

EDITOR'S PAGE



Growing, Building, and Defining the Field of Cardio-Oncology for Our Patients



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It has been a challenging year. Amidst ongoing global conflict, which weighs so heavily on us all, I lost 2 very dear patients, whom I had cared for over the past 10 years. Both young women passed away from metastatic disease. I think about them often, and about how their parents, husbands, children, and friends must miss them, and how much I miss them.

I also think about my dear patient in his 50s who has Class IV heart failure secondary to acute anthracycline cardiomyopathy. Although he is in remission now from his cancer, he remains extremely limited secondary to significant heart failure.

At these times, I wish I could do more. I reflect on the tremendous strides we have made over the past 10 to 20 years in cardio-oncology, but I also think about how much more still needs to be done. Cardio-oncology is often referred to as a nascent field. We are still growing, building, and defining ourselves and our communities. I ask myself: *How do we achieve our primary goal—that our patients live longer, healthier lives through augmented, evidence-based, empathic care? What are our priorities?*

- We need to define the epidemiology and basic mechanisms of cancer and cancer therapy-associated cardiovascular disease in the current era. Increasing data support an intersection between cancer and cardiovascular disease¹—but very specifically, in whom does this occur, why does this occur, and what is the global burden of disease? We need to understand what *it is about cancer* that results in increased cardiovascular risk, and move past the description that cancer patients have an increased cardiovascular risk.

- Much of cardio-oncology is fundamentally focused on our need to understand and define the cardiovascular risks of cancer therapies. We need to ensure that our patients can receive their necessary potentially life-saving cancer therapy safely. We need to understand the cardiotoxic risks, the mechanisms of toxicity, when it might occur, and who is at risk for cardiotoxicity globally. Understanding these risks is necessary to inform practical, evidence-based, and cost-effective screening and diagnostic strategies. Defining the cardiovascular risks also needs to be done in the context of the competing risks of cancer and cancer mortality, particularly as it relates to permissive cardiotoxicity.²
- Ultimately, we need to define the individual patient characteristics—be it imaging, biologic, genomic, social, clinical, or other-omic factors that explain and predict cardiovascular risk, again in the context of the competing risks of cancer and cardiovascular disease.
- To define risk, we also need to accurately and precisely phenotype cardiovascular disease. This may ultimately necessitate significant advances in technology, including the use of machine learning and artificial intelligence strategies. With any new technology, there are critical efforts in ensuring quality control in implementation.
- We need to develop and implement innovative cardioprotective strategies³ and understand which patients may derive the most benefit. These need to be feasible,⁴ safe (from a cancer standpoint), and tolerable by our patients. These strategies also need to be tested rigorously, in adequately

powered and controlled trials, designed with clinically meaningful endpoints.

- We need to learn how to implement cardiovascular care globally, ensuring equitable, inclusive, and high-quality care for all.^{5,6} What are the standards of care? If standards are not being met, then why? Although there are many reports that suggest cancer patients are not receiving guideline-directed cardiovascular care, we do not understand why. But we need to, so we can deliver the *best possible care to the right patient at the right time*.

As I reflect on these needs, I remain hopeful because of the growth of our field, the extensive multidisciplinary collaborations, the passion of

the community, the empathic care provided to our patients, and our committed investment in the next generation of physicians, scientists, and care providers. I remain hopeful because of all of you and your dedication to our patients, to science, and to our community.

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