

Anesthetic Considerations in Transplant Recipients for Nontransplant Surgery

Joshua Herborn, MD^{a,*}, Suraj Parulkar, MD^b

KEYWORDS

- Solid organ transplantation • Organ transplantation physiology
- Intraoperative monitoring • Anesthesia methods • Perioperative care

KEY POINTS

- With an increasing number of solid organ transplants and improved long-term survival outcomes, more posttransplant patients will be presenting to the operating room for nonspecific surgery.
- A comprehensive preoperative examination and thorough understanding of the posttransplant physiology is essential in protecting graft function in the perioperative period.
- All types of anesthesia, including general and regional techniques, have been used safely in patients after solid organ transplantation.
- Intraoperative monitoring and invasive access should be dictated by patient's medical status and surgical procedure.

ANESTHETIC CONSIDERATIONS IN TRANSPLANT RECIPIENTS FOR NONTRANSPLANT SURGERY

Organ transplantation has changed and saved many lives, but it requires significant resources from the medical community, including prescription medications, follow-up appointments, and diagnostic procedures, some being quite invasive (cardiac catheterization, organ biopsies, etc). As successful as organ transplantation may be, it is not entirely curative and significant hurdles remain for the posttransplant recipient. The pathophysiologic process that caused the primary organ dysfunction may have other deleterious effects on other organ systems.

Disclosure Statement: The authors have no relevant financial or nonfinancial relationships to disclose.

^a Department of Anesthesiology, Northwestern University Feinberg School of Medicine, Chicago, IL, USA; ^b Department of Anesthesiology, Northwestern University Feinberg School of Medicine, 251 East Huron Street, F5-704, Chicago, IL 60611, USA

* Corresponding author. 1523 N Mohawk, Unit 4, Chicago, IL 60610.

E-mail address: Jherborn@nm.org

Anesthesiology Clin ■ (2017) ■–■
<http://dx.doi.org/10.1016/j.anclin.2017.04.009>

anesthesiology.theclinics.com

1932-2275/17/© 2017 Elsevier Inc. All rights reserved.

The United Network for Organ Sharing (UNOS) reported that 30,974 solid organ transplants were performed in the United States in 2015. From 1988 to 2016, there were more than 403,614 kidney, 147,128 liver, 65,433 heart, and 33,148 lung transplants according to the Organ Procurement and Transplant Network. As the number of solid organ transplants increases and patient survival improves, it will become more common for these patients to present for surgery, even at nontransplant centers. Many recipients will present with medical problems unique to the transplant and important steps are required to keep the transplanted organ functioning.

IMMUNOSUPPRESSION

Immunosuppression is critical in the prevention of an immune-mediated rejection of the transplanted organ and pharmacologic advances are directly responsible for the improvement of graft and patient survival. The regimen of these medications must balance their immunosuppressant effects of preventing organ rejection with deleterious actions of infection, malignancy, bone marrow suppression, and organ-specific side effects. Specific immunosuppressant medications are discussed in Curtis D. Holt's article, "[Overview of Immunosuppressive Therapy in Solid Organ Transplantation](#)," in this issue.

PREOPERATIVE EVALUATION

A comprehensive preoperative evaluation is instrumental in preparing the transplanted patient for surgery. A thorough history and physical examination should specifically focus on graft function. Laboratory tests have the potential to provide critical information about the functional status of the allograft, and obtaining results within 3 months of the surgical procedure is advisable in all but the most low risk of surgical procedures. Blood urea nitrogen and creatinine levels, urine albumin, and calculation of the glomerular filtration rate are useful measurements to evaluate renal function in renal transplant recipients or those on significant immunosuppressive therapy. Prothrombin time, serum bilirubin, albumin, and standard liver enzymes should be obtained for liver transplanted patients. The biomarkers cystatin C and troponin T are increased in patients with reduced left ventricular ejection fractions, although brain natriuretic peptide does not display prognostic power.¹ Any significant worsening of laboratory values should prompt an evaluation made by the appropriate members of the posttransplant medical team.

The 2014 American College of Cardiology/American Heart Association Guidelines for Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery² recommend patients with greater than 4 metabolic equivalents or functional capacity (walking up 1 flight of stairs without symptoms) proceed to surgery without further testing, irrespective of major cardiac risk factors. For those with a functional capacity of less than 4 metabolic equivalents or whom cannot be evaluated, clinical and surgical risk factors determine cardiac workup. Recipients may have an overall increased risk of atherosclerotic heart disease after transplantation³ and it should be considered as an additional risk factor. A history of heart failure or impaired cardiac contractility in the setting of procedures that involve fluid shifts should prompt ventricular function evaluation.

The most recent posttransplant medical evaluation should be available when transplant recipients present for surgery. Specifically, overall graft function, changes in immunosuppressive medication, history of rejection episodes requiring steroid or potent immunosuppressive treatment, and relevant objective data (biopsies, cardiac catheterization, gastrointestinal procedures) should be included.

Download English Version:

<https://daneshyari.com/en/article/5580503>

Download Persian Version:

<https://daneshyari.com/article/5580503>

[Daneshyari.com](https://daneshyari.com)