Gout Attack Associated with the Use of Long-Term Low-Dose Salicylate in the Emergency Department

Uzun Süre Düşük Doz Salisilat Kullanımına Bağlı Gelişen Gut Atağı

Acil Serviste Gut Atağı / Gout Attack in the Emegency Department

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Özet

Gut, pürin metabolizması sonucunda oluşan ve ataklar halinde kendini gösteren metabolik bir hastalıktır. Tedavide genellikle kolşisin kullanılır. Travma, alkol kullanımı, soğuğa maruziyet, proteinden zengin diyet, cerrahi uygulamalar, diüretik tedavisi, radyoterapi ve düşük doz salisilat tedavisi gut atağını tetikleyebilir. 80 yaşında, sol ayak parmak ağrısı ile acil servise başvuran erkek hastada, uzun süre kullanılan düşük doz salisilat tedavisinin gut atağına neden olduğu düşünüldü. Acil servise gut atağı ile başvuran yaşlı hastalarda salisilat kullanımına özellikle dikkat edilmeli, gerekirse ilaç tedavisi yeniden düzenlenmelidir.

Anahtar Kelimeler

Gut; Atak; Salisilat; Tedavi

Abstract

Gout is a metabolic disorder characterized by episodes which occurs as a result of purine metabolism. Colchicine treatment is generally used. Trauma, alcohol use, exposure to cold, protein-rich diet, surgical procedures, diuretic therapy, radiotherapy and low-dose salicylate therapy may trigger an episode of gout. Long time low-dose salicylate therapy was thought to caused an attack of gout for an 80 years old male patient admitted to our emergency department with pain in the left toe. Salicylate use should always be considered in elderly patients who admitted to the emergency departments with acute gouty attacks and if necessary, drug therapy should be revised.

Keywords

Gout; Attack; Salicylate; Treatment

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Introduction

Gout is a metabolic disorder characterized by hyperuricemia which is associated with increased levels of uric acid in serum as a product of purine metabolism, accumulation of sodium urate monohydrate crystals in the tissues, and renal involvement [1,2]. The first episode of gout is typically seen between 4th and 6th decades [3,4]. The first attack is usually restricted in a single joint that is the first metatarsophalangeal joint. Trauma, alcohol use, exposure to cold, protein-rich diet, surgical procedures, diuretic therapy, radiotherapy and low-dose salicylate therapy can be counted among the factors that trigger an episode of gout [5].

Colchicine is a fat-soluble alkaloid drug which has been safely used for initial treatment of gouty arthritis and pseudo-gout attacks for more than 150 years [6,7]. Non-steroidal anti-inflammatory drugs are commonly used also. However, high doses of salicylates are not used in the treatment of gout, because they may cause uric acid retention [8,9].

Case Report

Eighty-eight-year-old male patient was admitted to emergency department with complaints of severe pain in the left great toe. The pain started when he was sitting at home, and there was no history of trauma and cold exposure. We learned that a stent was placed due to aortic aneurysm about 4 years ago and salicylate 100 mg/day and metoprololol 50mg/day had been given for prophylaxis. His past medical history was also significant for gouty arthritis which was diagnosed about 10 years ago and he was prescribed any medication for this but he was using a drug for his Parkinsonism.

Physical examination of the patient reveals stable vital signs; there was hyperemia, warmth and edema, and pain with motion in the left first metatarsophalangeal joint of patient. Examinations of the other systems were normal. At admission, laboratory tests are reviewed (Table 1.).

Table 1. Results of Laboratory tests

Parameters	Patient Values	Normal Range
White blood cell count (WBC), mm^3	9.300	4.000-10.500
Red blood cell count (RBC), mm^3	5,63	4.7-6.00
Hemoglobin (Hb), g/dL	13,6	13.5-18.0
Hematocrit (Htc), %	42,2	42-52
Platelets (Plt), mm^3	218	150-450
Serum blood glucose, mg/dL	130 (postprandial)*	65-107
Blood Urea nitrogen (BUN), mg/dL,	71	15-44
Creatinine, mg/dL	1.99	0.6-1.4
Blood Sodium (Na) , mmol/L U/L	137	135-145
Blood Potassium(K), mmol/L	4.25	3.5-5.5
Uric acid, mg/dL	8.2*	2.5-8

* High parameters in bold

According to complaints and physical examination findings, a gouty attack was suspected. We concluded that cause of gouty attack was low-dose salicylate therapy for a long period. Because, other factors such as alcohol consumption, a change in diet, trauma, exposure to cold or using a diuretic in the history of the patient, the only factor that may exacerbate an acute gouty attack could be thought as low-dose salicylate therapy.

The patient was hydrated done in the emergency department. Clopidogrel (75 mg / day) was prescribed to the patient after discontinuation of salicylate therapy. Non-steroidal anti-inflammatory drugs were not recommended; because, there were findings of renal failure. However, corticosteroid (prednisone, 40–60 mg/day, for 3 days)) treatment was planned and the patient was discharged. On follow up, there was no attack of gout along three months.



Figure 1. Gouty arthritis with hyperemia in the first metatarsophalangeal joint of left leg

Discussion

Gout disease, as a result of the deposition and precipitation of urate crystals within joints or around, generally begin in the form of recurrent episodes of acute arthritis [10]. Attacks usually occur in a single joint, tend to be at night and often wake up the patient from sleep. Factors which may play a role in etiology can often provoke an episode of gout. Trauma, prolonged starvation, rich protein diet, alcohol use, surgery, infection, and drugs are factors predisposing to gouty attacks. Diagnosis of gout is made by physical examination combined with the presence of the high levels of serum uric acid levels [4,10].

As no other possible cause was identified except use of salicylates and physical findings with high levels of serum uric acid consistent with a gouty attack, in our case, we concluded that gouty attack was the result of using low-dose salicylate therapy for a long period of time.

Colchicine is the initial drug of choice in the treatment of an acute attack. It can also aid in diagnosis while treating the patient. Uricosuric drugs and allopurinol are not choices in the treatment of an acute attack. Indomethacin has no uricosuric effects. But, it can be used to treat gouty attack owing to its strong anti-inflammatory effects. Naproxen sodium is another option that can be used in the treatment of the attack. Not only high doses of indomethacin but also naproxen is sufficient to treatment with 2-day application [7]. In our case, colchicines were not used because of renal failure. Therefore, corticosteroid treatment was appropriate in management of the patient. Salicylates inhibit tubular secretion of uric acid and may cause uric acid retention. Salicylates raise the frequency of attacks and worsen symptoms due to increased uric acid levels. Use of low dose salicylates for a long time may cause an attack due to chronic elevated uric acid levels [8].

As a result, medical history of patients with gouty attacks should be evaluated carefully when they admitt to the emergency room. Drugs including salicylates that may cause gouty attack should be reviewed. Treatment of patients should be planned by taking renal function into account and patients should be informed about factors which may provoke gouty attacks.

Competing interests

The authors declare that they have no competing interests.

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