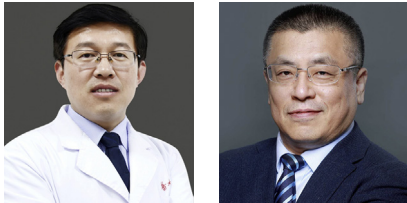


LEADERSHIP PAGE



Working Together to Advance Cardio-Oncology in China



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WHY WE PROMOTE CARDIO-ONCOLOGY IN CHINA

The number of cancer patients and survivors is increasing in China. However, many cancer therapies have short- and long-term cardiovascular (CV) toxicities. The risk of cardiovascular disease (CVD) in cancer patients is substantially higher than the incidence observed in general population (1-4). CV events may occur during anti-cancer therapy or decades after treatment. Once patients receive chemotherapy, radiotherapy, targeted therapy, or immunotherapy, the adverse CV effects may persist over their lifetime. As a result, CVD has become a leading cause of morbidity or mortality in cancer survivors.

CV risk factors and CVD in cancer patients tend to be complex, and neither the cardiologist nor the oncologist can fully manage them alone. In the past, we have paid inadequate attention to this patient population. The clinical needs of CV care of cancer patients are increasing rapidly, and experts from cardiology and oncology must collaborate closely to overcome these complexities and challenges, with the goal of improving CV prognosis in the growing cancer population.

THE MULTIDISCIPLINARY NATURE OF CARDIO-ONCOLOGY

Cardio-oncology lays at the intersection of oncology and cardiology, and is largely focused on the management of CV risk factors and CVD in cancer patients (5). In China, cardio-oncology practice is typically focused on the following: 1) CV toxicities related to anti-cancer therapy; 2) diagnosis and management of co-existent CV risk factors or CVD in

cancer patients as CVD and cancer have many shared traditional risk factors, such as age, tobacco, and obesity; and 3) primary or metastatic cardiac tumors, which are comparatively less common.

The responsibilities of cardio-oncology care providers include the diagnosis and management of multiple potential CV conditions in cancer patients. In our practice, we typically recommend a strategy of comprehensive cardiovascular management, which involves a general CV evaluation before anti-cancer therapy, individualized monitoring and management of CV risk factors and CVD during anti-cancer therapy, and life-long CV follow-up after anti-cancer therapy is completed. We have tried to adapt this strategy in the oncology units of several medical centers in China. As a result, we hope to detect the potential CV effects of anti-cancer therapy earlier so that we can more intensively manage these conditions and ultimately improve the lives of our patients.

CURRENT STATUS OF CARDIO-ONCOLOGY IN CHINA

The incidence rates of CVD and cancer are both increasing in China. As a result, these diseases have become the 2 leading causes of death in our country. Approximately 290 million Chinese patients suffer from CV risk factors or CVD. According to the 2018 Report on Cardiovascular Diseases in China (6), the number of patients with stroke, coronary heart disease, pulmonary heart disease, heart failure, rheumatic heart disease, and congenital heart disease are 13 million, 11 million, 5 million, 4.5 million, 2.5 million, and 2 million, respectively. Hypertension is prevalent in 245 million. CVD-related deaths account for more than 40% of deaths. Meanwhile, it is estimated that

more than 4 million new cases of cancer are diagnosed each year in China. Lung, hepatocellular, gastrointestinal, and breast cancers are the most common.

The field of cardio-oncology started relatively recently in China (7). In 2016, the first conference dedicated entirely to cardio-oncology was held in the city of Dalian, which marked an important point in our history, when Chinese physicians began to focus on the CV care in the cancer population. Since then, the Chinese Cardio-Oncology Conference has been held annually. Efforts from Chinese cardiologists, oncologists, hematologists, imaging specialists, and other scientists are ongoing to promote the new discipline. As the number of epidemiologic studies, clinical trials, and basic science investigations has increased, the pace of scientific development in this new field has accelerated rapidly. Similarly, there are a growing number of clinical units. Currently, there are 31 cardio-oncology medical units, including 22 in general hospitals, 8 in cancer hospitals, and 1 in a cardiovascular hospital, which have been built across 13 provinces nationwide. From our view, a single spark of cardio-oncology has boosted a fire throughout our country.

WE STAND TOGETHER TO ADVANCE CARDIO-ONCOLOGY

With the increasing recognition and the support of numerous cardiologists, oncologists, hematologists, cardiac imaging specialists, and basic research scientists, cardio-oncology has been steadily gaining attention in China (8). In 2019, both the Chinese Society of Cardiology and Chinese Society of Clinical Oncology set up a committee dedicated to cardio-oncology. There are now 15 cardio-oncology working groups throughout the country. These groups focus on promoting the CV health of cancer patients and cancer survivors, as well as promoting clinical trials, developing basic mechanistic investigations, and establishing multidisciplinary training programs for cardiologists specializing in cardio-oncology.

All the members of our specialty society must work together to advance this new field in our country. We

must strengthen awareness and education, to not only the physicians, but also to cancer patients. In China, there are more than 10,000 patients being newly diagnosed with cancer every day. Therefore, the population of cancer survivors is also growing rapidly. We hope to implement a nationwide standardized CV screening program, using available modalities including electrocardiograms, echocardiography, Holter monitors, or cardiac biomarkers to recognize patients at increased risk for CVD. Furthermore, we also look forward to learning, communicating, and collaborating with international cardio-oncologists more closely to serve our patients with the highest quality care, and provide the best training for our clinicians. Our hope is to provide state-of-the-art cardio-oncology care for our patients, to improve not just the quantity of years, but also quality of life.

JACC: CARDIOONCOLOGY IS INVALUABLE, NECESSARY, AND IMPORTANT TO CHINA

To advance this growing field, we need more evidence and greater experience. Experts in the Chinese Society of Cardiology and the Chinese Society of Clinical Oncology are now collaborating in both scientific research and clinical practice. We look to *JACC: CardioOncology* to promote new knowledge—both scientific and clinical—and for this to be platform of shared experiences for us to learn. We look to *JACC: CardioOncology* for inspiration and to help stimulate deeper discussions in the field and in China. It has already been of great value to us, and it will help us improve the clinical care we provide to our patients. We believe it will also serve to increase collaboration across cardio-oncologists and expand the dialogue globally, ultimately benefiting a large, growing population of patients.

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REFERENCES

1. Abe J, Martin JF, Yeh ET. The future of onco-cardiology: we are not just “side effect hunters.” *Circ Res* 2016;119:896-9.
2. Cardinale DM, Barac A, Torbicki A, et al. Cardio-oncological management of patients. *Semin Oncol* 2019;46:408-13.
3. Howard E, Steingart RM, Armstrong GT, et al. Cardiovascular events in cancer survivors. *Semin Oncol* 2019;46:426-32.
4. Bhakta N, Liu Q, Yeo F, et al. Cumulative burden of cardiovascular morbidity in paediatric, adolescent, and young adult survivors of Hodgkin's lymphoma: an analysis from the St. Jude Lifetime Cohort Study. *Lancet Oncol* 2016;17:1325-34.
5. Herrmann J. From trends to transformation: where cardio-oncology is to make a difference. *Eur Heart J* 2019;40:3898-900.
6. Shengshou H, Runlin G, Lisheng L, et al. Summary of the 2018 report on Cardiovascular Diseases in China. *Chinese Circ J* 2019;3:209-20.
7. Zhang Y, Zhang Z, Liu Y, Zhang J. Cardio-oncology in China: we are on the go! *J Am Coll Cardiol CardioOnc* 2020;2:139-43.
8. Liu Y, Zhang YL, Liu JW, et al. Emergence, development, and future of cardio-oncology in China. *Chin Med J (Engl)* 2018;131:2640-4.

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