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Editorial

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Adapting the HEART Pathway for Korean Patients: The Potential Impact on Chest Pain Management at Emergency Department

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Every year, a substantial number of individuals arrive at emergency department (ED) with complaints of chest pain. Chest pain is among the predominant reasons for ED visits, underscoring the severity of this issue.[1] It is critically important that chest pain should never be overlooked in emergency settings. This is because it could potentially be a signal of serious, life-threatening conditions such as acute coronary syndrome (ACS).[2] These medical emergencies, if left unattended or misdiagnosed, could possibly result in fatal outcomes. Therefore, the prompt identification and management of these patients are paramount to improving their survival chances.[3] On the other hand, it's equally important to remember that not all presentations of chest pain are indicative of a catastrophic illness. In many instances, patients present with what medical professionals classify as atypical chest pain, a non-life-threatening situation that often has a good prognosis.[4] Nonetheless, it requires proper medical attention to confirm the nature of the pain and determine an effective treatment plan. Hence, the goal is not only to speedily identify high-risk patients to provide them with the necessary treatment but also to find low-risk individuals and reduce unnecessary medical expenses. Careful patient triage and suitable resource distribution are vital for ensuring improved patient outcomes, economic efficiency, and the sustainability of our healthcare systems. The complexity and variety of chest pain complaints consequently require a comprehensive and systematic approach in emergency medical care. Given these considerations, it is highly important to implement an appropriate risk stratification tool for patients presenting with chest pain in the ED.

When attempting to diagnose ACS or identify high-risk patients without the aid of coronary angiography or stress testing, a variety of clinical factors, such as the patient's age, the typicality of chest pain, risk factors, electrocardiogram alterations, and troponin elevations, play a vital role. These various clinical indicators were combined into History, Electrocardiography, Age, Risk factors, and Troponin (HEART) score. The HEART scoring is a system used by medical professionals in the ED for risk stratification in patients with chest pain. This scoring system allows doctors to quickly assess chest pain in the ED and make decisions about hospital admission, treatment, and the need for further diagnostic tests. This system proves particularly beneficial for the identification of low-risk patients, who may not

Data Sharing Statement
The data generated in this study is available from the corresponding author upon reasonable request.

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require stress testing, invasive coronary angiography, or even hospitalization. Its use offers the potential for significant benefits to both patients and healthcare systems, as it effectively reduces unnecessary tests or hospitalization rates, thereby increasing the early discharge rate.[5)6)] Furthermore, it has been observed that the incidence of major adverse cardiac events (MACE) within 30 days is significantly lower when the HEART score is low.[7)] Hence, implementing the HEART pathway in EDs for patients presenting with chest pain can result in improved patient outcomes, increased efficiency, and substantial cost savings in healthcare.

The HEART pathway includes several risk factors, one of which is obesity, defined by a body mass index (BMI) of ≥30 kg/m^2. This standard for obesity is globally recognized, particularly in Western countries, as recommended by the World Health Organization. However, Asians generally have smaller body sized compared to people in Western countries, leading to a lower obesity BMI standard. Specifically, for Koreans, the Korean Society for the Study of Obesity recommends a BMI of ≥25 kg/m^2 as the threshold for obesity.[8)] Therefore, to effectively apply the HEART pathway in a Korean context, obesity criteria suitable for Koreans should be used. While the utility of the HEART pathway has been mainly confirmed in studies involving Western populations, there is a paucity of data on its application specifically in Asian or Korean populations.[9)]

Chae et al.[10)] conducted a prospective study involving 1,304 patients who visited the ED due to chest pain. In this study, the authors adapted the obesity diagnostic criteria in the HEART pathway to ≥25 kg/m^2, instead of ≥30 kg/m^2, to better suit Korean standards (referred to as the "modified HEART pathway"). The study found that when the modified HEART pathway was applied, it more accurately identified low-risk patients who could be immediately discharged, compared to the standard HEART pathway. The incidence of MACE at 30 days was 0.8% in the low-risk group identified by the modified HEART pathway, compared to 1.6% when using the standard HEART pathway. The modified HEART pathway was also more accurate in identifying patients who could be discharged early (sensitivity: 98.8% vs. 97.5%; negative predictive value: 99.2% vs. 98.4%).

This study represents the application of the HEART scoring system in Korean patients presenting with chest pain at ED. Furthermore, the use of BMI standards appropriate for Koreans adds significant value to the research. In emergency settings, where rapid judgment is crucial, the modified HEART scoring system will greatly assist Korean healthcare providers in promptly identifying low-risk patients and facilitating early discharges for patients with chest pain complaints.

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