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CLINICAL ASPECTS OF INTER VIVOS LIVER TRANSPLANTATION AND ITS IMPACT ON WAITING LIST AND POST-TRANSPLANT RESULTS

Eduarda Tumoli Ferreira
Escola Superior de Ciências da Santa Casa de Misericórdia in Vitória, Vitória, ES, Brazil

Eduarda Endlich de Freitas
Escola Superior de Ciências da Santa Casa de Misericórdia in Vitória, Vitória, ES, Brazil

Júlia Seidel Caetano
Escola Superior de Ciências da Santa Casa de Misericórdia in Vitória, Vitória, ES, Brazil

Luca Schmitd de Oliveira
Escola Superior de Ciências da Santa Casa de Misericórdia in Vitória, Vitória, ES, Brazil

Fernando Henrique Rabelo Abreu dos Santos
Escola Superior de Ciências da Santa Casa de Misericórdia in Vitória, Vitória, ES, Brazil
Hospital Santa Casa de Misericórdia de Vitória, Vitória, ES, Brazil

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INTRODUCTION

Liver transplantation (LT) is a crucial medical intervention and often the only treatment option for patients suffering from end-stage liver disease. Advanced liver diseases, such as cirrhosis, fulminant hepatitis, and liver cancer, often culminate in irreversible liver failure, leaving transplantation as the only viable alternative for the survival of these patients. However, the demand for organs far exceeds availability, resulting in long waiting lists and high mortality rates among those awaiting a transplant. In this context, living-associated liver transplantation (LIT) emerges as an innovative strategy to address this crisis (BUIJK et al., 2023; LIU et al., 2023; ULLAH et al., 2022).

THI involves transplanting a portion of the liver from a healthy, living donor into a recipient who is in urgent need of a new liver. The liver's unique ability to regenerate allows both the graft in the recipient and the liver remnant in the donor to regenerate and resume full function over time. This offers a potentially effective solution to mitigate organ shortages by providing a viable and sustainable alternative to traditional cadaveric transplantation (HIRAK PAHARI et al., 2023; QAZI et al., 2023; LEAL et al., 2012).

OBJECTIVE

To understand the clinical aspects of THI and its impact on the waiting list and post-transplant outcomes.

METHOD

This is a bibliographic review through the Pubmed/MEDLINE and Scientific Electronic Library Online (Scielo) databases, carried out during the month of November 2023. The search strategy applied used the descriptors "Liver Transplantation" AND "Living Donors", resulting in 175 articles. The inclusion criteria in the first platform were works published in the last year, in Portuguese and English, and available as full texts. No filters were used in the second. After applying these criteria, only 8 articles were selected as viable for writing the present work.

RESULTS AND DISCUSSION

Several studies and clinical analyses have demonstrated that THI brings a number of significant benefits. First, the implementation of THI can substantially reduce the waiting time on the transplant list (BESHOY EFFAT ELKOMOS et al., 2022). With THI, the waiting time on the transplant list can be significantly shortened, since the donor organ is available as soon as a living and compatible donor is identified, which can be crucial for the survival of rapidly deteriorating patients (QAZI et al., 2023; LIU et al., 2023).

In addition, THI allows surgery to be planned more strategically, allowing the procedure to occur at a time when the patient is in a more stable health condition. This careful planning can improve the chances of transplant success, reducing complications and improving postoperative recovery. The scheduling flexibility of THI is a significant advantage compared to cadaveric transplantation, which must be performed urgently as soon as an organ becomes available, regardless of the recipient's ideal clinical conditions (VILATOBÁ; ECKHOFF; CONTRERAS, 2024).

Another positive aspect of THI is the minimization of graft ischemia time. Ischemia time refers to the period in which the organ remains outside the body, from its removal from the donor until its implantation in the recipient. Prolonged ischemia times can compromise organ viability and increase the risk of post-transplant complications. In the case of THI, because the donor and recipient are usually in the same surgical center and the surgery is carefully coordinated, ischemia time is minimized, which contributes to better long-term results (BUIJK et al., 2023).

THI also offers an opportunity for recipients with a lower model of end-stage liver disease (MELD) to be considered. MELD is a score used to prioritize patients on the transplant waiting list based on the severity of their liver disease. Patients with lower MELD scores often face a prolonged wait for a transplant, as those in more critical condition are prioritized. However, THI allows these patients, who still have a reasonable quality of life but require a transplant to prevent disease progression, to receive a liver in time, significantly improving their chances of recovery and long-term survival (QAZI et al., 2023).

However, despite its many advantages, THI is not without its challenges and disadvantages. One of the main barriers to THI is ethical in nature. The surgery involves operating on a living, healthy individual, who, unlike a deceased donor, assumes surgical and anesthetic risks. The decision to subject a donor to this procedure must be made with extreme caution, ensuring that the donor is fully aware of the risks and has given their free and informed consent (ULLAH et al., 2022). In addition to ethical issues, there are concerns regarding the size and weight of the liver graft that the recipient will receive. In THI, only a portion of the liver is transplanted, which may not be sufficient to fully meet the metabolic needs of an adult recipient. This is particularly relevant in cases where the recipient has a high metabolic demand, such as in larger individuals or in serious clinical conditions. The smaller graft size may result in suboptimal liver function in the immediate postoperative period, requiring a longer and more complex recovery (BUIJK et al., 2023).

In addition, the rate of surgical complications in THI is higher for both the recipient and the donor, compared to cadaveric transplantation. For the donor, the risks include complications related to hepatectomy, such as bleeding, infections, and problems with liver regeneration. For the recipient, complications may include graft rejection, problems with regeneration, and infections. These factors must be carefully evaluated when considering THI as a treatment option (HIRAK PAHARI et al., 2023).

CONCLUSION

Living-associated liver transplantation (LIT) offers significant benefits to patients awaiting a liver transplant. The ability to reduce waiting times, enable more effective surgical planning, and minimize ischemic time are clear advantages that can result in improved clinical outcomes and longer survival for recipients. In addition, LIT offers a solution to the organ shortage crisis by allowing patients with lower MELD scores the chance to receive a transplant before their condition deteriorates.

However, the success of LIT depends on several factors, including the availability of willing donors and the willingness of these donors to undergo a surgery that, while generally safe, is not without risks. Ethical barriers and potential complications for both donor and recipient are important considerations that must be carefully weighed when planning and performing this type of transplant.

As the practice of IHT continues to evolve, it is critical that medical teams, potential donors, and patients are well informed about the risks and benefits, and that decisions are made based on a careful balance of these factors. With continued advances in medicine and a deeper understanding of liver regeneration processes, IHT may become an increasingly viable and safe option to mitigate the organ shortage crisis and save lives.

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