When Cardiology meets Oncology

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During the last decades, there have been significant advances in the field of Oncology leading to improved survival as a result of novel targeted therapies and immunotherapies. Despite the improved outcomes, there is increased recognition of cardiotoxicities associated with these therapies. Moreover, as the population is ageing, many cancer survivor patients and patients undergoing chemotherapy have co-morbid conditions, such as coronary artery disease, hypertension, and diabetes. Recent epidemiological studies, have shown that cardiovascular (CV) disease is the leading cause of non-malignancy related death in this population which at times may be a result of cardiotoxicities associated with their cancer treatments. As such, the field of cardio-oncology has seen significant growth over the last several years.

Cardiotoxicity may be induced by multiple mechanisms and lead to a variety of CV complications (arrhythmias, vascular toxicity, heart failure, thromboembolism, pericarditis). Current preventive strategies for cardiotoxicity include 1) monitoring with imaging tools (echocardiography and/or magnetic resonance imaging-MRI) and biomarkers during therapy with intervention when toxicity signals appear, or 2) chemotherapy limitation (dose/continuous infusion) in high risk groups (primary prevention). Further research is necessary to better understand the mechanisms of action of cancer therapies (tyrosine kinase inhibitors, proteasome inhibitors, histone deacetylase inhibitors, CDK4/6 inhibitors and immunotherapies) and how they affect the CV system. Moreover, it is important to improve our identification of patients at highest risk for development of cardiotoxicities prior to treatment through establishment of guideline-directed screening recommendations. The collaboration between cardiologists and oncologists in the management of treatment-related cardiotoxicities is essential in order for patients to continue receiving optimal cancer care while minimizing both short- and long-term CV risk. Through the establishment of a cardio-oncology service, it is feasible to achieve high rates of cardiac optimisation and cancer treatment continuation.