“Possible Takotsubo Syndrome”: A Refreshing Start toward the Path to Detect the True Prevalence of Takotsubo Syndrome

John E. Madias^{a, b}

^aIcahn School of Medicine at Mount Sinai, New York, NY, USA; ^bDivision of Cardiology, Elmhurst Hospital Center, Elmhurst, NY, USA

Dear Editor,

The important contribution by Kim et al. [1] on “possible takotsubo syndrome (TTS)” is of great interest because it hinges upon the issue that TTS is underdiagnosed, and thus it is more prevalent than thought about by clinicians or as it is reported in the literature. The authors contrasted a subgroup of 244 patients (58.1%) from a cohort of consecutive 420 patients with TTS admitted to their tertiary hospital (Asian Medical Center Registry), who were felt to have suffered a “definite TTS,” after they underwent an imaging study (invasive coronary angiography, noninvasive coronary angiography via computed tomography, or Thallium-201 single-photon emission computed tomography, with 95% of these studies performed during the index hospitalization) to exclude coronary artery disease (CAD) with a subgroup of 176 patients who were thought of having a “possible TTS,” in whom CAD was not definitely ruled out on the basis of imaging, but nevertheless had evidence of characteristic transient ventricular ballooning, as assessed by admission and repeat echocardiography, as was also the case for the 244 patients with a “definite TTS” [1]. The patients with a “possible TTS” presented with dyspnea and hypoxia were primarily male; had secondary TTS, cancer, and sepsis; showed non-apical ballooning TTS variants; had less frequent ST-segment elevation on their electrocardiograms;

and suffered more frequently pulmonary edema and cardiogenic shock for which required more frequently mechanical ventilation and shock management, but they had similar in-hospital mortality (17.2% vs. 17.0%, $p = 0.964$) [1]. The authors are correct to remark that the imaging examination to exclude CAD, although it is deemed indispensable in making a diagnosis of “definite TTS,” it may be overlooked (e.g., in patients of younger age, or in the absence of history, or risks factors for CAD) or be frequently not feasible (e.g., in patients with severe conditions precluding imaging studies, like in the presence of neurological and other illnesses or in patients urgently needing other procedures or surgeries, or inability to move the patient, or terminal illness [1]); the authors’ work is also welcome because there is a paucity of information on the clinical profiles and outcomes of patients with “possible TTS.”

Implementation of strict diagnostic protocols in TTS, which include immediate coronary angiography, jeopardizes the efforts to detect the real prevalence of TTS. The authors marvelously elaborate in great detail about the reasons why such strict diagnostic algorithms could result in leaving scores of patients with TTS undetected, misdiagnosed, and when they have secondary TTS, managed without consideration that part of their pathology was after all TTS, with features of reversible left ventricular and

or right ventricular heart failure. I have some remarks, a few omissions, and questions for the authors to consider, hoping that they will oblige me with a response. (1) A rare reason for TTS non-detection is a rapid recovery of regional wall motion abnormalities and left ventricular ejection fraction, which have been documented to take place within hours to less than 1 day. (2) It is surprising that the authors excluded from consideration patients who had undergone a “recent open-heart surgery or had been diagnosed with pheochromocytoma” [1], since there is significant literature revealing that TTS could occur in the setting of post-operative course of patients undergoing a variety of cardiac surgical procedures, and some of the diagnostic criteria, which the authors consider strict, have accepted the notion that TTS could be triggered by pheochromocytomas and paragangliomas. (3) Although the authors feel that “the presence of CAD is not an exclusion criterion for the diagnosis of TTS” [1], they have not included among the patients of their research cohort any patients who have shown evidence of TTS (usually of the focal variant) in association with acute coronary syndrome or an acute ST-elevation myocardial infarction (the notion that such occurrence can take place in the form of a “TTS component” in conjunction with an acute coronary syndrome or ST-elevation myocardial infarction has been previously proposed [2]). (4) Since in any kind of pathology, there is a range of severity there should not be much doubt that there are mild cases of TTS [3], or even patients with “definite TTS,” who are completely asymptomatic [4]. (5) Although there is some relationship of established TTS with lethal arrhythmias, one wonders whether some patients may also develop TTS triggered by cardiac arrest or complete heart block. (6) Although the authors referred to the rate of recur-

rence of TTS in the 2 subgroups of the patients with TTS they compared, I wonder whether there is any information about ill health from the follow-up of patients without comorbidities with an index TTS, triggered by emotional stress, something recently discussed widely in the literature. (7) I wonder what the authors feel about the

pathophysiology of myocardial infarction with normal or nonobstructive coronary arteries; do they feel that some of such patients could be victims of TTS? (8) Would the sensitivity to diagnose TTS and its reversibility during the subacute phase of the disease and at follow-up be enhanced by implementing strain deformation echocardiography? (9) Would the sensitivity to diagnose TTS and its reversibility during the acute phase of the disease be enhanced by implementing early after admission and frequent thereafter echocardiography by many members of the caring teams employing hand held devices? [5].

The authors should be congratulated for providing us (both clinicians and investigators) with a more realistic picture of the prevalence of TTS, the pitfalls encountered in its detection, its significant mortality during hospitalization and follow-up, and the opportunities available in its management, aimed at focusing simultaneously at TTS and the associated comorbidities.

Conflict of Interest Statement

The author has no conflicts of interest to declare.

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