

## INTERNATIONAL PERSPECTIVE

# Cardio-Oncology in Argentina

## Past, Present, and Future



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Because of ongoing advancements in anti-cancer therapies, the survival rates of patients with cancer have increased. However, this has resulted in a growing understanding that because cancer survivors are living longer, there is an increased risk of the development of serious adverse effects related to cancer treatments. Cancer treatments, including radiation therapy and certain chemotherapeutic agents (e.g., anthracyclines), targeted therapies (e.g., anti-HER2 agents), and immunotherapies, can result in cardiotoxicity, including heart failure, left ventricular dysfunction, coronary disease, and myocarditis. As such, heart disease is a leading cause of morbidity and mortality in cancer survivors (1).

Accordingly, cardio-oncology has emerged as a new, evolving medical discipline, recognizing that prolonging overall survival for cancer patients must also focus on preventing, minimizing, and optimally treating the development of cardiotoxicity. Although the field is in its infancy and requires the further development of robust, definitive clinical trials and updated guidelines, what is clear is that cardiotoxicity of cancer treatments may develop at any time, during or even several years or decades after therapy. Coordination between oncology and cardiology specialists is necessary to facilitate management and follow-up.

In the developed world, cancer and cardiovascular disease (CVD), including cardiac disease and stroke,

are 2 primary causes of morbidity and mortality. With more than 44 million inhabitants, Argentina has an age-standardized incidence rate of 218 new cases of cancer (excluding melanoma) per 100,000 inhabitants. It is among the countries with a medium to high incidence of cancer (range 172.3 to 242.9 per 100,000 inhabitants), with approximately 129,000 new cases diagnosed every year, according to estimates made by the International Agency for Research on Cancer. The 5-year prevalence for all cancers in Argentina is 337,638 cases (2). In Argentina, breast cancer is the most common, with more than 21,000 new cases per year and a rate of 71 cases for every 100,000 women. This is followed by prostate cancer (44 cases per 100,000 men) and lung cancer in men (32.5 per 100,000 men), with smoking being the highest risk factor for the latter (2). Cancer represents the most common cause of death in Argentina in people ages 40 to 64 years and the second most common for those ages 5 to 39 years as well as those older than 64 years. Some 60,000 people die each year in Argentina from malignant tumors, representing 20% of annual deaths (3).

Argentina is the second largest country in Latin America, where there are significant differences and inequalities among the economic, technological, health care, and infrastructure resources across different regions, which affects citizens' access to screening services and medical treatment. Despite governmental attempts to reduce such differences and increase resource capacity, regional differences in access to health care, particularly for cancer treatment, remain. Furthermore, Argentina's health care system is extremely complex, comprising the public and private sectors, social security, and trade unions, which are all involved in offering medical care (3).

In Argentina, although life expectancy overall is higher than in the past, secondary to effective strategies for preventing, detecting, and treating

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infectious diseases, noncommunicable diseases, primarily CVD and cancer, have become the leading causes of mortality in adults. Evidence suggests that the disease burden associated with CVD is secondary to increased cardiovascular risk factors in the Argentine population, including high tobacco use, excessive alcohol consumption, poor diet, obesity in nearly one third of the adult Argentine population, increased physical inactivity, and hypertension affecting more than one quarter of the population. These are associated with an increased risk of heart failure, myocardial infarction, stroke, and kidney disease (4). That, combined with increased survival in Argentine patients with cancer due to improved cancer diagnosis and treatment, results in an increased incidence of treatment-related acute and late cardiac adverse effects. This highlights the need to focus on measures to decrease modifiable cardiovascular risk factors and to enhance cooperation among cardiology and oncology specialists in the coordination of care for patients with cancer and survivors to more effectively manage a growing population with CVD (4,5).

## CARDIO-ONCOLOGY IN ARGENTINA

For many years, the Argentine cardiologists' approach to oncology was limited to the echocardiographic evaluation of patients receiving anthracyclines. This was mainly based on the limitation of the different existing cardiotoxicity definitions, focused primarily on left ventricular dysfunction (6-9). In this historical context, one of the main cardiology societies published the first national cardiotoxicity guide (1).

In the 1980s, the "Ángel H. Roffo" Institute of Oncology, under the University of Buenos Aires, was the first medical institution to develop a cardiology program specifically aimed at evaluating oncology patients. The Roffo Institute program was developed with the purpose of conducting cardiology assessments for all patients before the start of their cancer therapies and during their follow-up. Subsequently, other institutions, among them the Alexander Fleming Institute and the Italian Hospital, have been noteworthy for developing cardiology programs specifically for patients with cancer.

In 2015, a group of cardiologists, hematologists, oncologists, and pulmonologists, with the institutional support of the "Ángel H. Roffo" Institute of Oncology, the Labor Médica Civil Association, and Dr. Daniel Lenihan, MD, founded the first multidisciplinary association in Argentina called the Association of Cardio-oncology of the Argentine Republic

(Asociación de Cardio-Oncología de la República Argentina) (ACORA), which is dedicated to achieving a comprehensive understanding of the potential acute and chronic, late cardiovascular effects secondary to oncologic therapies, serving as a cornerstone for the scientific approach to the new medical discipline in the country. ACORA currently represents the International Cardio-oncology Society in Argentina.

Following the developed guidelines and promotion of scientific activity in the field of cardio-oncology, in 2016, the First Argentine Day of Cardio-oncology was held at the "Ángel H. Roffo" Institute of Oncology, now a leading institution in Argentine oncology. In 2018, the Cardio-oncology Association of the Argentine Republic-International Cardio-oncology Society chapter Argentina held the First Argentine Cardio-oncology Symposium in the autonomous city of Buenos Aires, under the sponsorship of leading scientific oncology and hematology societies, with the presence of prominent international and national guests, including cardio-oncology experts Drs. Daniel Lenihan, MD; Daniela Cardinale, MD; Susan Dent, MD; and Joerg Herrmann, MD. During this event, 185 health professionals attended, of whom 30% were oncologists and hematologists. Importantly, the interest generated by the symposium led multiple national cardiology societies to organize their own scientific cardio-oncology sections.

In 2019, ACORA held the Second Argentine Cardio-oncology Symposium-First International Cardio-oncology Symposium. During this event, 290 health professionals and 184 doctors from 5 Latin American countries participated via streaming. Furthermore, various activities began and continue to be carried out in the national congresses of cardiology and oncology, with participation of different scientific societies. In recent years, both the Ángel H. Roffo Institute of Oncology and the Alexander Fleming Institute have developed fellowship and rotation programs to further promote training and education in the new medical discipline of cardio-oncology. In addition, health institutions from different Argentine provinces have organized their own cardio-oncology units, with the opening of more than 15 cardio-oncology units reported throughout the country. Importantly, the drafting of national cardio-oncology guidelines is currently in process, requiring an interdisciplinary collaborative effort.

At the social level, a number of foundations that are dedicated to assisting oncology and hematology patients, including the Labor Médica Civil Association and ACORA, have developed assistance programs for

## ABBREVIATIONS AND ACRONYMS

**ACORA** = Association of Cardio-oncology of the Argentine Republic (Asociación de Cardio-Oncología de la República Argentina)

**CVD** = cardiovascular disease

cardio-oncology patients. Their programs are dedicated to supporting cardio-oncology patients through free medical assistance, provision of free pharmacological treatments, a psychological support office, and physical activity supervised by kinesiologists, physical education teachers, and medical personnel. In addition, with the support of nursing personnel, telephone monitoring is regularly performed for all patients.

### CARDIO-ONCOLOGY IN ARGENTINA: GROUND GAINED

The introduction, development, acknowledgment, and welcoming of cardio-oncology as a new medical discipline in Argentina led to the need for multiple paradigm shifts: first, that cardiologists internalize the new perspectives of oncology with the advent of new therapeutics, and second, the understanding on the part of oncologists and hematologists of the need for cardiovascular evaluation before treatment and during the follow-up of oncology patients.

The creation of a multidisciplinary scientific society (ACORA) promoted awareness among cardiologists regarding the need to focus on the acute and late cardiotoxicities for which patients with cancer may be at risk; to evaluate and help patients take proper steps to minimize modifiable cardiovascular risk factors; and to welcome working as a team with oncologists, other specialists, and health care providers coordinating oncology patients' care. It also encouraged the formation of working groups to prepare evaluation protocols, to design clinical trials to obtain robust evidence concerning remaining unanswered research questions, and to work together to promote necessary scientific developments. To further such goals, ACORA has developed a collaborative network across Argentina, forming chapters in different regions with references in each of them and currently expanding its network across additional Latin American countries.

### CARDIO-ONCOLOGY IN ARGENTINA: THE FUTURE

The future presents us with multiple challenges in the growing field of cardio-oncology including the following needs:

- Achieving enhanced consolidation of the interdisciplinary work required for the optimal diagnoses and treatment of patients with cancer;
- Establishing a network at the national level that allows synchronized, coordinated efforts and support for professionals in different latitudes of our country;
- Strengthening the collaborative ties between the different scientific societies, which will result in enhanced benefits in our daily work and optimal treatment and results for oncology patients who are already affected by CVD or who may go on to develop acute or chronic cardiotoxicities secondary to their cancer treatment; and
- Continuing with nationwide efforts to work with patients to reduce modifiable risk factors for CVD, including smoking cessation, improved diets, increased exercise under a physician's care, decreased alcohol consumption, and other healthy lifestyle changes.

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