Liver transplantation (LT) candidates today are older, have greater medical acuity, and more co-morbidities including cardiovascular disease than before. Steadily rising Model for End-Stage Liver Disease (MELD) scores at the time of transplant, resulting from high organ demand, reflect the escalating risk profiles of LT candidates. In addition to advanced age and the presence of co-morbidities, there are specific cardiovascular responses in cirrhosis that can be detrimental to the LT candidate. Patients with cirrhosis requiring LT usually demonstrate increased cardiac output and a compromised ventricular response to stress, a condition termed cirrhotic cardiomyopathy. These cardiac disturbances are likely mediated by decreased beta-agonist transduction, increased circulating inflammatory mediators with cardiodepressant properties, and repolarization changes. Low systemic vascular resistance and bradycardia are also commonly seen in cirrhosis and can be aggravated by beta-blocker use. These physiologic changes all contribute to the potential for cardiovascular complications, particularly with the altered hemodynamic stresses that LT patients face in the immediate post-operative period. Post-transplant reperfusion may result in cardiac demise due to a multitude of causes, including arrhythmia, acute heart failure and myocardial infarction. Recognizing the hemodynamic challenges encountered by LT patients post-operatively, and how these responses can be exacerbated by underlying cardiac pathology, is critical in developing recommendations for the preoperative risk assessment and management of these patients. The following provides a review of the cardiovascular challenges in LT candidates, as well as evidence-based recommendations for their evaluation and management.

Biography

Dr. James D. Flaherty is a Cardiologist and Assistant Professor of Medicine at the Feinberg School of Medicine of Northwestern University in Chicago. He is board certified in Interventional Cardiology and Advanced Heart Failure & Transplant Cardiology. He serves as the Medical Director of the Coronary Care Unit at Northwestern Memorial Hospital. His research interests include the cardiovascular evaluation and management of solid organ transplant candidates.