

Predictors of 30-Day readmission with *Clostridioides difficile* after Liver Transplant Surgery

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INTRODUCTION

- Liver transplantation (LT) is a definitive therapy of fulminant liver failure with promising outcomes.
- It is known to have readmission as a common postoperative complication.

PURPOSE

- We aim to study the readmissions after LT specific to *Clostridioides difficile* infection (CDI).

METHODS

- We used the National Readmission Database (NRD) for the year 2018 to identify adult patients readmitted within 30 days after an index admission for LT.
- All diagnoses and procedures were identified using ICD 10 codes.
- We identified 30-day readmission rate specific to CDI, mortality, healthcare related utilization resources and independent predictors of CDI specific readmission.
- We compared patient demographics, diseases, admission/discharge facility factors between those with and without readmission. Risk factors for CDI readmission were calculated using binary logistic regression.

RESULTS

- A total of 6,888 adult patients underwent LT between January and November 2018, and were alive at the time of discharge.
- 157 (2.3%) of them had CDI during the index hospitalization.
- The 30-day CDI-specific readmission rate was 1.34% (95 cases).
- Only 20% had CDI during index admission.
- CDI readmitted patients were relatively younger (mean age 53.6 vs 55.7 $P < 0.05$), more likely to have chronic renal failure (41.1% vs 26.1%, $P < 0.05$), but otherwise had similar comorbidities (congestive heart failure, obesity, diabetes and hypertension), and hospital characteristics (size, teaching status and location) compared to those without CDI specific readmission.

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Risk of CDI specific readmission after Liver Transplant is low, but length of stay and renal failure seem to be important determinants.

Results Cont.

- They had similar Charlson comorbidity index (mean 6.7 vs 6.6). Patients with readmissions were more likely to be discharged with home health care (51.6% vs 39.3%, $P < 0.05$). Readmitted patients also had longer hospitalization (median length of stay 19 days vs 12 days).
- Independent predictors of 30-day readmission with CDI were LOS >14 days (OR 1.6), chronic renal failure (OR 1.8) and in-patient hemodialysis (OR 1.9).
- The total health-care in-hospital economic burden of CDI readmission was \$15.2 million in total charges and \$3.4 million in total costs. These readmissions accounted for 1,000 cumulative bed days.

CONCLUSION

- Our data shows that following LT, the 30-day CDI specific readmission rate is low but certain factors like prolonged LOS, chronic kidney disease and dialysis requirement could help identify high risk patients.

References

- Mittal, C., Hassan, S., Arshad, S., Jeepalyam, S., Bruni, S., Miceli, M., Jacobsen, G., Abouljoud, M., Bajjoka, I., Ramesh, M., & Alangaden, G. (2014). *Clostridium difficile* infection in liver transplant recipients: a retrospective study of rates, risk factors and outcomes. *American journal of transplantation : official journal of the American Society of Transplantation and the American Society of Transplant Surgeons*, 14(8), 1901–1907.
- Sullivan, T., Weinberg, A., Rana, M., Patel, G., & Huprikar, S. (2016). The Epidemiology and Clinical Features of *Clostridium difficile* Infection in Liver Transplant Recipients. *Transplantation*, 100(9), 1939–1943.



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