



Post-operative nutrition care of liver transplant recipients – a retrospective audit of nutrition initiation and diet upgrade practices.

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Introduction

Nutritional management leading up to liver transplantation can be complicated by malnutrition and comorbid obesity¹.

Evidence-based guidelines recommend that nutrition is initiated within 12-24 hours post-operatively to reduce infection rates².

Research objectives

1. To investigate the association between early nutrition practices after liver transplant and clinical outcomes at the Princess Alexandra Hospital.
2. To explore the relationship between early nutrition practices and obesity at time of transplant.

Methods

- Between January 2018 - June 2020, a retrospective chart audit of post-liver transplant patients captured diet codes ordered from day of surgery until full diet was reached.
- Nutrition initiation was defined as the commencement of free fluids or full diet. Obesity was defined as body mass index >30kg/m² (using pre-surgical dry weight).
- Clinical outcomes included infectious complications, 30-day readmission and length of stay (LOS).
- Fisher's Exact test was used to assess differences between clinical outcomes and a) patients meeting and not meeting guidelines and b) obese and non-obese patients. Unpaired t-tests were used to compare feeding practices between obese and non-obese patients.

Results

Eighty-four patients (73% male, median age 54 years; BMI 25.9kg/m²; LOS 12-days) were audited.

Median time to nutrition initiation was 2 days (IQR 1-3) and time to full diet was 3 days (IQR 3-4). On post-operative day 1, 43% remained nil-by-mouth.

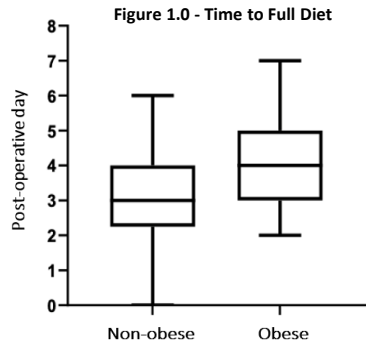
Between those who met (n=21) or did not meet (n=63, 75%) guidelines to initiate nutrition within 12-24 hours, there were no significant differences in:

- infectious complications (5% vs 13% p=0.44)

- median LOS (11-days [IQR 8-15] vs 12-days [IQR 10-17], p=0.06)
- 30-day readmission rate (24% vs 17%, p=0.53).

Obese patients (24%) were slower to reach full diet compared to non-obese (4 days [IQR 3-5] vs 3-days [IQR 2.3-4], p=0.003), as seen in Figure 1.0.

A higher proportion of obese patients were re-admitted within 30-days (40% vs 13% p=0.02).



Discussion

An evidence-practice gap for early feeding was identified, however no associations with detrimental clinical outcomes were identified.

It is apparent that initiating nutrition and upgrading diets after liver transplant is not standardised.

Limitations

A greater sample size may be required to identify associations between nutrition initiation and clinical outcomes. Multiple factors are likely to be contributing to the clinical outcomes seen in the obese patient group.

Conclusion

Nutrition provision after liver transplant is delayed. Obese transplant recipients may be vulnerable to slower diet upgrades and higher 30-day readmission rates.

References

1. Montano-Loza, A.J., et al., Severe muscle depletion predicts postoperative length of stay but is not associated with survival after liver transplantation. *Liver Transplantation*, 2014, 20(6): p.640-648.
2. Plauth, M. ESPEN guideline on clinical nutrition in liver disease. *Clinical Nutrition* (2018).

