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Hospitalization and Readmission of Intestinal Transplantation Recipients

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CLINICAL trials of intestinal transplantation have been under way at the Pittsburgh Transplantation Unit since May 1990. The objective of this study was to determine the frequency and cause of hospital readmissions along with the composite length of stay in 28 consecutive small bowel (SB) recipients.

MATERIALS AND METHODS

From May 1990 to December 1992, 34 intestinal transplantations with or without extra-enteric organs were performed at our center. Of these, 1 adult patient died intraoperatively, 4 children died during initial hospitalization, and 1 child died 38 days after discharge. The remaining 28 patients, receiving SB grafts (n = 10), SB and liver (SB/L, n = 14), or multivisceral grafts (MV, n = 4), were discharged from the hospital. Sixteen patients were adults and 12 were children. Inclusion criteria included a minimum 6-month follow-up period after initial hospital discharge. Follow-up ranged from 8 to 35 months with a median follow-up of 14 months. The duration of initial hospitalization, along with the frequency, cause, and duration of each readmission, were analyzed.

RESULTS

There was no significant difference between the adult and pediatric recipients regarding duration of initial transplant hospitalization. MV recipients were hospitalized longer (median, 21 weeks; range, 16 to 28 weeks), than the SB (median, 11.4 weeks; range, 5 to 28 weeks) or SB/L (median, 10.4 weeks; range, 7 to 22 weeks) recipients. Following initial discharge, all patients required 1 or more hospital readmissions, for a total of 163 readmissions during the follow-up period. Median frequency of readmission for adults was 6.5 times for a total of 101 admissions, with a median duration of 7 days. Median frequency of readmission for children was 4.5 times for a total of 62 readmissions, and median duration was 8.5 days. The SB/L recipients were readmitted most frequently (median 6.5 times), while the SB recipients experienced the longest median duration per readmission (11.5 days).

Opportunistic infections were the leading causes of readmission (52 of 163, 32%) of which line sepsis (35 of 52, 67%) and cytomegalovirus disease (CMV; 9 of 52, 17%) were the leading contributing factors. Dehydration from increased stomal output or diarrhea (without evidence of graft rejection or enteritis) occurred on 35 occasions (21%), but was easily treated by rehydration and dose adjustment of antidiarrheal agents. Readmission for treatment of allograft rejection was necessary on 26 occasions (16%). Fifteen readmissions (9%) were for routine follow-up to determine graft function and/or stomal closure. Reasons for the remaining 33 readmissions (20%), were highly variable, and included a number of iatrogenic com-

plications as well as admissions for central catheter replacement.

Adults tended to have a higher readmission rate due to rejection (19% vs 11%) and CMV (9% vs 0%) than children. The pediatric recipients experienced more readmissions due to line sepsis (29% vs 17%) and dehydration episodes (27% vs 18%) than adults. The MV recipients experienced more frequent readmissions due to line sepsis and dehydration episodes than the SB or SB/L recipients, while all readmissions due to CMV disease were in the isolated SB group. Overall, rejection and dehydration readmission rates decreased over time and were lower after 12 months, while the frequency of readmissions due to infectious episodes remained problematic throughout the follow-up period.

CONCLUSIONS

Compared with other solid organ transplants, intestinal transplantation requires longer hospitalization after surgery and more frequent readmissions. The occurrence of intractable diarrhea and high stomal output have been particularly troublesome during the first 3 to 6 months after intestinal transplantation.¹ The SB recipients required fewer hospital readmissions, but the length of stay was much longer than that of composite graft recipients, possibly due to persistent or recurrent CMV enteritis.^{1,2} The MV recipients required frequent readmissions for management of line sepsis and dehydration episodes, most probably due to prolonged intravenous nutritional support during graft adaptation.

These results emphasize the difficulty and complexity of postoperative management of intestinal allograft recipients. Successful intestinal transplantation depends on continuous and careful clinical observation, along with early recognition and prompt treatment of potential postoperative complications. Comprehensive outpatient services are essential to reduce hospital readmissions and to adequately monitor and treat postoperative complications.

REFERENCES

1. Todo S, Tzakis A, Reyes J: Transplantation (in press)
2. Nakamura K, Nalesnik M, Jaffee R: Transplant Proc 25: 1212, 1993

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