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Environmental and Emotional Stressors, Such as Earthquakes, as Possible Causes of Acute Coronary Syndrome

LETTER TO THE EDITOR

To the Editor,

I read with great interest a valuable article published in your journal entitled "Changes in Acute Coronary Syndrome Clinic after the Devastating Earthquake in Türkiye",[1] in which the authors aimed to investigate the clinical and angiographic characteristics of patients with acute coronary syndrome (ACS) who survived the 6 February 2023 devastating earthquake in Antakya, Türkiye.

Myocardial infarction due to ACS is an important cause of mortality and morbidity worldwide. In addition to traditional risk factors for myocardial infarction such as hypertension, smoking, diabetes, and dyslipidemia, external triggers such as physical exertion, emotional stress, lack of sleep, and natural disasters, also predispose to myocardial infarction.[2]

Although the pathophysiology is not fully known, earthquakes may induce cardiac stress via the sympathetic nervous system and the renin-angiotensin-aldosterone system axis activation, which can potentially lead to myocardial damage and other adverse cardiac effects.[2]

The study[1] is well structured and provides very detailed information about the profile of ACS, the severity and the complexity of coronary lesions. However, there are issues that i am curious about, especially regarding the methodology of the study.

First, the Gensini score was presented, but in the method section, it was not clarified how the Gensini score was calculated or which parameters were used, and it did not refer to any reference. The Gensini score is calculated according to the location of the lesion in the coronary bed, the degree of stenosis, and whether there is a collateral connection.[3]

Second, in the conclusion section, it was mentioned that "earthquake causes an increase in MINOCA quantity," which represents ACS "triggered by major environmental stress and the decrease in diabetes cases due to worsening nutritional conditions." However, according to the logistic regression analysis results, it was stated that "a 1-unit increase in BMI increases the risk of experiencing ACS after the earthquake approximately 1.2 times ($P = .001$)." There is an inconsistency between the two comments. In other words, while the worsening nutritional conditions caused by the earthquake reduce the frequency of DM, it increases body mass index (BMI) and therefore the frequency of ACS/MINOCA. Thus, one cause (worsening nutrition) produces two opposite effects (decreased DM vs. increased BMI) at the same time. Anyway, it is clear that the cardiometabolic effects of earthquake stress are complex, and large causal studies are needed to elucidate them.

In addition, it was stated that the earthquake group was created between February and June 2023, immediately after the earthquake. In this context, will

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the incidence of DM, which is a chronic disease that can often be regulated with difficulty, decrease in such a short time?

Third, although it does not have a statistically significant effect, Table 3 evaluates whether in-hospital mortality is a risk factor or a predictor for ACS/MINOCA. In-hospital mortality is a result, not a cause, because it occurs following ACS/MINOCA. In logistic regression, a result variable has to be dependent, not an influencing factor. However, it can be interpreted that in-hospital mortality rates are not different between the earthquake group and the non-earthquake group.

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