

Table 2. Baseline and outcomes across the 5 groups of 300 consecutive patients who underwent laparoscopic liver resection

	Total N=300	Group 1 (1–60)	Group 2 (61–120)	Group 3 (121–180)	Group 4 (181–240)	Group 5 (240–300)	P value
Age, median (IQR), years	64 (14)	61 (18)	65 (13)	64 (10)	67 (15)	64 (17)	0.008
Male sex, no. (%)	195 (65.0)	23 (38.3)	19 (31.7)	22 (36.7)	20 (33.3)	21 (25.0)	0.798
Totally MIS (laparoscopic and robotic), no. (%)	289 (96.3)	51 (85.0)	60 (100)	60 (100)	58 (96.7)	60 (100)	0.001
Laparoscopic assisted (hybrid) LR, no. (%)	5 (1.7)	5 (8.3)	0	0	0	0	0.001
Hand-assisted LLR, no. (%)	6 (2.0)	4 (6.7)	0	0	2 (3.3)	0	0.081
Robotic-assisted LLR, no. (%)	28 (9.3)	6 (10.0)	12 (20.0)	6 (10.0)	4 (6.7)	0	0.005
Previous abdominal surgery, no. (%)	152 (50.7)	23 (38.3)	26 (43.3)	33 (55.0)	37 (61.7)	33 (55.0)	0.011
Previous liver surgery, no. (%)	52 (17.3)	8 (13.3)	8 (13.3)	10 (16.7)	10 (16.7)	16 (26.7)	0.053
ASA score, no. (%)							<0.001
1	13 (4.3)	8 (13.3)	2 (3.3)	1 (1.7)	0	2 (3.3)	
2	196 (65.3)	47 (78.3)	44 (73.3)	40 (66.7)	37 (61.7)	28 (46.7)	
3	90 (30.3)	5 (8.3)	14 (23.3)	19 (31.7)	23 (38.3)	30 (50.0)	
Malignant neoplasm, no. (%)	228 (76.0)	46 (76.7)	48 (80.0)	46 (76.7)	47 (78.3)	41 (68.3)	NC
Median (IQR) tumour size, mm	26 (23)	25.0 (22.0)	23.5 (25.0)	25.0 (23.0)	30.0 (30.0)	27.0 (32.0)	0.375
Huge tumours (≥90mm), no. (%)	23 (7.7)	2 (3.3)	3 (5.0)	2 (3.3)	8 (13.3)	8 (13.3)	0.009
Multiple tumours, no. (%)	62 (20.7)	9 (15.0)	13 (21.7)	15 (25.0)	13 (21.7)	12 (20.0)	0.546
Concomitant surgery other than cholecystectomy, no. (%)	60 (20.0)	8 (13.3)	10 (16.7)	11 (18.3)	17 (28.3)	14 (23.3)	0.053
Major resection, no. (%)	83 (27.7)	14 (23.3)	17 (28.3)	18 (30.0)	19 (31.7)	15 (25.0)	0.716
Traditional major (>3 segments), no. (%)	49 (16.3)	4 (6.7)	13 (21.7)	10 (16.7)	10 (16.7)	12 (20.0)	0.152
Difficult segments (I, IVa, VII, VIII), no. (%)	131 (43.7)	23 (38.3)	26 (43.3)	27 (45.0)	24 (40.0)	31 (51.7)	0.250
Multiple resections, no. (%)	25 (8.3)	4 (6.7)	6 (10.0)	5 (8.3)	5 (8.3)	5 (8.3)	0.883
Median (IQR) Iwate difficulty score	6 (5)	6 (5)	6.5 (5)	6 (5)	6 (5)	6 (4)	0.684

Table 2. Baseline and outcomes across the 5 groups of 300 consecutive patients who underwent laparoscopic liver resection (Cont'd)

	Total N=300	Group 1 (1–60)	Group 2 (61–120)	Group 3 (121–180)	Group 4 (181–240)	Group 5 (240–300)	P value
Iwate difficulty, no. (%)							
Low	59 (19.7)	11 (18.3)	14 (23.3)	11 (18.3)	11 (18.3)	12 (20.0)	0.691
Intermediate	107 (35.7)	22 (36.7)	16 (26.6)	20 (33.3)	22 (36.7)	27 (45.0)	
High	72 (24.0)	15 (25.0)	18 (30.0)	17 (28.3)	15 (25.0)	7 (11.7)	
Expert	62 (20.7)	12 (20.0)	12 (20.0)	12 (20.0)	12 (20.0)	14 (23.3)	
IMM grade, no. (%)							
I, Low	145 (48.3)	29 (48.3)	31 (51.7)	27 (45.0)	28 (46.7)	30 (50.0)	0.524
II, Intermediate	56 (18.7)	13 (21.7)	13 (21.7)	10 (16.7)	11 (18.3)	9 (15.0)	
III, High	99 (33.0)	18 (30.0)	16 (26.7)	23 (38.3)	21 (35.0)	21 (35.0)	
Cirrhosis, no. (%)	77 (25.7)	14 (23.3)	22 (36.7)	11 (18.3)	11 (18.3)	19 (31.7)	0.926
Portal hypertension, no. (%)	18 (6.0)	2 (3.3)	3 (5.0)	1 (1.7)	2 (3.3)	9 (15.7)	0.010
Close margins in malignancy ≤1mm, no. (%)	20 (6.7)	0	1 (1.7)	5 (8.3)	3 (5.0)	11 (18.3)	NC
Open conversion, no. (%)	13 (4.3)	6 (10.0)	3 (5.0)	2 (3.3)	0	2 (3.3)	0.028
Median (IQR) operating time, min	260 (190)	260.0 (216.0)	230.0 (209.0)	240.0 (215.0)	265.0 (220.0)	270.0 (183.0)	0.756
Median (range) blood loss, mL	200 (450)	300 (510)	250 (575)	100 (350)	175 (250)	150 (344)	0.028
Intraoperative blood transfusion, no. (%)	41 (13.7)	14 (23.3)	11 (18.3)	7 (11.7)	4 (6.7)	5 (8.3)	0.003
Pringle manoeuvre applied, no. (%)	94 (31.3)	14 (23.3)	19 (31.7)	20 (33.3)	24 (40.0)	17 (28.3)	NC
Median (IQR) postoperative stay, days	4.0 (4.0)	4.0 (3.0)	4.5 (2.0)	4.0 (4.0)	4.0 (4.0)	4.0 (7.0)	0.209
Postoperative morbidity, no. (%)	76 (25.3)	11 (18.3)	14 (23.3)	18 (30.0)	11 (18.3)	22 (36.7)	NC
Morbidity (grade>2)	25 (8.3)	8 (13.3)	3 (5.0)	5 (8.3)	3 (5.0)	6 (10.0)	0.555
Major morbidity (grade 3b–5)	12 (4.0)	5 (8.3)	2 (3.3)	2 (3.3)	1 (1.7)	2 (3.3)	0.145
Reoperation, no. (%)	5 (1.7)	3 (5.0)	0	1 (1.7)	0	1 (1.7)	0.153
30-day mortality, no. (%)	0	0	0	0	0	0	NC
In-hospital mortality, no. (%)	2 (0.7)	0	1 (1.7)	0	1 (1.7)	0	1.000

ASA: American Society of Anesthesiologists; IMM: Institut Mutualiste Montsouris; IQR: interquartile range; LLR: laparoscopic liver resection; LR: liver resection; MIS: minimally invasive surgery; NC: not computable