Ibuprofen-induced Kounis syndrome with diffuse ST segment depression and atrial fibrillation

To the Editor,

Kounis syndrome is defined as acute coronary events associated with allergy, anaphylaxis, or anaphylactoid reactions (1). In this syndrome, many inflammatory mediators, such as histamine, chymase, tryptase, thromboxane, prostaglandins, leukotrienes and its derivatives, as well as different cytokines and chemokines play a major role together with the activation of mast cells, lymphocytes, macrophages, and eosinophils (1, 2). Many factors, such as foods, different drugs, environmental exposures, and coronary stents, may trigger allergic reactions (1, 2). We presented a case of ibuprofen-induced Kounis syndrome with diffuse ST segment depression with ST segment elevation in aVR lead and atrial fibrillation.

A 57-year-old man presented with complaints of nausea, vomiting, itching, dyspnea, and retrosternal chest pain after taking ibuprofen+pseudoephedrine combination cold medication. He had no known systemic disease or prior drug use. He had taken two tablets of the same drug 15 days ago. Physical examination findings were as follows: cold, sweaty , blood pressure of 80/50 mm Hg, and pulse rate of 120 bpm. Isotonic sodium chloride infusion, dexamethasone, and pheniramine were administered, and subsequently, blood pressure increased. In the first 10 min of the ongoing chest pain, electrocardiography was performed, which showed diffuse ST depression with ST elevation in aVR lead. Cardiac troponin-I levels were 19.5 (normal range, 0.0–0.1)

ng/mL, and mass CK-MB was 15.6 (normal range, 0.0–3.2) ng/mL. Echocardiography revealed mild hypokinesia of the left ventricle. Follow-up electrocardiography revealed improvement in ST depressions as well as atrial fibrillation. Coronary angiography showed normal arteries. Atrial fibrillation spontaneously recovered. Diltiazem, ketotifen, and acetylsalicylic acid were administered, and the patient was discharged with recommendations.

Ibuprofen is a widely used nonsteroidal anti-inflammatory drug that rarely causes allergic reactions (3). Kounis syndrome was first described by Kounis in 1991 and occurs in people of all age groups; however, because most cases remain undiagnosed, frequency is less often indicated in literature (1, 2). It is seen more frequently Southern Europe, especially Turkey, Greece, Italy, and Spain. Climate, environmental factors, and gene–environment interactions play a role in the development of this syndrome, and heterozygous E148Q mutation is frequently observed in Kounis syndrome (1). The diagnosis depends on clinical suspicion, symptoms, and signs as well as laboratory, electrocardiographic, echocardiographic, and angiographic evidence (1, 2). This syndrome has different subtypes: Kounis syndrome type 1 is an acute myocardial infarction associated with a mediatorinduced coronary spasm in the normal coronary artery; type II is associated with atheromatous plaque stimulated by mediators; and type III is associated with sten t thrombosis (1, 2). According to findings, our case is of a type I variant. Although myocardial ischemia due to systemic hypotension has been previously reported, in our case, symptoms continued despite improvements in hypotension (4). Many triggers have been reported in the literature, but association with ibuprofen is rarely reported. Our case is of an unusual ibuprofen-associated Kounis syndrome suspected to be related to the left main coronary artery occlusion based on electrocardiographic findings, with atrial fibrillation occurring afterward.

There is no common consensus about treatment of this syndrome, but the treatment target is subtype dependent. Mast cell-stabilizing drugs, steroids, ketotifen, nedocromil sodium, and sodium cromoglycate may be helpful in managing allergic reactions. Exposure of the patient to trigger mediators should be avoided (1, 5). Vasodilators (non-dihydropyridine calcium-channel blockers and nitrates) should be initiated for coronary vasospasms (1, 2, 5). In subtypes II and III, the coronary events should also be treated (1, 2).

Murat Akçay
Department of Cardiology, Faculty of Medicine, Ondokuz Mayıs University, Samsun-*Turkey*

References

1. Kounis NG. Kounis syndrome: an update on epidemiology, pathogenesis, diagnosis and therapeutic management. Clin Chem Lab Med 2016; 54: 1545–59.
2. Fassio F, Almerigogna F. Kounis syndrome (allergic acute coronary syndrome): different views in allergologic and cardiologic literature. Intern Emerg Med 2012; 7: 489–95.
3. Kumar A, Berko NS, Gothwal R, Tamarin F, Jesmajian SS. Kounis syndrome secondary to ibuprofen use. Int J Cardiol 2009; 137: e79–80.
4. Antonelli D, Koltun B, Barzilay J. Transient ST segment elevation during anaphylactic shock. Am Heart J 1984; 108: 1052-4.
5. Keskin M, Hayıroğlu Mİ, Onuk T, Keskin Ü, Ekmekçi A. Kounis syndrome presenting with acute inferior wall myocardial infarction and cardiogenic shock secondary to intravenous ampicillin/sulbactam administration. Anatol J Cardiol 2016; 16: 893-4.

Address for Correspondence: Dr. Murat Akçay
Ondokuz Mayıs Üniversitesi Tıp Fakültesi
Kardiyoloji Anabilim Dalı, Samsun-*Türkiye*
E-mail: drmuratakcay@hotmail.com

DOI:10.14744/AnatolJCardiol.2017.8045