

## Editorial preface to the second issue of 2011

It is my pleasure to commence spring, the season of growth and renewal, with the introduction to the second issue in 2011 of Journal of Cardiovascular and Disease Research. This issue covers a variety of subject matter ranging from invited reviews on the aromatic hydrocarbon receptor (AHR) pathway and cardiovascular disease to the progression of inflammation and diabetic retinopathy, to three original research articles, three clinical case report-based studies, and a review of a book series on heart development and regeneration. We continue to receive submissions that are diverse and novel and hope that our readers continue to use JCDR as their primary resource for the most up to date information in the field of cardiovascular disease research.

The first invited review focuses on the AHR pathway and role in cardiovascular disease (CVD). It is estimated that the majority of cases of hypertension are unexplained. In this review, the author provides a link between AHR signaling and blood pressure regulation, vascular nitric oxide production, cardiac function, and vascular development. The effects of deleting the AHR gene on mouse cardiovascular system development and function are outlined in this review. The AHR signaling pathway shows promise as a potential therapeutic target for CVD prevention and treatment.

In the second invited review, Zhang *et al.* discuss the mechanisms of inflammation leading to diabetic retinopathy, a type of microvascular complication. This is one of the most prevalent complications observed in diabetic patients and a leading cause of blindness in adults in the Western world. In this review, authors discuss the factors that trigger the inflammatory response in diabetic patients and mechanisms leading to retinal inflammation. This review highlights the most current data on the pathological progression of diabetic retinopathy and available treatments.

In the first of the original articles in this issue, Nikoo *et al.* evaluate the effects of right ventricular septal versus apical pacing on plasma B-type natriuretic peptide (BNP) levels. These peptides are released as a response to ventricular stress, and plasma levels are used as a diagnostic marker for heart failure. In this study, BNP levels were measured after right ventricular septal and apical pacemaker implantation, and while an effect of pacing mode was established, the researchers did not observe an effect of pacing site on BNP levels.

In the second original article presented in this issue, Weil *et al.* explore the possibility of a link between short sleep duration and circulating endothelial progenitor cell (EPC) turnover and function. While chronic short sleep duration has been associated with endothelial dysfunction and CVD, an underlying mechanism has not been identified. Samples of EPC were isolated from adults with normal and short sleep duration. While no apparent relationship was observed between short sleep duration and EPC number and function, the authors recommend that future studies use more severe sleep duration categories and evaluate individuals with other disease risk factors.

The third original article in this issue describes a study in which heart rate variability was assessed in cases of childhood anxiety disorders. While heart rate variability has been studied extensively in adults, there has been relatively less attention paid to the younger population diagnosed with anxiety disorders. Sharma *et al.* observed a reduced variability of heart rate in groups with disorders when compared with the control group and suggest that changes in heart rate may lead to an increased risk for cardiovascular disease.

The first case study report in this issue describes a 17-year-old patient with Marfan syndrome, a systematic genetic disease of the connective tissue, and infectious endocarditis complicated by an ischemic stroke. In this report, authors describe the results of a cardiovascular examination, criteria for the diagnosis, therapy, and cardiac surgery, and postsurgical follow-up. The authors suggest that Marfan syndrome be considered in cases of unexplained ischemic stroke occurring in young individuals.

In the second case, Kalyani *et al.* describe an autopsy of an individual with a single dominant left coronary artery.

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<b>Quick Response Code:</b> 	<b>Website:</b> <a href="http://www.jcdronline.com">www.jcdronline.com</a>
	<b>DOI:</b> 10.4103/0975-3583.83032

It is estimated that a single coronary artery is observed in approximately 0.05% of the general population, a condition that may lead to sudden death in young individuals. This case report describes a rare situation of a dominant left circumflex artery and absent right coronary artery. More information on artery pathology may lead to discovery of treatments for affected individuals and may assist in determining the causes of sudden deaths.

In the third clinical case report-based study in this issue, Gokhale *et al.* report the use of stem cell injection during coronary artery bypass graft surgery. Stem cell therapy is gaining attention as evidence accumulates to suggest that there is potential for self-repair of cardiac muscle. Autologous bone-marrow-derived cells are proposed to improve myocardial function and lead to tissue remodeling. In the present case, the autologous bone-marrow-derived mononuclear cell fraction was used. At 12 months after operation, the patient exhibited an improvement in ejection fraction and tracer uptake. The authors caution that there may be a critical therapeutic time window for using stem cell therapy.

We conclude this issue with a review by Chatterjee of a two-volume book set entitled “Heart Development

and Regeneration.” This is a comprehensive resource on cardiac development and tissue renewal with the most current information spanning a breadth of disciplines from molecular to clinical aspects. These books are designed to be a desk reference for researchers and healthcare professionals as well as a tool for educators.

With that, I thank the authors for their contributions to this issue and the editorial staff for their dedication and hard work. And as always, we thank our readers for their continued support and interest in our publications.

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<p><b>How to cite this article:</b> Gilbert ER. Editorial preface to the second issue of 2011. <i>J Cardiovasc Dis Res</i> 2011;2:89-90.</p>
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