

Review of: "Biliary Complications Following Liver Transplantation: The First Single-Center Tunisian Experience"

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Potential competing interests: No potential competing interests to declare.

In this paper, the authors review the experience of the first adult liver transplantation center in Tunisia and analyze biliary complications. Over a 21-year period (1999-2020), 49 LTs were performed in 47 patients, including 37 (or 39?) deceased donor LTs and 10 living-related LTs. Patient and graft survival are not mentioned. Biliary complications occurred in 18 patients (38%). Potential risk factors are analyzed.

This series reports a limited number of patients transplanted over a 21-year period in Tunisia. I think this material cannot lead to robust conclusions on biliary complications after LT in general. However, this series is interesting since it highlights the difficulties in launching an LT program in a middle-income country. The current methodology is poor and needs complete revision.

My remarks and suggestions are the following:

1. Please present the whole series and the general context: organisation of care (free access to public hospitals and post-operative medications), indications for LT, origin of the graft, work-up in the patients and living-related donors, standard surgical technique, post-operative care, and organisation of follow-up.
2. General results: 49 LTs in 47 patients, patient and graft survival, with Kaplan-Meier curves, and in the survivors, please mention the duration between the last news and the study endpoint (ratio of surviving patients with more than 2 years' loss of follow-up).
3. The separation between "early" and "late" biliary complications seems artificial and not relevant in such a small series. The analysis could be presented as:

Risk factor	All series	Biliary complications +	Biliary complications -	p
Patients characteristics: gender, age, weight, indication for LT, MELD, ...				
Graft characteristics:				
Cadaveric, LRLT, anatomic type, GBWR, ischemic time, ABO mismatch, ...				
Surgical technique : bilio-biliary, Roux en Y, ...				
Post op surgical complications : Bleeding, hepatic artery thrombosis, portal vein thrombosis, ...				
Post operative medical complications: CMV primo-infection or reactivation, ...				
Final outcome				
Graft survival				
Patient survival				
Number of reoperations				
% of living patients lost to FU				

For clarity, continuous data could be presented as median (range).

4. The outcome in the living donors should also be mentioned: Length of hospital stay, complications, survival.

5. Discussion: This series is too small and over a too long time period to allow robust conclusions on biliary complications in general. However, a detailed analysis of the results (even if they are lower than international standards) is interesting and relevant, especially in identifying strengths, difficulties, and pitfalls in launching an LT program in the Tunisian context. The paper could highlight that it is the first adult LT program in Tunisia (and could mention that another program is running for children in Monastir). It could analyse the strengths (good level of public Tunisian medicine allowing such complex procedures in the public hospital, free access of patients to post-operative drugs including immunosuppressive drugs, ...) and list the difficulties (poor access to deceased donor grafts, ...). It would be fair to mention public funding (in some countries, patients have to pay everything), the multidisciplinary team (medical colleagues, radiologists, pathologists, ...), the collaborations with public institutions (CNPTO, ...), the training of the surgeons abroad. It would be fair to mention and thank international colleagues who helped in the performance of these operations, especially LRLTs. Finally, the paper could mention that in a 12 million people country with public funding of LT, planification of care is needed to avoid scattering experience and wasting resources.

6. The conclusions could be that launching an LT program accessible to all patients in a middle-income country is extremely difficult and needs sustained efforts, a strong multidisciplinary team, support of public institutions, and international collaborations.