Assessment of anthracycline-induced long-term cardiotoxicity in patients with hematological malignancies

Dear Editor,

We read with great interest the paper "Assessment of anthracycline-induced long-term cardiotoxicity in patients with hematological malignancies." We would like to share some points with the authors.

There was an Iraqi study about the prediction of anthracycline-induced cardiotoxicity earlier than this study.[1]

The outcomes were different (prediction vs. identification). The projected incidence in the first study was 38.7%. The case definition was different between the two studies. Al-Rubaye *et al.* used echocardiography (ECHO) and electrocardiography (ECG) while the Ali AA *et al.* incorporated cardiac troponin to Echo and ECG for case definition of Anthracycline induced cardiotoxicity.[1]

The study by Ali AA *et al.* recruited patients with no prior comorbidities, while (20% of Al-Rubaye *et al.*'s study had hypertension, diabetes, renal disease, and hypothyroidism). These comorbidities may contribute to the risk of cardiac dysfunction after receiving chemotherapy. On the other hand, this may be a better representative sample describing the complexity of managing such patient. In addition, eight patients (16%) received radiotherapy but no one in first study.

Acute myeloid leukemia was the most common hematological diagnosis in both studies.

The cumulative doxorubicin dose was in the same range in both studies. It was 282.6 mg/m^2 vs. 204.7 mg/m^2 in the other study and ranging between 100 and 450 mg/m^2.

The last issue is that the first study used troponin as an indicator of cardiac injury. The constellation of ECG, ECHO, and troponin increased the sensitivity of predicting anthracycline-induced cardiotoxicity by 95%. The troponin test is simple, cheap, and easily applicable.

The utility of troponin had been tested in other studies and in different chemotherapy protocols for hematologic or solid malignancies.[2]

The use of composite model of biomarkers and imaging may be more useful than each alone for early detection.[3]

Predictive model may be useful to look for a possible early cardiac dysfunction. Frequently, by the time cardiotoxicity is detected, significant left ventricular dysfunction has occurred, and ultimately, this may not respond to standard cardioprotective treatment.[4]

Thanks for the great efforts by all authors.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Received: 05-03-2020
Accepted: 26-06-2020
Published: 10-11-2020

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Quick Response Code:

Website: www.ijhonline.org

DOI: 10.4103/ijh.ijh_13_20

How to cite this article: Ali A. Assessment of anthracycline-induced long-term cardiotoxicity in patients with hematological malignancies. Iraqi J Hematol 2020;9:170-1.