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Cardio-Oncology: Success Breeds New Challenges, Opportunities

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The burgeoning field of cardio-oncology is a story of success on many different fronts. Advances in medical oncology, including the development of new agents and the development of new ways of combining antineoplastic treatments, have resulted in improved survival rates. These advances have created whole new classes of drugs with unexpected toxicities when given as single agents and when combined with other agents. The improvement in survival, in turn, has allowed the latency of delayed side effects to become manifest in these individuals. Improvements in patient survival also have changed the natural history of some cancers, leading to unusual patterns of metastases. Advances in the field of cardiology have improved our understanding of the mechanisms of cardiomyocyte damage, the physiology of heart failure, and the arrhythmogenicity of drugs. Such advances have led to advances in cardiognostics, imaging, and the prevention and care of heart failure. Moving forward together, these two seemingly disparate subspecialties – medical oncology and cardiology – have forged new bonds and close working relations, a collaboration that has created opportunities to improve the care of our patients in hitherto unanticipated ways. The articles in this issue of *Journal of Patient-Centered Research and Reviews* provide a glimpse into several aspects of this new and exciting field.

The article by Dr. Pizzino and colleagues provides an overview of the new techniques being employed to diagnose and predict cardiac dysfunction.¹ The authors review the pros and cons of various modalities and discuss the pragmatic application of them. Their discussion includes insights into the issues of availability and cost, both of which are important considerations in the real-world use of these modalities.

The article by Dr. Gul and colleagues discusses the unusual presentation of an increasingly more common malignancy, malignant melanoma.² Although clinically manifest cardiac metastases are not common in this malignancy, new treatments such as ipilimumab and vemurafinib have the potential to alter the natural history of this malignancy and render previously uncommon metastatic sites more common.

The discussion of the cardiovascular toxicities of chemotherapeutic agents employed in the treatment of breast cancer, which we have provided on page 133, introduces the



reader to the potential risks entailed in treating one of the more common malignancies.³ It briefly reviews the drugs and the likelihoods of the more frequent cardiotoxicities as well as providing reassurance of the infrequent risks associated with most of these agents.

Rounding out this issue's cancer-related topics, Ms. Waltke provides a discussion of the benefits of rehabilitation and exercise therapy in the management of patients with cancer.⁴ This often-overlooked area is gaining prominence as an adjunct to the treatment of cancer patients, with a growing body of literature to support its benefits. As a national leader in cancer rehabilitation, Ms. Waltke's contributions keep us on the cutting edge of this field.

As guest editors, it is our hope you will gain a greater insight into this exciting area after reading the articles in this issue. We have certainly enjoyed working with the editor-in-chief of *Journal of Patient-Centered Research and Reviews* and its editorial board in putting this issue together.

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