

# Anesthetic Management of Pediatric Liver and Kidney Transplantation

Nicholas R. Wasson, MD<sup>a,\*</sup>, Jeremy D. Deer, MD<sup>b</sup>,  
Santhanam Suresh, MD<sup>c</sup>

## KEYWORDS

- Liver • Kidney • Anesthesia • Pediatric transplantation • End-stage liver disease
- End-stage renal disease • Pediatric liver transplantation
- Pediatric renal transplantation

## KEY POINTS

- Indications for pediatric liver transplantation may be due to not only to liver failure of varying causes but also due to an underlying metabolic or genetic syndrome, each of which may carry its own set of comorbidities.
- Each phase of the liver transplant procedure has its own unique risks, so careful preoperative planning and vigilant intraoperative management are crucial to the success of the procedure in a child.
- Renal dysfunction exhibits a profound effect on the body's ability to maintain homeostasis and associated comorbidities significantly affect quality of life and survival.
- Anesthetic management of the pediatric patient undergoing renal transplantation is centered on adequate fluid management, adhering to hemodynamic goals, and managing associated comorbidities.



Video content accompanies this article at [www.anesthesiology.theclinics.com](http://www.anesthesiology.theclinics.com).

## INTRODUCTION

For the child undergoing organ transplantation, no one individual alone can provide the care sufficient for a successful outcome. It requires a multidisciplinary team to

---

Disclosure Statement: None.

<sup>a</sup> Pediatric Transplant Anesthesia, Pediatric Anesthesiology, Ann & Robert H. Lurie Children's Hospital of Chicago, Northwestern University Feinberg School of Medicine, 225 East Chicago Avenue, Box 19, Chicago, IL 60611, USA; <sup>b</sup> Pediatric Anesthesiology, Ann & Robert H. Lurie Children's Hospital of Chicago, Feinberg School of Medicine, Northwestern University, 225 East Chicago Avenue, Box 19, Chicago, IL 60611-2605, USA; <sup>c</sup> Department of Pediatric Anesthesiology, Ann & Robert H. Lurie Children's Hospital of Chicago, Northwestern University's Feinberg School of Medicine, 225 East Chicago Avenue, Box 19, Chicago, IL 60611-2605, USA

\* Corresponding author.

E-mail address: [nwasson@luriechildrens.org](mailto:nwasson@luriechildrens.org)

Anesthesiology Clin ■ (2017) ■–■  
<http://dx.doi.org/10.1016/j.anclin.2017.05.001>

[anesthesiology.theclinics.com](http://anesthesiology.theclinics.com)

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

be involved in the care of these often challenging patients. Multidisciplinary teams, consisting of surgeons, anesthesiologists, nephrologists, hepatologists, cardiologists, operating room staff, and pediatric intensivists, among many others, are all important for ensuring good outcomes in this population. Anesthesiologists play an integral part of this perioperative transplant team. One must take into account the complex anatomy, physiology, and special drug pharmacology of these patients when devising an anesthetic plan for these procedures. Careful preoperative evaluation, close intraoperative monitoring, and frequent communication with the surgeon and other medical specialties are all vital to ensuring excellent care in these medically complex and often challenging pediatric transplant recipients.

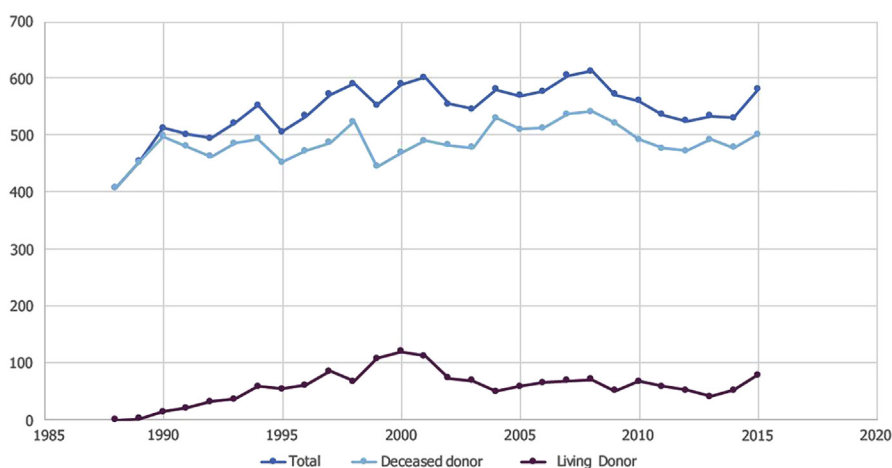
## PEDIATRIC LIVER TRANSPLANTATION

### Introduction

Dr Thomas E. Starzl and colleagues<sup>1</sup> performed the first pediatric liver transplant in 1963 in Denver, Colorado, on a baby with biliary atresia. There are now more than 140 transplant centers in the United States alone. Of those, more than 60 centers in the United States perform pediatric liver transplants. Based on Organ Procurement Transplant Network (OPTN) data, since 1988, there have been more than 15,000 pediatric liver transplants and, currently, about 500 pediatric liver transplants are performed every year in the United States (based on OPTN data as of September 9, 2016) (Fig. 1).

### Indications

There are several unique indications for pediatric liver transplantation, with biliary atresia being the most common. This is followed by those related to toxin or infection, and genetic or metabolic disease (based on OPTN data as of September 9, 2016) (Fig. 2).



**Fig. 1.** Pediatric liver transplants (1988–2015). (Data from Organ Procurement and Transplantation Network (OPTN). Health Resources and Services Administration, US Department of Health & Human Services. Available at: <https://optn.transplant.hrsa.gov/>. Accessed September 9, 2016.)

Download English Version:

<https://daneshyari.com/en/article/5580496>

Download Persian Version:

<https://daneshyari.com/article/5580496>

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