



Obesity and the Heart: Time for Cardiologists to Enter the Conversation

ISSUE INTRODUCTION

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In 2013 the American Medical Association defined obesity as a chronic independent disease. Yet obesity remains underdiagnosed, undertreated, and often dismissed as a failure of patients' willpower by the majority of healthcare providers, who were never trained to recognize, address, and treat it.

Recent progress in the areas of physiopathology and pharmacology have revolutionized obesity care and, for the first time, have highlighted the role of obesity as a powerful yet modifiable risk factor for cardiovascular morbidity and mortality. This demands that cardiologists become central figures and patient allies in its management.

In this issue, we provide an overview of obesity as a disease, offering key aspects of our current understanding of its pathophysiology and exploring its impact on different facets of cardiovascular diseases. We then review different management strategies. We hope to raise awareness among the cardiovascular community while offering a primer that providers can use to initiate the conversation with their patients, providing sound scientific recommendations if not direct care.

In the opening article, Drs. Aayush Shah, I, and my colleagues offer a review of obesity's clinical and physiological mechanisms. Starting with epidemiological data supporting the impact of the obesity epidemic, we present the current understanding of the complex pathophysiology of the disease, which intertwines neurobiological regulation, genetics, environment, and social determinants of health (SDoH). We then address the impact of obesity on health and suggest a different framework for clinicians interacting with patients with the disease.

Next, Drs. Nishtha Sareen, Krishnaswami Vijayaraghavan, and a diverse, multidisciplinary team of coauthors explore the broad topic of food chain and food policies in the United States (US) as both potential co-causative factors in the current obesity epidemic and also solutions. Their review offers a deep dive on food monopoly, food quality, and resource utilization as well as a look at programs that have attempted to mitigate or change those deleterious impacts. These policies range from federal levels to regional programs, and their benefits and limits are highlighted.

The following section presents the impact of obesity on cardiovascular health and specifically addresses three major aspects: atherosclerotic cardiovascular disease, heart failure, and atrial fibrillation.

Drs. Izza Shahid, Zulqarnain Javed, and colleagues present an excellent review of the mechanisms through which obesity exacerbates the development and progression of atherosclerotic cardiovascular disease, ranging from chronic inflammation to the role of SDoH. It includes environmental risk factors and offers potential solutions to address the latter in order to improve cardiovascular outcomes in the population at large.

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Next Drs. Jonathan Na, Sai Sita Girapati, and Adi Lador explore the relationship between obesity and atrial fibrillation, providing a comprehensive review of recent investigations that have brought a new and better understanding of the interplay between the two, including a discussion on how comorbid obesity should modify the approach to atrial fibrillation treatment.

In the last of the three reviews dedicated to cardiovascular diseases, Drs. Hatem Alansari, Janardhana Gorthi, and coauthors highlight the interconnection between obesity and heart failure and specifically heart failure with preserved ejection fraction. It explores the obesity paradox and the impact of weight loss on the reduction of symptoms associated with heart failure as well as its promising role in disease prevention, especially with use of the most recent drugs.

The articles in the final section present current strategies for managing obesity as a disease. Stemming from the newly emerging understanding of obesity as a chronic, relapsing, and multifactorial disease, it has become clear that its management requires a multidisciplinary approach that must be longitudinal in time and multidimensional in its application. If lifestyle changes remain the core of the approach to obesity management, we must acknowledge that, on average, this will result in limited (2–5%) weight loss, which, although impactful, may need to be supplemented by pharmacological and procedural approaches. More than serving as specific step-by-step guidance for cardiologists, the reviews included here are meant to provide an overview of available options so that, as professionals, we can have informed, appropriate conversations with our patients with comorbid obesity and guide them through the appropriate channels.

In their review of lifestyle approaches to obesity management, Registered Dietitians Ramiro Saavedra and Betsy Ramirez and exercise physiologist Brandon Jay describe current dietary and physical activity approaches to weight loss and cardiovascular health. Importantly, the authors also present a critical section on mental health, which must always be addressed in the context of chronic illnesses and obesity, in particular.

The next article addresses medical management of obesity, with Drs. Calderon Valladares, Aguilera Astudillo, and colleagues reviewing current options for US Food & Drug Administration-approved anti-obesity medications. Undoubtedly this field has seen an incredible expansion over the last few years, with new options coming to market and revolutionizing the landscape both in terms of weight loss efficacy and impact on cardiovascular comorbidities. This article highlights current available medications, with

a focus on drugs with cardiovascular impact, as well as future possibilities currently under study.

Newer tools in the management of obesity also have emerged as technology has evolved, allowing for progressively less invasive interventional approaches. Drs. Ronan Allencherril and Thomas McCarty walk the reader through endoscopic bariatric and metabolic treatments, reviewing current indications, contraindications, and expected results of the latest techniques in the landscape of obesity treatment.

Finally, Drs. Connie Au, Nabil Tariq, and colleagues review the bariatric and metabolic surgery approaches to obesity, providing an historical perspective as well as an overview of newer, less invasive, and more physiologic options. They include data-driven recommendations for appropriate patient selection and outcomes optimizations.

In the Points to Remember column that closes this issue, Dr. Sharon Anderson and colleagues offer a succinct, efficient, and evidence-based checklist for starting a conversation about weight and obesity with patients in the ambulatory setting. This quick reference is applicable in most settings, and we hope it will help increase the likelihood of obesity being addressed by non-obesity medicine-trained physicians in the clinical setting.

Obesity is a chronic, relapsing disease that requires multidisciplinary longitudinal approaches for successful management. The latest medications developed to treat this condition have shown, for the first time, the ability not only to reduce weight but to positively impact cardiovascular outcomes—and more drugs will be coming to market with these promises. It is time we recognize obesity as a critical coplayer in cardiovascular health and familiarize ourselves with its pathophysiology and treatment approaches so we can continue serving our patients to the best of our abilities.

I am incredibly grateful to all of our authors, who contributed their time and expertise to the realization of this issue in the pursuit of advancing awareness regarding obesity as a disease, its root causes, its impact on cardiovascular health, and the strategies to address it. I hope that our readers will find these reviews informative and thought provoking as well as useful for a much-needed change in clinical practice.

GUEST EDITOR BIOGRAPHY

The editorial team of the *Methodist DeBakey Cardiovascular Journal* expresses our thanks to Dr. Eleanor Avenatti for her expertise, guidance, and dedication to curating this insightful issue on obesity and cardiovascular health.

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Dr. Avenatti obtained her MD degree in Italy, at the University of Turin, one of the oldest in her country. She then completed a residency and fellowship in Internal and Emergency Medicine at the same institution, where

she developed a keen interest in clinical research and specifically echocardiography and cardiovascular risk factors management. She then invested five years in clinical research working at Tufts in Boston, MA, Methodist DeBakey Cardiovascular Center in Houston, TX, and the Cardiovascular Research Foundation and Columbia University in New York, NY, before returning to clinical work and completing her US Internal Medicine training and subsequently her fellowship in Cardiac Prevention, both at Houston Methodist, where she now serves as an assistant professor of medicine in cardiology.

COMPETING INTERESTS

The author has no competing interests to declare.

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