Could Patients Undergoing Minimally Invasive Minor Hepatectomy or Distal Pancreatectomy be Managed Through a Future Hospital-at-Home Program? A Retrospective Cohort Study

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Introduction

Hospital at Home (H@H) programs and same-day-discharge are increasingly seen as safe and effective postoperative monitoring for select patients. We define **idle-bed days** as days spent in hospital **without** undergoing diagnostic or interventional procedures.

Early discharge following minor hepatectomy is increasingly seen as safe in select patients[1-3]. The generalizability of those findings for other minimally invasive (MIS) hepatobiliary (HPB) procedures, is unknown.

Hypothesis and Objective

We hypothesized that select HPB patients undergoing MIS HPB surgery could be candidates for early discharge through a H@H program.

Objectives: To characterize which patients could benefit from same day/early discharge and develop a H@H program for select patients undergoing laparoscopic minor hepatectomies (MH) and distal pancreatectomies (DP).

Methods

Retrospective Study: Patients undergoing a MIS MH or DP between 2011-2022 at the JGH were included, excluding major hepatectomies, multivisceral resections, planned or converted to open procedures.

Data Parameters: Patient demographics, indications for surgery, idle bed days vs inpatient bed days and post-op outcomes were collected.

Multiple Regression Analyses were performed to identify predictive factors associated with prolonged hospital stay and postoperative complications.

Results

	Minor Hepatectomy (n=96)	Distal Pancreatectomy (n=50)
Age, mean (SD)	65.0 (±13)	63.4 (±15)
Sex, male (%)	57 (59.0%)	22 (44%)
BMI, mean (SD)	28.7 (±6.0)	26.9 (±4.5)
ASA I II III IV	(n=89) 6 (6.3%) 36 (40.4%) 44 (49.4%) 3 (3.4 %)	(n=49) 4 (8.2%) 22 (44.9%) 21 (42.8%) 2 (4.1%)
Charlson Comorbidity Index	8.2 (±3)	5.0(±2)

Table 1: Patient Demographics

MH Indications:
60.4% Metastatic Lesion
23.7% HCC/CholangioCa
9.9% Gallbladder Ca
4% Benign Disease

DP Indications :
90.4% Pancreatic Cancer
7.7% Metastatic Lesion
1.9% Benign Disease

	Minor Hepatectomy (n=96)	Distal Pancreatectomy (n=50)
OR Time (min), mean (SD)	209 (±127)	241 (±76)
Intraoperative Complications (%)	13 (13.5%)	5 (10%)
Transfusion OR (%)	1 (1%)	1 (2%)
Primary Length of Stay (LOS), mean (SD)	5.27 (±4.4)	7.04 (±6.8)
Total LOS, mean (SD)	5.31 (±4.3)	7.24 (±6.0)
30-day ED Visits (%)	9 (9.4%)	13 (26%)
Clavien Dindo ≥ 2 (%)	18 (18.8%)	9 (18.0%)
Comprehensive Complication Index (SD)	6.08 (±14.9)	6.1 (±10.4)
Total Idle Bed days where patients could have been followed at home (SD)	187 (±3.6)	109 (±4.7)

Table 2: Peri-operative outcomes
*Mortality n=1 in MH cohort, bowel perforation

On multiple linear regression analysis:

prolonged OR times + early Clavien-Dindo complications ≥2 = statistically significant predictors of overall LOS for both MH and DP patients

-LOS was not associated with 30-day ED visits.

MIS Minor Hepatectomy:
-**Main Complications:** Transfusions(13), SSI (4), AKI(3)
-**Main Reasons ED visits:** (n=5 re-admit): UTI(2), Collections(2), Ileus(1)

MIS Distal Pancreatectomy:
-**Main Complications:** SSI(4), Transfusions(2), Chyle Leak(2), Glycemic Control(2), Pancreatitis (2), Fistula (2)
-**Main Reasons ED visits** (n=4 re-admits): POPF(2), Pain(2)

Discussion

- The development of a H@H program following MIS Minor Hepatectomy surgery is both safe and feasible in low-risk MH patients with no POD0/1 complications of Clavien-Dindo classification ≥2, nor prolonged OR times.
- In this 10-year period, an average of 187 idle bed days could have been liberated in the MIS MH sample population = excess resources
- Low-risk MIS distal pancreatectomy patients still require glycemia control optimization not yet feasible within H@H services

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Disclosures

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