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Response to the letter by Sulkes et al. Regarding the Article: A Comparative Retrospective Study of Patients with Takotsubo Syndrome and Acute Coronary Syndrome

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The authors thank Sulkes et al. for their letter regarding our article, A Comparative Retrospective Study of Patients with Takotsubo Syndrome and Acute Coronary Syndrome [1].

TO THE EDITOR,

Takotsubo syndrome (TTS) may be induced by several drugs, mainly those with sympathomimetic properties by catecholamine mediated pathways [2,3]. TTS and other forms of unspecified transient left ventricular dysfunction have also been reported following anti-neoplastic therapy, including 5-Fluorouracil (5-FU), and by non-catecholamine mechanisms. In the case of 5-FU, these mechanisms include microvascular spasm, endothelial dysfunction and myocardial ischemia [3]. The majority of 5-FU related TTS cases have been described during or immediately after the infusion of the drug. The

re-administration of 5-FU after cardiac recovery has been a topic of debate.

Sulkes et al. [1] described an interesting and rare case of TTS following 5-FU administration in a patient with squamous cell carcinoma of the middle third of the esophagus. The diagnosis was assumed based on echocardiography, cardiac computed tomography (CT), and cardiac magnetic resonance (CMR). The measurement of natriuretic peptides (NPs) is recommended in such cases since high levels of NPs in addition to modest troponin elevation are indicative of the diagnosis. Moreover, the description of the specific type of TTS (i.e., typical, reverse, or median) may be clarified using ventriculography during coronary angiogram, or cardiac MRI. In general, the exclusion of obstructive coronary disease by cardiac CT and the absence of tissue edema and other signs of myocarditis along with the significant improvement in cardiac function by CMR a week later, make the diagnosis of TTS very reasonable. The use of the interTAK score may be helpful to estimate the probability of TTS with high sensitivity and specificity in equivocal cases [4]. Takotsubo and transient left ventricular dysfunction may be encountered in oncologic patients following the administration of different antineoplastic drugs or due to the overwhelming stress and fear secondary to the underlying disease. One of the evolving forms of cardiac toxicity in the onco-

logic arena is autoimmune myocarditis, particularly with the increasing use of the immune checkpoint inhibitors (ICIs). Fulminant autoimmune myocarditis has been reported following different ICIs and as associated with high reported mortality [5]. Among the currently available non-invasive imaging modalities to diagnose myocarditis, CMR is the most validated one.

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