The significance of echocardiography in oncology

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Over the past 30 years, the treatment of malignant diseases has made significant progress. Modern oncological therapies, including chemotherapy, radiotherapy, targeted therapies, and immunotherapy, have improved patient survival. Unfortunately, the treatment of malignancies has also led to an increase in adverse cardiovascular complications, which can negatively impact quality of life and survival. The cardiotoxic effects of oncological therapy can occur early or late after the initiation or completion of treatment. Their occurrence and intensity depend on the type of drug used, therapy combinations, radiotherapy, and pre-existing cardiovascular conditions. Due to the variability in the onset of negative effects on the heart, even years after treatment, and the increasing number of cancer treatment modalities, a new subspecialty—cardio-oncology—has developed to monitor and manage the impact and intensity of cardiotoxicity. Cardio-oncology plays a key role in addressing issues related to oncological treatments and heart health. According to the guidelines issued in 2022 by the European Society of Cardiology (ESC) for cardio-oncology, the aim is to assist all healthcare professionals providing care to cancer patients before, during, and after cancer treatment in terms of their cardiovascular health and well-being.[1] This highlights the importance of cardiac ultrasound in oncology and its crucial role in diagnosing cardiotoxicity. Three-dimensional (3D) echocardiography offers a more accurate way to measure left ventricular volumes, including left ventricular ejection fraction (LVEF), and has shown less variability in measurements compared to 2D methods. Therefore, 3D echocardiography should be used for serial monitoring of the cardiac effects of chemotherapy whenever possible. To understand the importance of more frequent monitoring of patients with echocardiography, it is essential to be familiar with how various cancer treatments affect the myocardium.[2,3]

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