

Cardio-Oncology in Brazil: Current Scenario and Perspectives

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Cardio-Oncologia no Brasil: Cenário Atual e Perspectivas

Cardio-Oncología en Brasil: Escenario Actual y Perspectivas

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With the growing incentive to research and technological advances related to the area of oncology, actions for increasingly early diagnoses and more effective treatments are providing more chances of cure and survival to a significant number of cancer patients in different age groups. This is the result of the advent of new chemotherapeutic agents, immunotherapy, more effective radiotherapy modalities and more advanced surgical techniques. However, this entire therapeutic arsenal can cause serious adverse effects in several organic systems with the potential to interfere both in the proper conduct and / or effectiveness of the proposed treatment and in the prognosis of the patient after disease control or cure. Cardiovascular complications (cardiotoxicity), resulting from the various changes in the physiological balance of the cardiovascular system, induced by antineoplastic treatment, represent an important part of this context, being responsible for the biggest causes of morbidity and mortality, after unwanted evolution of cancer itself¹.

The first report on this subject occurred in the 1960s, through observations related to the clinical cardiovascular manifestations of daunomycin during the treatment of children with leukemia. From then on, several clinical and experimental studies, involving all age groups, different therapeutic agents and diagnostic laboratory and multimodal imaging methods have been published². The growing evidence of these complications gave rise to service organizations, where both specialties began to discuss therapeutic planning and its possible consequences on the cardiovascular system, identifying patients at greatest risk or vulnerability to its development - the concept of cardio-oncology emerged. In the past two decades, national societies and international organizations were formed with specific meetings and training centers created to expand the knowledge of cardio-oncology and the improvement of professionals involved in a multidisciplinary spectrum, searching for conditions that allow the maintenance of cancer treatment of cancer treatment with less risk or cardiovascular damage^{2,3}.

These patients are eight times more likely to have a fatal outcome compared to the general population⁴. Heart failure is a more prevalent complication, closely related to the use of anthracyclines, many times undiagnosed (subclinical), making the prognosis more reserved. Other complications, also frequent, are observed in the daily routine of cardio-oncology, such as changes in the vascular endothelium and subsequent thrombosis, systemic and pulmonary arterial hypertension, arrhythmias, myocardial ischemia, in addition to heart valve diseases and pericardiopathies^{5,6}. The diagnosis and management of primary cardiac tumors and cardiovascular metastasis from other sites are also part of this great universe of action of cardio-oncology⁷.

Cardiovascular diseases and cancer are the main causes of death in developed countries, with specific epidemiological aspects and common risk factors^{8,9}. In Brazil, according to data from the José Alencar Gomes da Silva National Cancer Institute (INCA), for each year of the 2018-2019 biennium, the expectation was 600 thousand new cases in adults and of 12,500 new cases in the child and youth population (0-19 years). Between 2009 and 2013, cancer motivated about 12% of deaths in the Brazilian children's and adolescent age group¹⁰.

Individual genetic predisposition (not routinely tracked) and age extremes (young and old) are also important predictive factors for the development of cardiovascular complications. However, most of these events can be precipitated by modifiable situations that can be acted with preventive or mitigating measures, whether promptly identified. The most significant risk factors are systemic arterial hypertension, diabetes, smoking, physical inactivity, obesity and

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excessive alcohol consumption, all ambiguously responsible for the highest incidence of cardiovascular diseases and cancer in the general population, especially lung, breast, prostate and colon^{11,12}.

The awareness and relevance of cardio-oncology crossed borders and raised the need for greater guidance of institutions operating in Brazil, when, in 2011, the Brazilian Society of Cardiology (SBC) published the 1st Brazilian Guideline on Cardio-Oncology (*1ª Diretriz Brasileira de Cardio-Oncologia*), in adults, and then, in 2013, the 1st Brazilian Guideline on Pediatric Cardio-Oncology (*1ª Diretriz Brasileira de Cardio-Oncologia Pediátrica*), both emphasizing the importance of this innovative area in daily practice, given the growing number of patients seen in our country in all age groups^{13,14}.

In November 2016, the Brazilian Group of Cardio-Oncology (*Grupo Brasileiro de Cardio-Oncologia - GBCO*) was created, gathering cardiologists associated to the SBC who also work with oncologic patients in several Brazilian institutions, with the objective of sharing experiences and assisting aspiring colleagues in their daily clinical cases through social network.

Brazil follows a global trend in the implementation of cardio-oncology as a cardiological modality, with growing adherence by various academic and non-academic institutions. The development of cardiological consultation programs involving primary hematological and oncological care centers opens up perspectives directly linked to the quality of care for patients undergoing cancer treatment, especially given the possibilities of cardiovascular complications that can compromise both the progress of the therapeutic protocol and the prognosis. The union between oncologists and cardiologists, with the support of their multiprofessional teams, favors safer treatment and allows actions to organize national registries and care programs even needy in our scenario.

This edition of the *Revista Brasileira de Cancerologia*, dedicated to cardio-oncology, warns about the importance of the essential recognition of the growing number of individuals being treated or cured of cancer, raises the understanding of the need for multidisciplinary integration of prevention-based treatment, teaching and research institutions, active monitoring and therapeutic intervention in a timely manner, in order to achieve control of this so serious problem, allowing an adequate quality of life for patients¹⁵.

Good reading!

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