PREFACE

Best of Mount Sinai Heart Fellows Symposia

Martin E. Goldman, MD, and Parul U. Gandhi, MD, Guest Editors

This issue of *Annals of Global Health* is dedicated to monographs presented by Mount Sinai Heart cardiology fellows as part of the monthly Anandi L. Sharma Visiting Professorship Program at Mount Sinai Heart in New York City. This symposium dates back more than 20 years and was founded by Dr. Simon Dack, former founding editor of *American Journal of Cardiology* and the *Journal of the American College of Cardiology,* and Dr. Martin E. Goldman. The "Controversies in Cardiology" series was modeled on a program held annually at the American College of Cardiology Annual Meeting in which Dr. Dack would moderate a pro and con debate on a controversial topic in cardiology. Through his relationship with the major figures in cardiology of the day, we were able to inaugurate a similar program at Mount Sinai. Fellows prepare a review monograph on the topic and make a brief oral presentation. After Dr. Dack's passing, the panel discussion was moderated by Dr. Valentin Fuster, Physician-in-Chief and Director of Mount Sinai Heart, whose prestige and reputation continue to attract major international figures in the field of cardiology. Dr. Samin Sharma has underwritten the program in honor of his father, Anandi L. Sharma. This issue of *Annals of Global Health* contains several monographs prepared by fellows in preparation for the Controversies in Cardiology Program.

Dr. Jason Chinitz's article on cardiac resynchronization therapy (CRT) discusses which patients will benefit from coordinated pacing of the heart from both the left ventricle and standard right ventricular lead. Although the class I indications for CRT are for patients with class II or greater New York Heart Association symptoms of heart failure, left bundle-branch block, and QRS duration $\geq$150 msec, only 60% to 70% of this pool of patients respond favorably to CRT therapy. The article also explores other proposed clinical scenarios for which CRT therapy has been investigated.

The next article dealing with heart failure is by Drs. Judith Goldfinger and Ajith Nair and presents pharmacological and mechanical methods to improve cardiac function and prognosis. Cardiac remodeling connotes deleterious expansion, dilatation, and potential thinning that can occur in a diseased heart, and can lead to increased energy expenditure, increased left ventricular strain, mitral regurgitation, and progressive cardiac failure. They discuss medications and trials that have examined pharmacological approaches with angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, and various β-blockers to prevent progression or generate reverse remodeling. Recently, left ventricular assist devices have been used not only as a bridge to eventual transplantation but also as a destination for permanent support. Eventually, some patients may be weaned from left ventricular assist devices if the left ventricle recovers from a transient injury.

Another aspect of heart failure commonly encountered is the cardiorenal syndrome in which progressive renal failure accompanies increasing diuresis, which worsens cardiac output, making fluid removal in heart failure a major challenge. Drs. Matthew Tomey and Jonathan Winston explore the cardiac pathophysiology in chronic kidney disease (CKD) and renal pathophysiology in progressive cardiac disease, and the intersection of the two. The risk factors for CKD are similar to those identified in cardiovascular disease (CVD) including age, hypercholesterolemia, diabetes, hypertension, and smoking. They discuss the homeostasis mechanisms that go awry in CKD, complicating heart disease and pharmacological and mechanical means to prevent its progression or promote its regression.

Heart failure is a growing pandemic and the management of patients with chronic heart failure remains complex. Drs. Parul Gandhi and Sean Pinney elucidate the use of biomarkers to assist with the diagnosis, management, and prognosis in this patient population. Furthermore, they discuss the use of monitoring and telemedicine devices as well as the concept of disease management programs to help improve our current management strategies.

Dr. Jonathan Feig's article on reversal of atherosclerosis evaluates molecular and cellular mechanisms of atherosclerosis and attempts to elute atherogenic apolipoprotein B from the arterial wall. Dr. Feig also speculates on the potential role of high-density lipoprotein on the atherothrombotic plaque itself. The article reviews clinical studies on pharmacological methods of inducing plaque stabilization and potentially plaque regression.

Through the pioneering work of Drs. Valentin Fuster and Rajesh Vedanthan, Mount Sinai Heart has taken a leadership role in addressing the global health challenge of worldwide increases in CVD. They have initiated a project to address one of the more prevalent risk factors for cardiovascular, cerebrovascular, and renal diseases: hypertension. Drs. Vedanthan and Fuster evaluate whether nurses in rural western Kenya can use

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novel electronic tablet-based decision-making support and record keeping to track, treat, and follow patients with hypertension. In Kenya, and many other countries worldwide, only physicians are authorized to treat hypertension. Having nurses take a primary role provides greater access and more personalized medical attention, which should improve compliance and outcome.

Compliance to a medical regimen is a challenge for physicians worldwide. Drs. Brandon Wiley and Fuster discuss the rationale, development, and introduction of the "polypill." CVD is the largest cause of noncommunicable disease-related death worldwide. One of the major challenges is early recognition, diagnosis, and affordable treatment of the risk factors responsible for CVD, specifically hypertension, hypercholesterolemia, and systemic inflammation. Therefore, most of the polypills incorporate aspirin, antihypertensives, and cholesterol-lowering agents. Drs. Wiley and Fuster advocate for a simple polypill for reducing problems with cost, compliance, and adherence worldwide.

The last article in this issue of the journal involves hypertrophic cardiomyopathy (HCM). HCM is the most common cause of sudden cardiac death during athletic competition, as well as the most common genetic CVD. With newer imaging techniques, including better echocardiography and magnetic resonance imaging, patients are being identified before symptoms develop. Drs. Alan Enriquez and Martin Goldman discuss diagnosis of HCM, medical management, implantable defibrillators, and genetic testing in first-degree relatives.

The 8 papers presented represent a spectrum of the involvement of Mount Sinai Heart in diagnosis, management, and prevention of CVD. The program is transmitted live monthly on the heart-talks.org, which is complimentary by signing up. Current and prior programs are archived for your convenience as well.