



## A report of thrombocytopenia related with triamterene-H

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### Letter to Editor

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### Dear Editor

Triamterene-H is a drug commonly used to treat hypertension. Its side effects include thrombocytopenia, aplastic anemia, agranulocytosis, leukopenia, and megaloblastic anemia due to low concentration of folic acid. Thrombocytopenia due to drug adverse event is not diagnosed most often and patients with other differential diagnosis are subjected to invasive medical practice including bone marrow aspiration. Therefore, attention to the patient's drugs in order to rule out drugs inducing thrombocytopenia can be effective in preventing the invasive practice. The present study reviewed a case of thrombocytopenia in a patient who was treated with Triamterene-H.

The patient was a 58-year-old woman diagnosed with type 2 diabetes mellitus (DM) since about 10 years ago and hypertension since 5 years ago. The patient was referred to the diabetes clinic of Arak University of Medical Sciences, Arak, Iran for her periodic diabetes care. DM and hypertension were controlled [Fasting blood sugar (FBS): 110, Hemoglobin A1C (HbA1C): 6.5, blood pressure (BP): 135/75 mm Hg], however

thrombocytopenia was observed in the patient's tests. She had been treated with metformin 500 mg, Atenolol 50 mg, and Lisinopril 5 mg daily. Due to the uncontrolled hypertension, Triamterene-H was added to the patient's medications more than one year ago. The patient presented a history of thrombocytopenia in several recent laboratory tests and was very worried about this. In the tests taken from the patient in the last few months, platelet decreased to 92000/ $\mu$ l, 64000/ $\mu$ l, 54000/ $\mu$ l, and 46000/ $\mu$ l in 4 recent periodic tests. There was no family history of thrombocytopenia. There was no history of insect bites, recent travel, and allergies. There was no evidence of abnormal hemorrhage or skin lesions including Petechi and Purpura. The medical history and clinical examination were normal. Liver and kidney function tests were normal. There was no abnormality in the patient's initial coagulation tests. The patient referred to a hematologist before referring to out diabetes clinic. Therefore, the hematologist recommended bone marrow aspiration and the patient did not want to give the test. Unfortunately, it was impossible to know the precise molecular mechanism of thrombocytopenia in this case because the patient refused to perform diagnostic tests prescribed (including bone marrow aspiration) by the hematologist. Due to the patient's past medical history, the physician of the diabetes clinic suspected thrombocytopenia

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due to drug complications, and thus he advised discontinuation of the Triamterene-H use and repeating the complete blood count (CBC) and differential (diff) tests a few weeks later. After about a month, the patient referred to the diabetes clinic. The platelet count increased to 132000/ $\mu$ l. Unfortunately, the patient did not refer for further follow-up.

One of the reasons for thrombocytopenia is the destruction of platelets by drug-induced antibody. Several drugs can cause antiplatelet antibodies and drug-induced thrombocytopenia. Among anti-hypertensive drugs, diuretics include acetazolamide, furosemide, hydrochlorothiazide, and Triamterene-H can produce antiplatelet antibodies and cause drug-induced thrombocytopenia.<sup>1</sup> The reason for this issue is possible mechanisms approved.<sup>1</sup> Classic drug-induced immune mediated thrombocytopenia is caused by unusual antibodies that bind to complexes of drug (or drug metabolite) bound to platelet glycoproteins such as glycoprotein Ib-IX, glycoprotein IIb-IIIa, and platelet-endothelial cell adhesion molecule-1.<sup>1-3</sup> Several systematic reviews of drug-induced thrombocytopenia have been carried out to strengthen the clinical evidence about this issue.<sup>3-5</sup>

Paying attention to the side effects of drugs and patient medical history can help clinicians to diagnose adverse effects of drugs. Allocating enough time to get a detailed pharmacological and medical

history of the patient is a guide in correct diagnosis and sometimes eliminates the need for expensive and invasive tests.

In the present study, we reviewed a case of thrombocytopenia which was related to Triamterene-H, and the platelet count returned to the normal range in periodic laboratory tests after discontinuation of the drug. Therefore, clinicians should be aware of this potential adverse reaction and should be alert to medication thought to be the cause of thrombocytopenia.

### Conflict of Interests

Authors have no conflict of interests.

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