Letter to Editor
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The New Biomarkers for Acute Coronary Syndrome

Ozkan A[1], Ozdemir S[1],
[1] Department of Emergency Medicine, University of Health Sciences Bagcilar Training and Research Hospital, Istanbul, Turkey

Dear editor

We read your article prepared by Doğan and Taşlıdere, titled "Investigation of Panic Attack Patients Presenting to the Emergency Department of Bezmialem Vakıf University with Chest Pain" and published in the first issue of your magazine in 2023, with great interest (1). We would like to thank the authors and editorial board for this article, guides the effective use of resources in health. We would like to thank again to the authors for their efforts to clarify this situation, that is a clinical dilemma in the emergency department and that clinicians find difficult to manage We congratulate them. However, we would like to point out a few points that will contribute to the discussion of the study.

The diagnosis of acute coronary syndrome (ACS) is made by history, electrocardiography (ECG) and positive cardiac markers. However, the fact that all of them are negative does not exclude the diagnosis of ACS. Interestingly, 2-5% of patients with ACS are improperly discharged from the emergency department each year (2). This situation leads to long follow-up and examination processes in the emergency services, thus causing both time and financial loss. For this reason, many ACS risk scoring systems have been developed. By identifying low-risk patients in a short time, they can be discharged faster, which results in a reduction in the intensity and financial losses in the emergency department. At the same time, it allows high-risk patients to be identified in a short time and to give these patients more time and opportunities.

EDACS (Emergency Chest Pain Score Evaluation), Vancouver chest pain scoring system, HEART (History, ECG, Age, Risk factors, Troponin), TIMI (Thrombolysis in Myocardial Infarction) and GRACE (Global Registry of Acute Coronary Events) are among the scoring systems used to calculate the risk of 30-day major adverse cardiac events in the patient population presenting with chest pain in the emergency department. The purpose of risk scoring is to both predict possible complications and guide emergency physicians for safe and rapid discharge of patients (3).

Clinical evaluation is not sufficient to diagnose or exclude ACS in patients presenting to the emergency department with chest pain without ST segment elevation on ECG. Therefore, laboratory tests are useful in the evaluation of ACS. The most used biomarker in the evaluation of ACS is troponin. Cardiac troponins are proteinaceous molecules in the cytoplasm of cardiac myositis cells and required for cardiac contraction (4).

SCUBE-1 molecules are stored in alpha granules in inactive platelets. After activation by thrombin, it translocates to the platelet surface. It is secreted in the form of small soluble fragments and is incorporated into the thrombus. SCUBE-1 accumulation was detected immunohistochemically in the subendothelial matrix of advanced atherosclerotic lesions in humans. SCUBE-1 is thought to be a new platelet adhesion molecule (5). Recent studies have revealed that SCUBE-1 expression is increased in patients with acute coronary syndrome and acute large vessel atherothrombotic stroke. Immunohistochemically it has been shown that SCUBE-1 is collected in the subendothelial matrix of the atheroma plaque (6). However, the biological function of SCUBE-1 in atherosclerosis or thrombus formation is still unclear. In a study from Taiwan, they found that SCUBE1 was increased in patients with ACS (7). On the other hand, in a study from Turkey, it was reported that there was no relationship with SCUBE1 in patients with unstable angina pectoris (8).

Aspirosin is a fasting hormone that promotes hepatic glucose production. Aspirosin in plasma crosses the blood-brain barrier and directly activates orexigenic agouti-related peptide neurons in a cyclic adenosine monophosphate-dependent pathway. This signaling results in appetite stimulation and the urge to accumulate fat and body weight in a gamma aminobutyric acid-dependent manner of down-

Corresponding Author: Abuzer Ozkan **e-mail:** ebuzerozkan@gmail.com
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stream anorexigenic pro-opiomelanocortin neurons (9). In a study from Turkey, it is reported that aspirosin can be used as a biochemical marker in the evaluation of prognosis and mortality in ischemic heart disease (10).

Meteorin like is a poorly characterized small molecular weight secreted protein produced by activated macrophages. The main cellular sources are epithelial cells in the mucosa and fibroblasts in the skin (11). In another study from Turkey, it is found that negative correlation between the level of meteorin like and troponin in the emergency department (12).

Ischemia-modified albumin (IMA) occurs when changes in cellular size caused by ischemia reduce the binding capacity of the N-terminal region of albumin for cobalt, copper, and nickel. Because of this mechanism, changes in the level of IMA in clinical pictures with ischemia have been a frequently researched subject in recent years. Thus, IMA is a newly defined marker of ischemia (13). In another study from India, it is recommended that Ima can be used as a role out marker of ACS in patients with inconclusive diagnosis in emergency department (14).

As a result, ACS is an important cause of mortality and morbidity in developed and developing societies. Researchers should be encouraged to develop new biomolecules and markers and treatment options in this area.

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