EJT European Journal of Transplantation

2024;2:1-2
DOI: 10.57603/EJT-511

EDITORIAL

ISSUE PREFACE: LIVING DONOR LIVER TRANSPLANTATION

Fabrizio di Francesco[1], Salvatore Gruttadauria[1,2]

[1] Department for the Treatment and Study of Abdominal Diseases and Abdominal Transplantation, Istituto di Ricovero e Cura a Carattere Scientifico-Istituto, Mediterraneo per i Trapianti e Terapie ad alta specializzazione (IRCCS-ISMETT), University of Pittsburgh Medical Center (UPMC), Palermo, Italy; [2] Department of Surgery and Medical and Surgical Specialties, University of Catania, Catania, Italy

It took more than 20 years before the idea of using a living donor liver graft for orthotopic liver transplantation, in 1969 [1], was realized in clinical practice. The impulse in living donor liver transplantation from that moment has always been the same: increase the donor pool and, in particular, in areas of the world where the deceased donor rate is low or absent for an increasingly successful procedure, one that has become a reference for treatment not only of liver diseases, but also of oncological pathologies [2].

In this scenario, recent series have demonstrated, in select cases, the advantages of living donor liver transplantation (LDLT) over deceased donor liver transplantation (DDLT). The logic underlying the transplantation of patients before they become too sick is intuitive, making transplant surgery less demanding. Those principles, however, must be balanced with donor safety [3] and transplant benefit for the recipient, avoiding early, futile transplantation.

What further contributed to creating greater impetus for LDLT was the enormous growth in the field of mini-invasive surgery, characterized by an ever-increasing number of laparoscopic or robotic procedures for donors. Minimally invasive laparoscopic liver resection has evolved greatly over the past few decades and, consequently, experience in minimally invasive liver surgery has been steadily increasing.

For living donor right hepatectomies, the introduction of laparoscopic surgery can be traced back to 2006, when Koffron et al. first reported using the laparoscopy-assisted method [4], while a robot-assisted right lobe living donor hepatectomy was performed in 2012 by Giulianotti et al. [5].

In this issue of *The European Journal of Transplantation* we aim to summarize the global state of living donation for transplantation, not merely the technical aspects and results, but also the numbers, barriers, and strategies for increasing the number of transplants. It should be said that this includes not only the kidney and liver, but any organ for which transplantation from a living person is possible (lung, intestine, pancreas, and uterus).

Thanks to the enthusiasm of colleagues and the resulting number of contributions, the issue has been divided into two sections. The first will provide a full picture, covering historical notes, and minimally invasive technical aspects both in the laparoscopic and robotic fields, with reference to different organs and the most modern oncologic fields of application. The second will report contributions of some of the most active centers in the field.

The major advantage of minimally invasive donor hepatectomy is reduced wound pain and shortened hospital stay, with similar results to standard surgery in terms of donor safety and graft quality through an accurate donor selection and multidisciplinary teams.

By now more than 10,000 living-related liver transplants have been performed worldwide, and will continue in regions where deceased organ donations are scarce. With reduced donor morbidity, also through minimally invasive surgery, which increasingly guarantees encouraging results, publications, and

Received: April 15, 2024
Accepted: April 15, 2024

Correspondence
Fabrizio di Francesco
E-mail: fdifrancesco@ismett.edu

How to cite this article: di Francesco F, Gruttadauria S. Issue preface: living donor liver transplan- tation. EJT 2024;2:1-2. https://doi.org/10.57603/EJT-511

an open discussion of results, a consensus regarding the benefits in this field may soon be reached.
Donor safety has always remained at the center of the donation process. It is desirable that in the future, the use of artificial intelligence and robotic systems, in both surgical procedures and pre-operative diagnostics, will allow further minimization of the risks, with greater benefits in terms of morbidity and mortality.

References

1 Smith B. Segmental liver transplantation from a living donor. J Pediatr Surg 1969;4:126-132.

2 Abdelrahim M. Transplant oncology: an emerging discipline of cancer treatment. Cancers (Basel) 2023;9:15:5337. https://doi.org/10.3390/cancers15225337

3 Lauterio A. Donor safety in living donor liver donation: an Italian multicenter survey. Liver Transplant 2017;23:184-193. https://doi.org/10.1002/lt.24651

4 Koffron A. Laparoscopic-assisted right lobe donor hepatectomy. Am J Transplant 2006;6:2522-2525. https://doi.org/10.1111/j.1600-6143.2006.01498.x

5 Giulianotti PC, Tzvetanov I, Jeon H, et al. Robot-assisted right lobe donor hepatectomy. Transpl Int 2012;25:E5-E9. https://doi.org/10.1111/j.1432-2277.2011.01373.x