 receptor antagonist, is a safe and effective option for the treatment of acute gouty arthritis in patients with comorbid conditions that render first-line medications less attractive options [3]. Urate-lowering therapy (ULT), such allopurinol, is indicated for those with two or more gout flares in a year, or those with tophi. Even in those with CKD, allopurinol should be dosed to target a serum uric acid < 6 mg/dL as recommended in the 2012 American College of Rheumatology guidelines, rather than strict dosing by creatinine clearance, as the latter approach results in inadequate control of gout [2; 4-5]. More recently,

however, the American College of Physicians issued guidelines that monitoring the serum uric acid level and treating to target cannot be recommended on the basis of the current body of low quality evidence [6]. In either case, in this patient with frequent acute flares of gout with an extensive tophaceous burden, frequent clinical monitoring and titration of ULT is prudent to decrease the number of flares and their impact on quality of life. Intravenous infusions of pegloticase may be considered in patients who fail, or are intolerant of, ULT; there is randomized controlled trial level evidence that pegloticase has efficacy in the reduction of tophi [7]. Surgery treatment of tophaceous gout is limited to case series and reports, though may be considered in cases of complications, such as infections, ulceration, compressive neuropathy, or joint destruction, or when functional ability is impacted [8].

Figures

Figure 1: The patient's right hand with multiple tophi during an intercritical period (interval between gout flares).

Figure 2: Plain radiograph of the patient's right hand demonstrating juxta-articular bony erosions with overhanging edges in the proximal phalanx of the index finger, which is consistent with gout. There are multiple areas of soft tissue swellings surrounding the fingers, consistent with tophi.

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