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Is Takotsubo syndrome in patients receiving chemotherapy drug-specific?

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Abstract

In commenting on a case report of a 55-year-old man who suffered Takotsubo syndrome (TTS), in the setting of receiving chemotherapy with cytarabine and daunorubicin for acute myeloid leukemia, the author expresses his views that TTS in the setting of chemotherapy for malignancies may not be chemotherapeutic drug-specific (like in the chemotherapeutic drug induced-cardiomyopathy), but may be due to the emotional and physical stresses resulting from the realization of having diagnosed with a malignancy, and the diagnostic testing, and therapeutic management which follows.

Key words: Daunorubicin; Radiotherapy; Cardiotoxicity; Takotsubo syndrome; Malignancies; Chemotherapy; Cytarabine; Anthracyclines; Cardiomyopathy; Autonomic sympathetic Nervous system.

Core tip: Is Takotsubo syndrome, in time proximity to chemotherapy, due to the specific chemotherapeutic agent?

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TO THE EDITOR

The interesting report by Goel *et al*[1], published in the October, 2014 issue of the Journal, about the 55-year-old man who suffered Takotsubo syndrome (TTS), in the setting of receiving chemotherapy with cytarabine and daunorubicin for acute myeloid leukemia, is well documented and discussed; however it makes one wonder whether we are on the right track in terms of attributing causation of TTS to specific chemotherapeutic agents. A number of cases of patients receiving a variety of chemotherapeutic drugs[2], and radiotherapy[3], have been reported, and their authors, like in the present paper, delved in the issue of cardiotoxicity of the particular drug administered, akin with what is done for cases of drug-specific (*e.g.*, anthracyclines) chemotherapy-induced cardiomyopathy, which certainly should be

differentiated from TTS. The intimate association of TTS with malignancies is intriguing[4-7], and has made some to recommend that patients with TTS should undergo evaluation for an underlying malignancy[4,5]. In terms of mechanisms many have attributed TTS, in the setting of malignancies, to paraneoplastic manifestations[4-6], a heightened autonomic sympathetic nervous system tone, emanating from the emotional stress of patients with a recently made diagnosis of malignancy, and non-specific physical stresses, related to diagnostic procedures, and administered chemotherapy and radiotherapy, without of course discarding the possible cardiotoxic role of the implemented therapies[6,7]. Incidentally, any reader of the present report will be interested in the details of further management of this patient with non M3 acute myeloid leukemia, whether he received more therapy, the specific chemotherapeutic regimen implemented, and the eventual outcome.

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