



EVALUATING LIVER TRANSPLANT OUTCOMES FOR PATIENTS TRANSPLANTED FOR NONALCOHOLIC STEATOHEPATITIS



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Introduction

- Nonalcoholic fatty liver disease (NAFLD) is now the most common cause of chronic liver disease.
- Liver damage in NAFLD leads to nonalcoholic steatohepatitis (NASH), which can progress to cirrhosis.
- As NAFLD and NASH cirrhosis rates continue to rise, it is important to evaluate outcomes of NASH liver transplant patients.
- Long-term outcomes and overall survival of NASH liver transplant patients has yet to be definitively determined.

OBJECTIVE

- Assess the short- and long-term outcomes of liver transplant in patients with end-stage liver disease from NASH.

METHODS

- Single-center retrospective study
- All patients who underwent a liver transplant at a metropolitan hospital in Dallas, Texas from 01/2010 to 12/2020.
- Demographic, clinical, and transplant-related outcomes were collected from the EMR, an internal transplant database, and the UNOS database.
- Patients were stratified into two groups based on the etiology: NASH or non-NASH.

Results

- 677 patients underwent a liver transplant from 2010 to 2020, of which 112 (16.5%) for NASH, and 565 (83.5%) for non-NASH.
- The frequency of NASH-associated liver transplants increased throughout the study period from 12.9% in 2010 to 33.9% in 2020.
- The mean age of NASH patients was higher than the non-NASH patients (59.3 (9.3) vs 56.0 (10.0) years; $P < 0.002$).
- Caucasians and Hispanics had higher odds of having a NASH-related transplant compared to African Americans (OR = 4.94; 95% CI = 1.51 – 16.13 and OR = 8.33; 95% CI = 2.49 – 27.90).
- One and three-year patient survival was lower in patients transplanted for NASH compared to non-NASH (89.2% vs 92.2% and 83% vs 87.2%, respectively), however statistical significance was not reached.
- Statistically significant differences were not observed for hospital length of stay, MELD scores, one and three-year patient survival, one and three-year graft survival.

	NASH n=112	Non-NASH n=565
Age at Transplant (Median)	59 (55-67)	56 (51-63)
Sex Female (%)	50.0	33.8
BMI at Transplant	30.1	28.8
MELD at Transplant (Median)	25 (18-32)	23 (15-31)
Diabetes at Transplant (%)	53.5	28.8
Race (%)		
White	60.7	60.8
Black	2.6	13.2
Hispanic	35.7	21.2
Asian	0.8	4.6
Organ (%)		
Liver	80.3	89.5
Liver & Kidney	19.6	10.4
1 Year Patient Survival (%)	89.2	92.3
3 Year Patient Survival (%)	83.0	87.2
1 Year Graft Survival (%)	97.3	95.9
3 Year Graft Survival (%)	97.3	95.2
LOS in Days (Median)	10 (7-14)	9 (7-14)

Table 1. Comparison of NASH and non-NASH patient demographics and transplant outcomes.

Conclusion

- There was a substantial rise in NASH cirrhosis-associated liver transplants from 2010 to 2020 that coincides with the obesity epidemic.
- Patients transplanted for NASH are much more likely to require a combined liver & kidney transplant (19.6% vs 10.4%).
- NASH patients are likely to have cardiometabolic related comorbidities that can make post-transplant care difficult, which may lead to decreased patient survival.
- Careful patient selection prior to transplantation remains critical in maintaining acceptable graft outcomes and overall survival.

DISCLOSURES / CONTACT

- No additional funding was provided for this study and the authors have no conflicts to declare.
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