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Onco-Cardiology: Consensus Paper from Germany

There is sufficient clinical evidence to show that the use of certain chemotherapeutic drugs is associated with cardiac toxicity. In many cases, the impairment in cardiac dysfunction caused by these drugs is lifelong and can severely impair the quality of life of patients. While many drugs continue to be approved to treat malignancies, the cardiac toxicity of these agents has often not been fully characterised.

A new consensus paper discusses the risk factors that lead to potential adverse reaction to tumour therapy and defines specific side-effect profiles for different treatment groups. The focus of this paper is on novel therapeutics and the specific surveillance and treatment of specific patient groups.

Cardiovascular disease and cancer share common mechanisms such as chronic inflammation and common risk factors (e.g. diabetes mellitus, obesity, hypercholesterolaemia etc.). Treatment of hypercholesterolaemia in patients with breast cancer offers benefits. Similarly, treating diabetes with metformin shows a reduced cancer rate in diabetic patients. High blood pressure is associated with an increased cancer rate in men and increased cancer mortality in both men and women. Hence, these shared risk factors are important and must be considered when treating cancer patients with underlying cardiovascular disease.

Radiotherapy is an important component of therapy for many types of cancers. However, radiotherapy-associated cardiovascular complications manifest not just acutely but chronically 20 years or more after exposure to radiation. Coronary artery disease is the most frequent cardiovascular complication after radiotherapy for breast cancer and these patients are at risk of developing CAD even 20 years after this treatment.

Similarly, conventional cytotoxic chemotherapy can also result in cardiovascular side effects, especially with the anthracycline class of drugs which are used to treat acute leukaemias, breast carcinomas, sarcomas, and malignant lymphomas.

Adverse cardiac effects of chemotherapeutic drugs may cause changes in laboratory testing and electrocardiography, imaging (i.e., thromboembolism), and may also present as myocardial ischaemia, left ventricular dysfunction, heart failure, or arrhythmias. Thus, a thorough cardiac history of the patient should be obtained in detail before starting cancer treatment. Patients should also undergo an ECG, echocardiogram, qualitative, and quantitative assessment of the left ventricle, ejection fraction, and in some cases, a stress test.

It is important for oncologists to work closely with cardiologists to assess for the presence of cardiac disease. Once patients are assessed, the stratification in different risk categories is essential. Those with mild disease may require close monitoring during cancer treatment or may be managed with protective therapy. Those with moderate to severe cardiac disease may require a change in cancer therapy to reduce the risk of adverse cardiac events.

The novel cancer therapies that are associated with an increased risk of adverse cardiac events include stem cell transplant and the use of tyrosine kinase inhibitors. The ECG is very useful in identifying patients at risk for arrhythmias. Several medications can increase the QT interval and lead to life-threatening arrhythmias. Thus a baseline QT interval must be recorded, and serial ECGs are recommended. Patients with a family history of prolonged QT interval should not receive tyrosine kinase inhibitors. Patients with atrial fibrillation must be managed with anticoagulants.

The key to preventing adverse cardiac events due to chemotherapeutic drugs is proper screening high-risk patients and greater collaboration between oncologists and cardiologists.

Source: Clinical Research in Cardiology
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