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PREFACE

Mechanical Circulatory Support



Brian O'Neill, MD, FACC

Editor

The utilization of mechanical circulatory support (MCS) has increased in the United States over the past 10 years. MCS initially primarily consisted of the intra-aortic balloon pump and surgical implantation of extracorporeal membrane oxygenation, but there are now an ever-increasing number of devices with unique characteristics in terms of the amount of hemodynamic support provided, as well as the option for isolated right- and left-sided support. Moving forward from the need for surgical cutdowns for the implantation of these large-bore devices, the routine use of ultrasound-guided access with small-gauge micro-puncture needles has facilitated the transformation of these procedures to a totally percutaneous one. The field of structural heart disease has helped to usher in this era with the need for reliable access and closure of large-bore access to allow delivery of transcatheter aortic valve replacement therapy.

As many patients have peripheral arterial disease, we continue to seek out new techniques to allow perfusion to the leg during hemodynamic support, and to be able to better manage vascular complications when they may occur. In those patients who are eligible, the use of vascular closure devices has allowed for the safe explant during the

same setting or on a different day when the device is no longer required.

We have come to realize the importance of MCS outside of those patients solely with cardiogenic shock. The fields of high-risk percutaneous coronary intervention and structural heart disease have benefited from the advances in MCS to allow us to treat these higher-risk patients who may not have been candidates for anything before. We have also now gained more experience in intermediate-term MCS for those patients who may require a long-term durable ventricular assist device or heart transplant. In this issue of *Interventional Cardiology Clinics*, we hope to touch on each of these issues and offer a single source of information for those who have an interest in MCS. On behalf of my coauthors, we hope you enjoy the issue.

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