Batı Karadeniz Tıp Dergisi
Medical Journal of Western Black Sea

Doi: 10.29058/mjwbs.2018.1.4

Case Report

Non-Steroidal Anti-Inflammatory Drug Induced Kounis Syndrome

Abdullah Cuneyt Hocagil [a], Hilal Hocagil [a], Volkan Ulker [a], Kerem Oz [a], Guleser Akpinar [b]

[a] Emergency Medicine, Medicine Faculty, Bülent Ecevit University, Zonguldak, Turkey,
[b] Emergency Medicine, Şişli Hamidiye Etfal Training and Research Hospital, İstanbul, Turkey.

A R T I C L E
I N F O R M A T I O N

Gönderilme Tarihi:
06.09.2017
Revizyon:
07.12.2017
Kabul:
13.12.2017

Correspondence Author:
Abdullah Cuneyt Hocagil
drhocagil@yahoo.com.tr

Keywords:
Kounis Syndrome, Allergy, Vasospasm

A B S T R A C T

Kounis syndrome is a very rare syndrome which includes anaphylactic, anaphylactoid and hypersensitivity reactions accompanied with mast cell activation and acute coronary syndrome. In this case we aimed to define kounis syndrome.

A 68 years old male patient applied to emergency department with back pain. After administration of the intramuscular analgesic; the patient suffered from symptoms such as dizziness, burning sensation all over the body. Patient was examined and blood pressure was 75/45 mmHg, heart rate was 90 beats/minute and respiratory rate was 14 /minute. The patient was detected with hyperemic skin and minimal uvular edema. Electrocardiography findings were ST segment elevations at derivations D2, D3, aVF, V5, V6 and ST segment depressions at derivations V1, V2, V3, D1, aVL. After percutaneous coronary angiography, coronary arteries were detected normal. The patient, newly diagnosed with acute coronary syndrome after allergen exposure, with positive skin findings and hypotension was evaluated as Kounis syndrome.

There are 3 types of Kounis syndrome. These are defined as vasospastic allergic angina, allergic myocardial infarction and eosinophil and mast cell infiltration related stent thrombosis. The patient, without abnormal coronary arteries findings, was detected with coronary artery syndrome secondary to vasospasm.

Increased exposure to allergens, increased awareness of physicians about Kounis syndrome, overconsumption of medicines contributes to increase this syndrome. The incidence of Kounis Syndrome has increasing but diagnosis of Kounis Syndrome is inadequate and easily overlooked. Most of all patients, presented with allergic reactions, should be evaluated for Kounis syndrome.

Batı Karadeniz Tıp Dergisi
Medical Journal of Western Black Sea

Doi: 10.29058/mjwbs.2018.1.4

Olgu Sunumu

Non Steroid Anti Enflamatuar İlacın Tetiklediği Kounis Sendromu

Abdullah Cuneyt Hocagil [a], Hilal Hocagil [a], Volkan Ulker [a], Kerem Oz [a], Guleser Akpinar [b]

[a] Acil Tıp Anabilim Dalı, Tıp Fakültesi, Bülent Ecevit Üniversitesi, Zonguldak, Türkiye,
[b] Acil Tıp Anabilim Dalı, Şişli Hamidiye Etfal Uygulama ve Araştırma Hastanesi, İstanbul, Türkiye.

M A K A L E
B İ L G İ S İ

Gönderilme Tarihi:
06.09.2017
Revizyon:
07.12.2017
Kabul:
13.12.2017

Sorumlu Yazar:
Abdullah Cuneyt Hocagil
drhocagil@yahoo.com.tr

Anahtar Kelimeler:
Kounis Sendromu, Alerji, Vazospazm

Ö Z E T

Kounis sendromu anafilaktik, anafilaktoid ve aşırı duyarlılık reaksiyonlarını içeren mast hücre aktivasyonu ile akut koroner sendromun birlikte bulunduğu nadir görülen bir sendromdur.
Kounis sendromlu vakayı tanımlamayı amaçladık.
68 yaşında erkek hasta acil servise sırt ağrısı nedeni ile başvurdu. İntramusküler analjezik tedavisi sonrası halsizlik, tüm vücutta yanma gibi semptomlar gelişti. Hastanın fizik muayenesinde kan basıncı 75/45 mmHg, kalp hızı 90 atım/dakika ve solunum hızı dakikada 14 idi. Cilt hiperemik ve uvulada ödem mevcuttu. Elektrokardiyografide D2,D3,aVF,V5,V6 derivasyonlarında ST segment elevasyonu, V1,V2,V3, D1,aVL derivasyonlarında ST segment depresyonları mevcuttu. Perkutanöz koroner anjiografi sonrası koroner arterleri normal olarak tespit edildi. Alerjen maruziyeti sonrası akut koroner sendrom gelişen ve cilt bulguları ve hipotansiyonu olan hasta kounis sendromu olarak değerlendirildi.
Kounis sendromunun; vazospastik alerjik anjina, alerjik miyokardiyal enfarkt, eozinofil ve mast hücreleri infiltrasyonuna bağlı stent trombozu olmak üzere üç varyantı bulunmaktadır. Koronerleri normal olan hastamızda vazospazma bağlı akut koroner sendrom görüldü.
Alerjenlere artan maruziyet, hekimlerin kounis sendromunun konusunda artmış farkındalıkları, ilaç tüketimini artmış olması bu sendromun artmasına katkıda bulunmaktadır. Kounis sendromunun insidansı artmaktadır fakat tanısı yetersiz ve kolayca gözden kaçmaktadır. Alerjik reaksiyonlarla prezente olan hastalar kounis sendromu için değerlendirilmelidirler.

Introduction

Kounis syndrome is a very rare syndrome which includes anaphylactic, anaphylactoid and hypersensitivity reactions accompanied with mast cell activation and acute coronary syndrome (1).

In this case we aimed to define a patient detected with acute ST-segment elevations and newly diagnosed myocardial infarction immediately, after intramuscular administration of the non-steroidal anti-inflammatory drug. Kounis syndrome was considered because allergic or hypersensitivity reactions with acute coronary syndrome occurred at the same time.

Case

A 68 years old male patient, previously diagnosed with hypertension, applied to emergency department with back pain. The patient suffered from symptoms such as dizziness, burning sensation all over the body, palpitations, chest tightness for four minutes, after administration of the intramuscular analgesic. Patient was examined and blood pressure was 75/45 mm Hg, heart rate was 90 beats / minute and respiratory rate was 14 /minute. The patient was also detected with hyperemic skin and minimal uvular edema. Electrocardiography findings were ST segment elevations at D2, D3, aVF, V5, V6 derivations and ST segment depressions at V1, V2, V3, D1, aVL derivations. During clinical observation of the patient, his cardiac markers did not elevate. The patient was diagnosed with inferolateral myocardial infarction. The patient was administered antihistaminic and steroid treatment for anaphylactic reaction simultaneously with acute coronary syndrome treatment, but adrenaline was not administered due to the risk of increased coronary vasospasm. After treatment in the emergency department, percutaneous coronary angiography was planned. After percutaneous coronary angiography, coroner arteries were detected normal. The patient was observed at the hospital for two more days without any complications and was discharged with medical treatment and allergy polyclinic control was recommended.

After taking detailed history from the patient, it was found that the patient was diagnosed with anterior myocardial infarction following an oral Non-Steroidal Anti Inflammatory Drug (NSAID) treatment and had similar symptoms such as chest pain one month prior. After percutaneous coronary angiography, coronary arteries were detected normal.

Discussion

This syndrome was described by Dr. Nicholas Kounis and Zavras in 1991. There are three types of Kounis syndrome. Type 1, vasospastic allergic angina occurs when released allergic mediators causes coronary vasospasm in absence of any coronary arter disease. Type 2, allergic myocardial infarction is presented with acute coronary syndrome clinic in patients with underlying coronary artery disease. Allergic mediators cause vasospasm, plaque vulnerability or plaque rupture. Type 3, stent thrombosis related with occluding thrombus that infiltrated with eosinophils and mast cells. Histamine, neutral proteases, arachidonic acid products, platelet activating factor and a variety of cytokines and chemokines can be such mediators causing Kounis syndrome (1-4).

The patient, without abnormal coronary arteries findings, was detected with coronary artery syndrome secondary to vasospasm.

Kounis syndrome has been reported mostly in southern Europe, especially in Spain, Italy, Greece, and Turkey. Increased exposure to allergens, increased awareness of physicians about Kounis syndrome, overconsumption of medicines contributes to increase this syndrome. The incidence of Kounis Syndrome has increasing but diagnosis of Kounis Syndrome is inadequate and easily overlooked. Among all of the countries including Turkey, it has been thought that in fact, the incidence is much higher and cases are overlooked.

Clinical presentation of patients with Kounis Syndrome may vary. In some patients life-threatening allergic reactions such as anaphylaxis are on the forefront and might result with death; while in some patients symptoms such as chest pain are accompanied with mild allergic reactions (5). In our patient with Kounis syndrome was presented with angioedema, chest pain and feeling of discomfort.

Kounis syndrome can be triggered with a number of allergens. In some studies, drugs especially antibiotics, NSAIDs, hymenoptera venom, foods, latex are shown to be common reasons while insect bites are more frequent in other studies (6). Also, infectious agents, malignancies and chemicals stimulating immune system should be kept in mind as causes of kounis syndrome (7). In our patient, kounis syndrome was triggered by

NSAIDs which is the second common cause of this syndrome after antibiotics.

Aside from clinical presentation, high levels of serum histamine, triptase, spesific immunoglobulin E antibodies and eosinophils supports the diagnosis of Kounis Syndrome. Because of the low half-life of histamine (10 mins) and tryptase (90 mins) after onset of the reaction, their usage in diagnosis is limited (5). In our hospital's emergency department, these tests can not be performed, therefore our patient's serum levels are unknown.

In a review consisting of 175 patients, it is determined that this syndrome most frequently occurs in between 51-60 ages (%29.7), second frequent age group is 61-70 ages (%23.4) and with the rate of %74.3 in male patients. Our patient were 68 years old and male. It is similar with the review (8). Compared to normal population, atopic people have higher risk of acute coronary syndrome and higher risk of other vascular diseases. This is attributed to the higher levels of the immunoglobulin E. In another study, it has been found that women have less the immunoglobulin E levels than men have (9); this can explain why Kounis syndrome is more common in men than in women.

In our patient, vasospasm resulted in ST elevations without elevations of cardiac enzymes. This situation is consistent with Type 1 Kounis Syndrome. In a study by Abdelghany M et al, kounis syndrome type 1 is the most common with the rate of %72.6(8).

In a study which experimental anaphylaxis is generated, heart is detected to be affected in 3-4 minutes after allergen is induced; cardiac output decreased by %90 and this results in hypotension (9). Our patient's symptoms had just started after 4 minutes later of intramuscular injection and blood pressure was measured 75/45 mmHg.

In our patient's electrocardiography, there was ST elevations at inferolateral derivations. In the review, it has found that inferior area is most affected in patients with the rate of %76(3,6,8).

Treatment of Kounis sydrome consists of drugs which are used for acute coronary syndrome and anaphylaxis treatment. It should be remembered that drugs which are used for acute coronary syndrome treatment can increase allergic reactions. Adrenaline which is the main drug using for treatment of anaphylaxis should be administered to selected patients due to its effect of increased oxygen usage of heart and increased risk of vasospasm and dysrhythmias. To decrease vasospasm; calcium channel blockers and nitrates are recommended in Kounis Syndrome treatment (5,10). In our patient we administered aspirin and ticagrelor loading dosage for acute coronary syndrome; antihistaminics and steroid for allergic reaction.

As a result, Kounis Syndrome should be considered in patients with chest pain and allergic reactions or exposure to allergens simultaneously.

References

1. Arora S, Patel R, Fadila M, Wool K. The atopic heart: a curious case of coronary hypersensitivity. Neth J Med. 2016;74:130-2.

2. Lopez PR, Peiris AN. Kounis sydrome. south Med. J.2010;103:1148-55.

3. Davidovic G, Cupic VI, et al. Case Report Kounis syndrome, two case reports from Kragujevac, Serbia Am J Cardiovasc Dis 2014;4:20-25.

4. Cervelle G, Neri G, et al. Kounis syndrome triggered by a spider bite. A case report International Journal of Cardiology, 2016;207: 23-24.

5. Tok D, Özcan F, et al. A case of acute coronary syndrome following the use of parenteral penicillin: Kounis syndrome Arch Turk Soc Cardiol 2012; 40: 615-619.

6. Gázquez V, Dalmau G, et al. Investig Kounis Syndrome: Report of 5 Cases Allergol Clin Immunol 2010;20: 162-165.

7. Kounis NG, Soufras GD, et al. Postmortem diagnosis of drug-induced anaphylactic death: Kounis syndrome and hypersensitivity myocarditis are the likely culprit in death of severe anaphylactic reactions Journal of Forensic and Legal Medicine, 2016; 40: 40-41.

8. Abdelghany M, Subedi R, et al. Kounis syndrome: A review article on epidemiology, diagnostic findings, management and complications of allergic acute coronary syndrome. Int J Cardiol. 2017;232:1-4.

9. Nicholas G. Kounis Kounis syndrome (allergic angina and allergic myocardial infarction): A natural paradigm? International Journal of Cardiology 2006;110: 7–14.

10. Kounis NG. Coronary hypersensitivity disorder: the Kounis syndrome. Clin Ther. 2013;35:563-71.