
Introduction: Challenges and advances in cardiovascular disease

In cardiovascular medicine, advances in our understanding of disease processes, medical management, and interventional and surgical techniques have gone a long way toward improving the health of patients. But we face challenges and opportunities in how best to apply these discoveries to improve the quality of care we provide and do so without driving up costs or wasting resources.

This *Cleveland Clinic Journal of Medicine* supplement on cardiovascular disease aims to illuminate some of the challenges and advances in the management of cardiac amyloidosis, coronary artery chronic total occlusion, venous thromboembolism, implantable device infection, and lung transplant. In so doing, my colleagues present insights into *which* advances will benefit *which* patients to improve quality and contain cost.

Cardiac amyloidosis, sometimes called stiff heart syndrome, is the most common restrictive cardiomyopathy. Amyloid deposits in the heart muscle can affect conduction of electrical signals leading to arrhythmias and heart block. Joseph P. Donnelly, MD, and Mazen Hanna, MD, present a comprehensive review of cardiac amyloidosis and share exciting advances in the detection and treatment of this condition and clues to identify patients who may be affected by this often overlooked condition.

Also in this supplement, Jaikirshan Khatri, MD, and colleagues review the use of percutaneous coronary intervention (PCI) for patients with coronary artery chronic total occlusion (CTO). Though CTO is often considered benign, the affected myocardium is ischemic and patients with significant ischemic burden may benefit clinically from CTO PCI. A technically demanding procedure, CTO PCI success rates are highly operator-dependent.

John R. Bartholomew, MD, presents information about the management of venous thromboembolism (VTE) including recent changes to treatment guidelines. Patients with VTE require immediate treatment with anticoagulation therapy. Recent changes to treatment guidelines now recommend direct oral anticoagulants for patients with VTE and no cancer. Direct oral anticoagulants are an important new option for patients and further study would be beneficial to strengthen the level of evidence regarding which anticoagulation therapy is best for which patients.

Cardiac implantable electronic devices (CIEDs) improve quality of life and longevity for increasing numbers of patients with cardiac disease. Cameron T. Lambert, MD, and Khaldoun G. Tarakji, MD, MPH, discuss the types of CIED infections that occur in about 1% of patients receiving a first CIED. Prompt diagnosis improves the success of antibiotic therapy, device removal, and resolution of the infection.

Finally, Kenneth R. McCurry, MD, and Marie M. Budev, DO, MPH, discuss lung transplant for patients with end-stage lung disease. Lung transplant may be an option to extend survival and improve the quality of life for some patients. In this article, the authors review the selection criteria for lung transplant candidates, including when physicians should refer patients to lung transplant centers for evaluation and placement on the lung transplant waiting list.

We hope this supplement is a useful review of some of the challenges and advances in cardiovascular medicine and is beneficial to you and your clinical practice.



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