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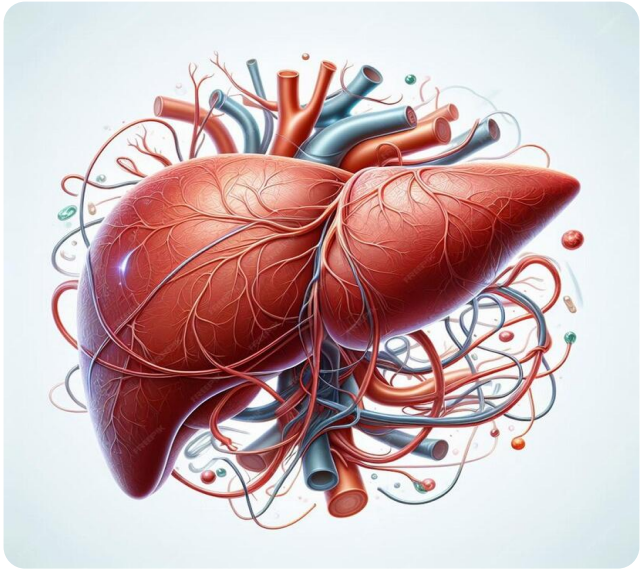
Combined liver and kidney transplantation in children and long-term outcome A single center experience



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Conflict of Interest

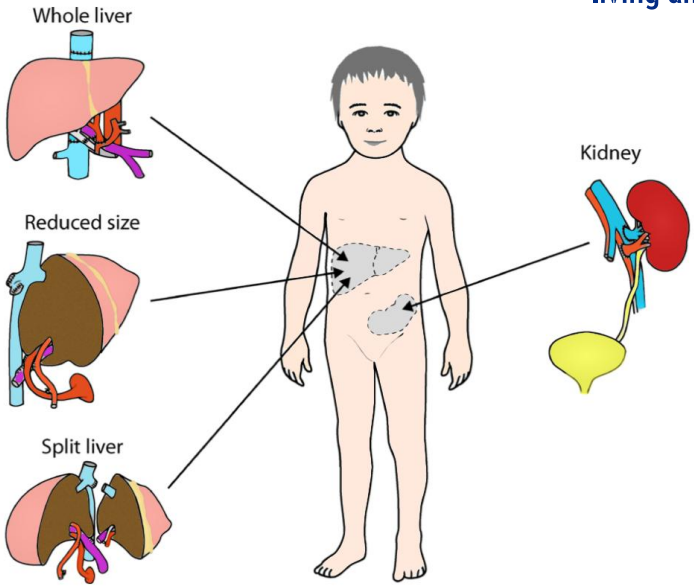
The authors declare no conflicts of interest

Introduction

Simultaneous liver-kidney transplantation (SLKT) stands as an established procedure for treating end-stage diseases that concurrently affect the liver and kidneys.

However, the necessity for such a procedure in pediatric patients presents as a rare scenario, consequently leading to a limited pool of experience and knowledge in this field.

In this study, we contribute our own experience addressing this gap, providing an analysis of simultaneous liver-kidney transplants in children, utilizing both living and deceased adult donors.

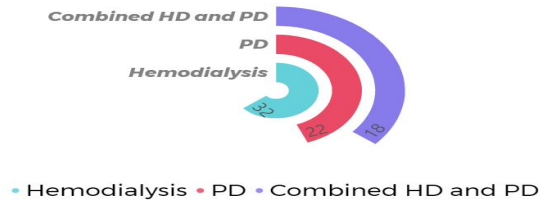


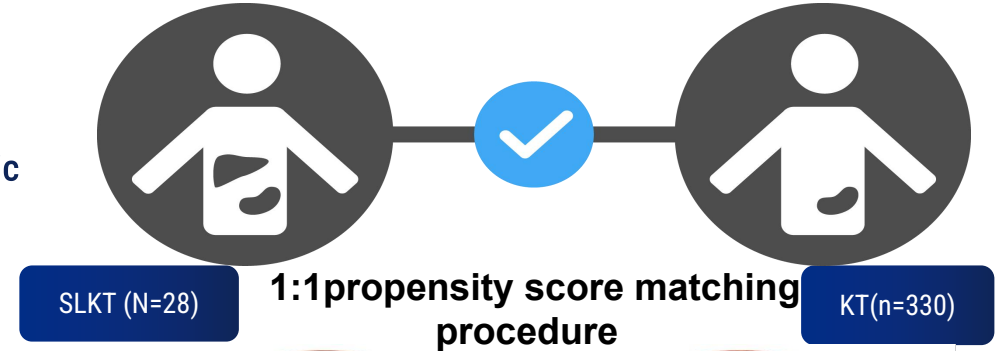
Patients and methods

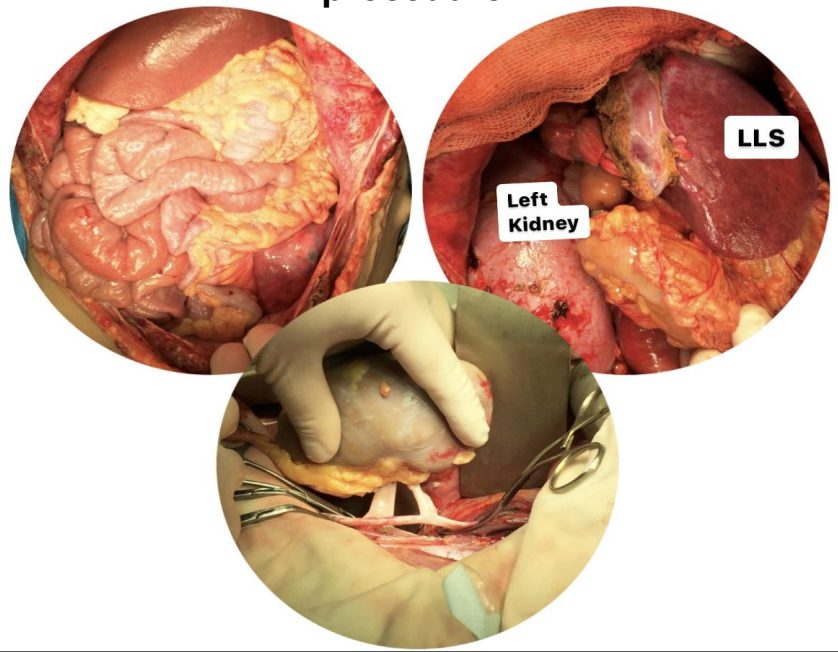
A retrospective single-center study involved 28 pediatric patients who underwent CLKT between 2008 and 2023. Controls were matched to the following criteria, including age, follow-up, and similar immunosuppression regimen, achieving a 1:1 ratio for comparison. Survival analyses with Kaplan-Meier curves and log-rank tests were performed.

Hepatic grafts were represented by the right hepatic lobe ,the left lobe , the left lateral section and the whole liver

Kidney replacement therapy

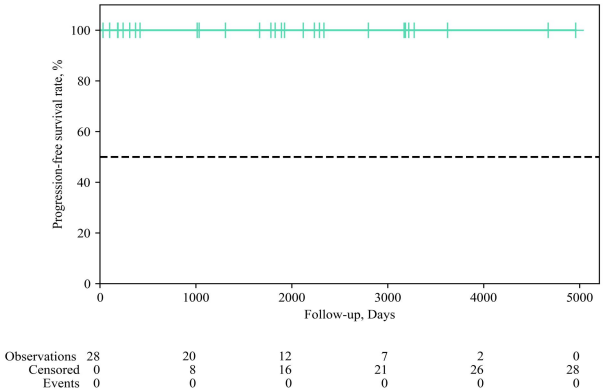


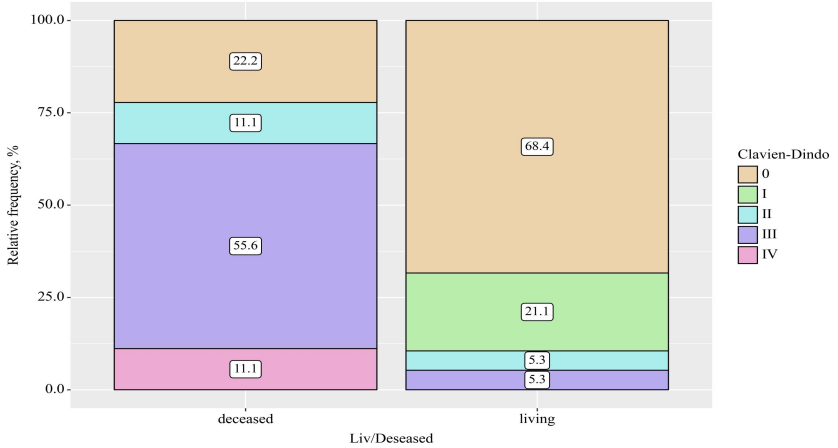




Results

- The follow-up period ranged from 1 to 166 months.
- No mortality was observed during the follow-up period. Complications greater than grade II were more common in recipients of deceased donor CLKT (21% vs 77%; P = 0.028).
- All patients are currently alive, with one patient requiring kidney retransplantation due to BK polyomavirus nephropathy.
- All living donors resumed normal life post-donation.
- Kidney graft survival rates for isolated kidney transplant (KT) patients were 93%, 91%, and 88% at 1, 5, and 10 years respectively (p = NS).
- A single acute rejection episode was noted in the CLKT group, as opposed to six episodes in the isolated KT group.
- A significant decline in estimated glomerular filtration rate (e-GFR) was observed in the KT group compared to the CLKT group 5-10 years post-transplant.





Conclusion

Our study affirms the efficacy and safety of CLKT for pediatric patients experiencing concurrent end-stage liver and kidney diseases. Demonstrated lower rates of rejection and improved mean e-GFR at 1, 5, and 10 years post-transplant in the CLKT group attest to the effectiveness of this approach and its potential to deliver superior long-term survival and immunological advantages.