Experiences and the use of BNP POCT platform on suspected stroke patients by a Chinese emergency department

Sir,

We have recently published an article about the opinions of the use of brain natriuretic peptide (BNP) among acute ischemic stroke patients in Annals of Indian Academy of Neurology.[1] In this field, several studies have reported that the plasma BNP level in cardioembolic stroke is

significantly higher than that in other the trial of ORG 10172 in acute stroke treatment criteria (TOAST) subtypes and associated with functional outcome at 6 months after ischemic stroke. Also, plasma BNP level has been shown to be an independent predictor of the mortality and myocardial infarction in stroke patients.[2-5] We also notice that a few studies were accomplished in the emergency department (ED) setting and wish to make some points about our experience.

According to the new stroke guidelines and recommendations published by the American Heart Association (AHA) and American Stroke Association (ASA), health providers' focus on the initial out-of-hospital and ED assessment, and management of the patient with acute stroke as depicted in the algorithm Goals for Management of Patients with Suspected Stroke.[6] Based on the related guidelines, we set up a clinical study about the use of BNP among acute stroke patients in our ED.[7] We suggest to add plasma BNP test at bedside to the third step of the AHA and ASA stroke guidelines in the ED. The suspected stroke patients could be obtained intravenous (IV) access and performed laboratory assessments within 10 min of arrival at the ED. The plasma BNP concentration is measured immediately at bedside, while other blood samples are sent to the department of laboratory medicine for necessary tests. Then, the patients get the emergent brain computed tomography (CT) or magnetic resonance imaging (MRI) scans. The 12-lead electrocardiogram (ECG) is recommended to perform at the ED.[7]

Our algorithm of diagnostic stroke subtypes using BNP is very efficient and different from our Japanese colleagues. In their study, they collected patients' blood samples twice and performed the BNP test on ischemic stroke patients after the emergent brain CT or MRI scan. And the 12-lead ECG was performed in hospitalization.[2]

In our opinion, we had better collected the blood samples together to test according to the related guidelines at the ED and save more time. The common target is to recognize the patients with cardioembolic stroke as soon as possible, due to high risks and poor long-term outcome, including death.[2-7] Based on a lot of published studies, the BNP testing at bedside on admission, could be suggested to add into early stroke management guidelines as a strategy for improving stroke subtype classification, predict the development of atrial fibrillation after admission, and risk stratification. Thus, rapidly guiding other diagnostic tests and accelerating the start of optimal secondary prevention (e.g., control of risk factors, interventional approaches for atherosclerotic disease, antithrombotic treatments for cardioembolism, and the use of antiplatelet agents for noncardioembolic stroke), further diagnostic examination, intensive rehabilitative intervention, and ultimately better patient outcomes. It is sensitive, specific, easy, rapidly processed, inexpensive, and widely available; suggesting that the plasma BNP could be a potential and good stroke biomarker for emergency physicians' use.[2-8]

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