FOREWORD

Special Focus Issue: Cardio-oncology

Future
CARDIOLOGY

Cardio-oncology: a new discipline in medicine to lead us into truly integrative care

“...with an astonishing improvement in cancer survival rates over the past two decades the cardiovascular effects of cancer therapies are becoming increasingly relevant.”

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This themed issue of *Future Cardiology*, guest edited by Daniel Lenihan and Steven Lipshultz, fully introduces the myriad of important clinical practice issues and emerging science that encompasses the newly identified discipline of cardio-oncology, primarily from a cardiovascular perspective. Many existing and emerging cancer therapies have been linked with adverse cardiovascular events, and with an astonishing improvement in cancer survival rates over the past two decades the cardiovascular effects of cancer therapies are becoming increasingly relevant [1].

In the interview in this issue, Parashar discusses the emerging field of cardio-oncology, highlighting both advances and challenges within the field. She focuses on the need for collaboration between cardiologists and oncologists to improve the cardiac health of cancer survivors [2]. Jahangir *et al.* explore the idea that as data on the relationships between lipids, statins and cancer continue to accumulate, the role of cardiovascular specialists may expand from prevention and treatment of cardiovascular disease to interventions

aimed at reducing cancer incidence and mortality [3].

It is increasingly being recognized that cancer therapeutics have unintended cardiovascular toxicity [1]. Codón, Rodríguez and López-Fernández provide insight into cardiotoxicity focusing on the known mechanisms related to cardiac dysfunction and the techniques utilized in the cardiac evaluation of cancer patients [4]. More than 25 different chemotherapeutic agents that have been linked with cardiac adverse events and a number of articles within the issue focus on this topic. Storozynsky overviews the current and emerging strategies for assessment and treatment of chemotherapy-induced cardiotoxicity [5], while Piper reviews chemotherapy-related heart failure and chemotherapeutic agents [6], Fradley and Pinilla-Ibarz look at the arrhythmic complications of tyrosine kinase inhibitors [7] while Salvatorelli, Menna and Minotti focus on the management of anthracycline-induced cardiotoxicity [8]. Patients with cancer who are treated with radiation therapy clearly experience higher rates of

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cardiac events and cardiac mortality. One area where these issues are prominent involves the current treatment of patients with esophageal cancer and this scenario is described in an editorial by Beukema, Langendijk and Muijs [9].

There is a compelling need for improvement in our ability to accurately predict the risk and improve early detection of cardiotoxicity. In the featured opinion article, Barac importantly comments ‘an advancement in this field would provide us with an opportunity to personalize therapy and improve patients’ experience and outcomes’ [10].

With growing evidence suggesting that early prevention and treatment can mitigate the degree of cardiotoxicity, early detection is increasingly important. Khouri *et al.* review the current and emerging modalities for detection of cardiotoxicity, including imaging modalities, functional capacity testing, and serum or plasma biomarkers [11]. Additionally, Collier *et al.* look in depth at the utilization of strain imaging to detect cancer therapeutic-related cardiac dysfunction [12].

A key and emerging theme in cardiotoxicity management is the potential of aerobic exercise training to offset the adverse effects of cancer therapeutics. In this issue, Yu and Jones [13] and Berkman and Lakoski [14] explore this idea.

With improved cancer survival rates, long-term care is becoming increasingly relevant. Mulrooney and Duprez look beyond just measuring blood pressure and left ventricular ejection fraction, in order to improve care for the growing population of cancer survivors [15]. Montoro and López-Sendón explore chronic heart failure among cancer survivors with a focus on prevention and management strategies in this field [16].

In this relatively new discipline, building an adequate and functional cardio-oncology program is associated with significant challenges, including a paucity of practice guidelines, limited research base to help define best practice and lack of reliable funding source. In this issue, Okwuosa *et al.* look at the process of building a cardio-oncology program in a cancer center in the USA [17].

Primary malignant cardiac tumors are rare and associated with a poor prognosis. A proper investigation and planning are crucial to achieve the best possible outcome. Lestuzzi *et al.* discuss the key role of the cardio-oncologist in coordinating the diagnostic approach, and in the follow-up with regards to both the possible relapses and the cardiac toxicity of the therapeutic intervention [18].

In summary, this issue of *Future Cardiology* gives a broad view of the field of cardio-oncology by many of the up-and-coming leaders in this new discipline. I sincerely hope that the articles presented here will encourage thoughtful discussion, engage many institutions in the development of carefully done clinical research to enhance practice and improve the cardiac care of patients with cancer.

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