



LaLiver Resection: a 17-Year Analysis of Outcomes, Patient Selection, and Changing Trends

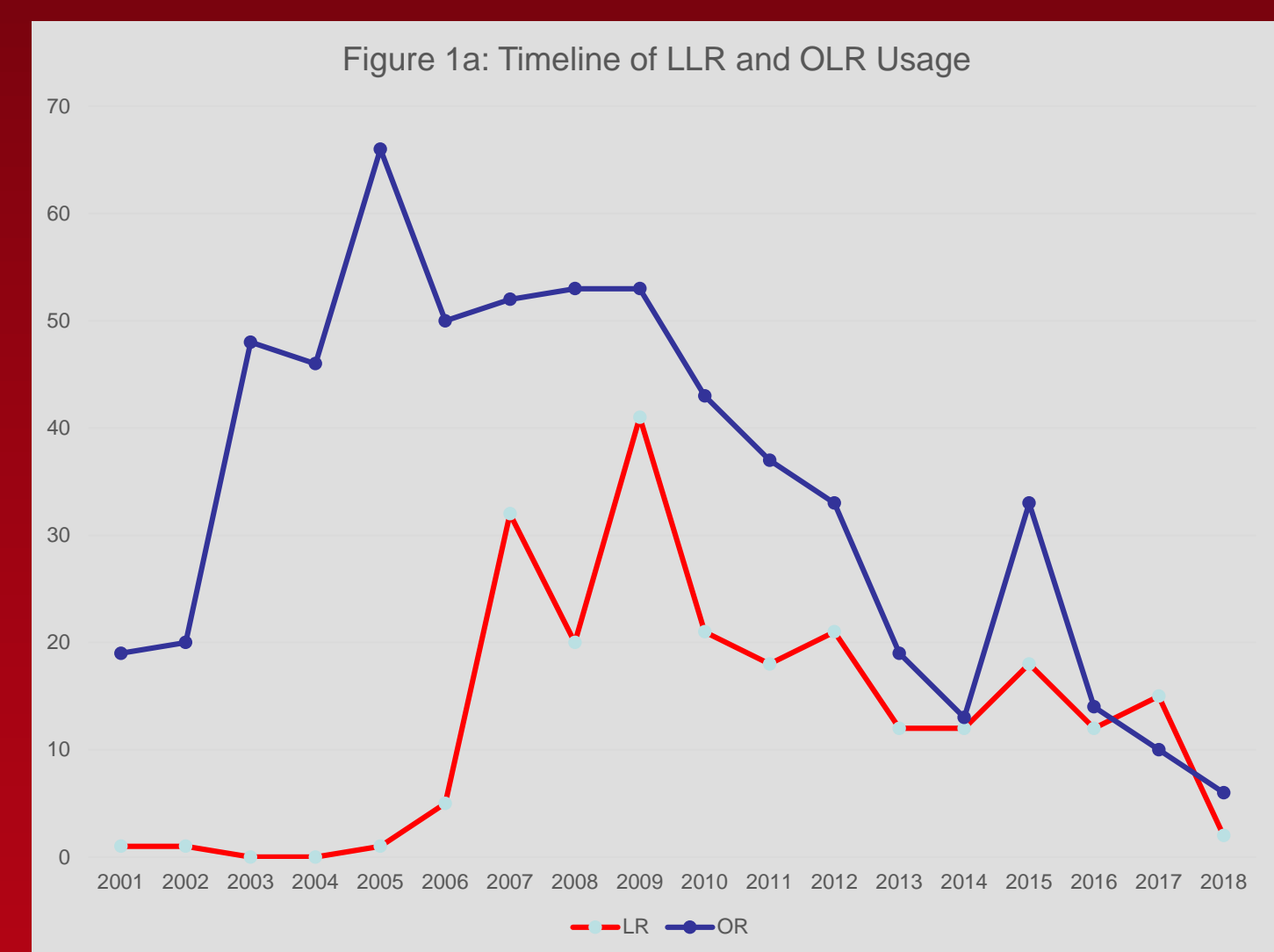
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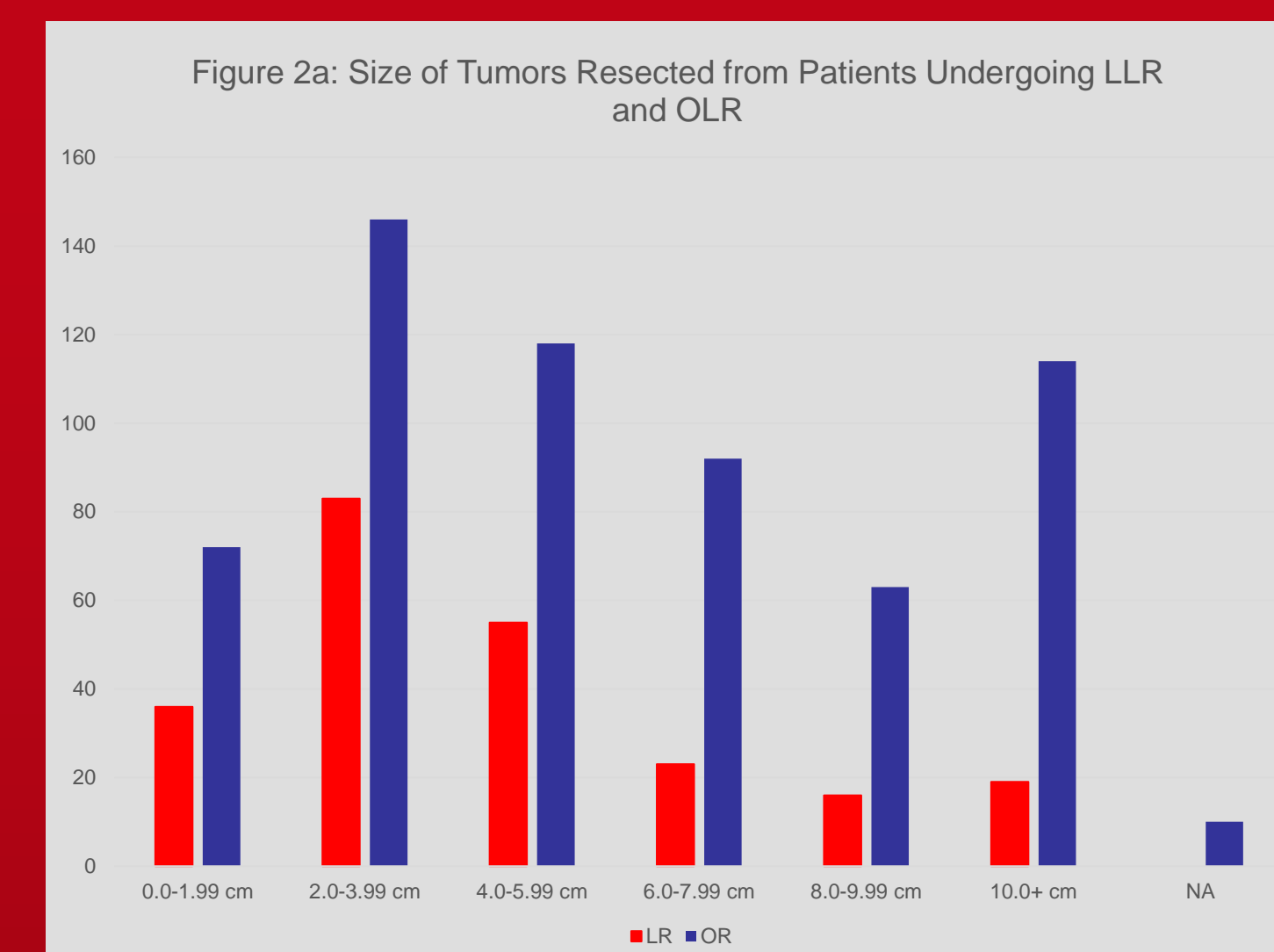
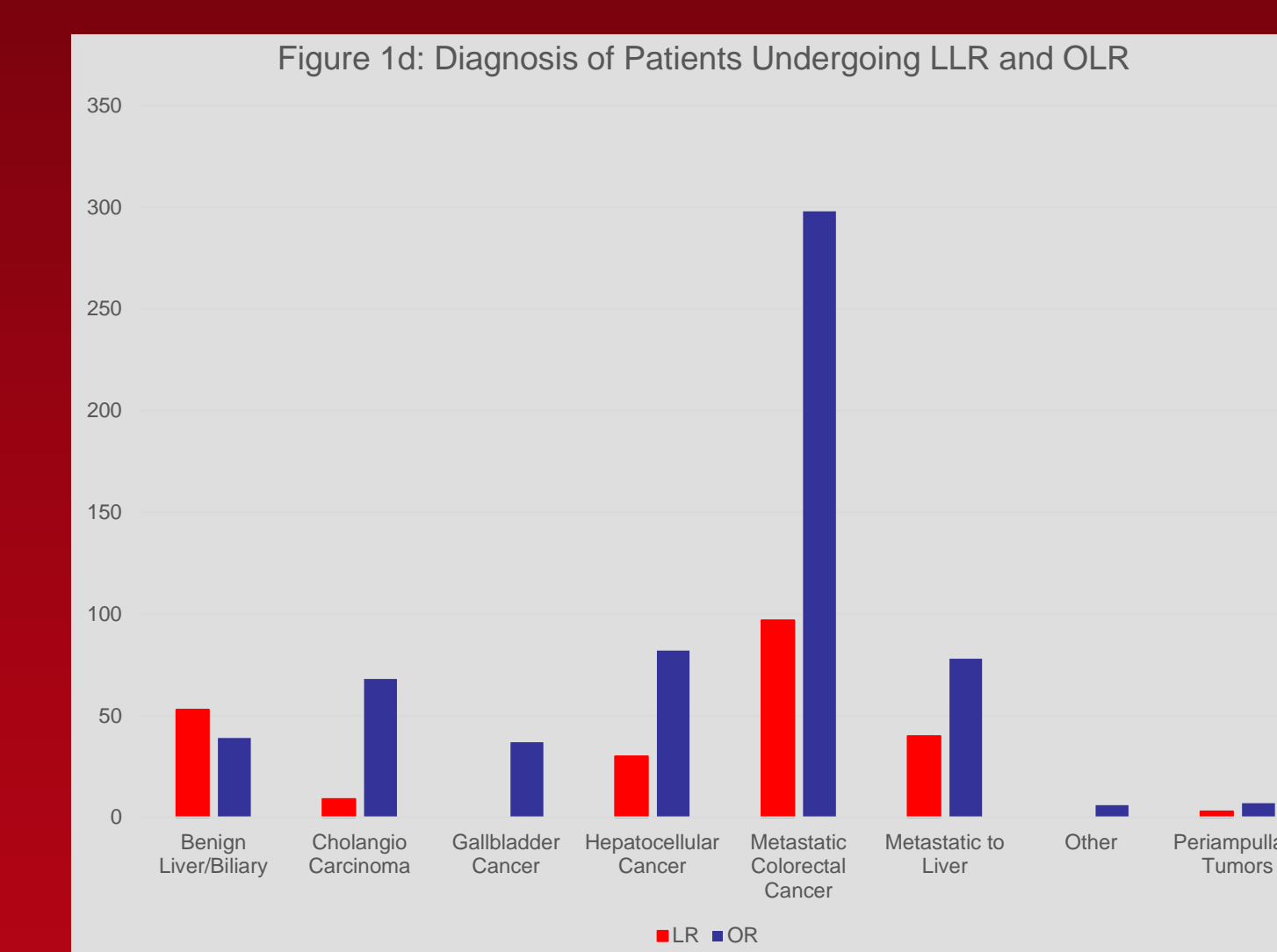
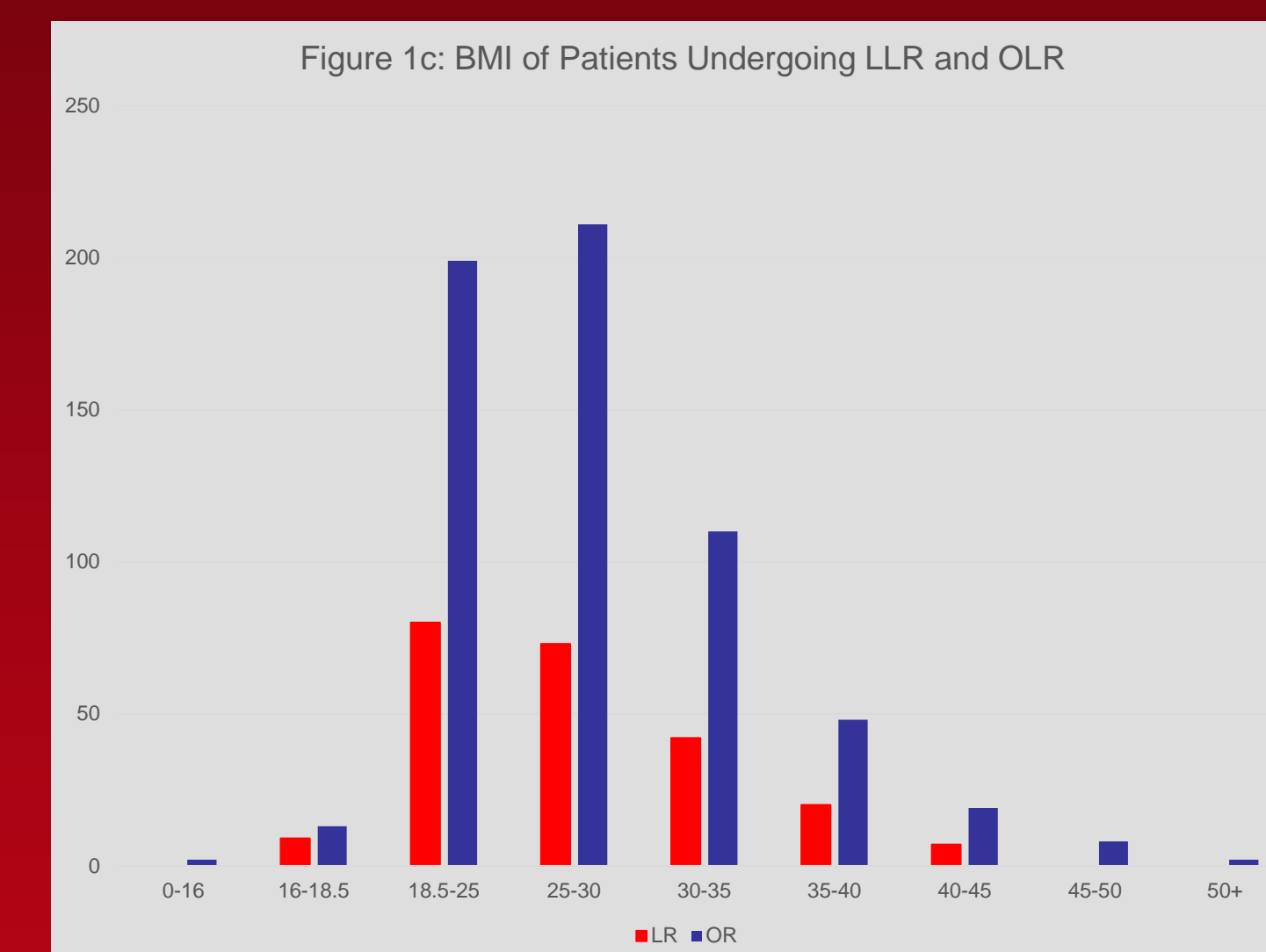
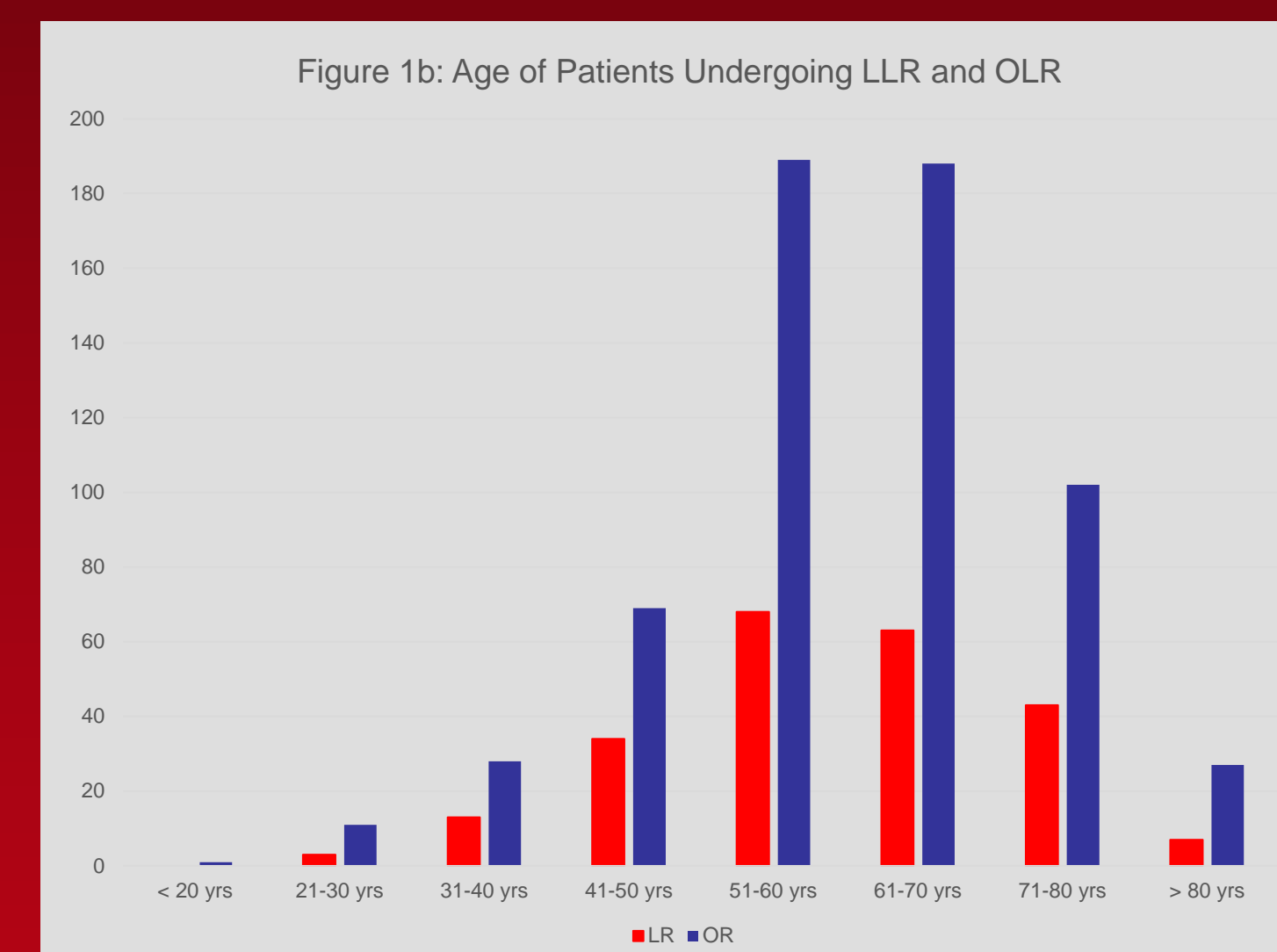
Introduction

- Laparoscopic liver resections are shown to have improved recovery times, decreased blood loss and hospital stays, and lower incidences of minor operative complications.
- Progression of LLR in comparison to OLR and how they correlate to patient selection over time has not been investigated.
- The advent of more active systemic chemotherapy and local regional therapies has changed the referral landscape over the last 15 years.
- Patients are ideally chosen for LLR or OLR to best fit their treatment and any biases in patient selection for one method should be identified to enhance patient care.

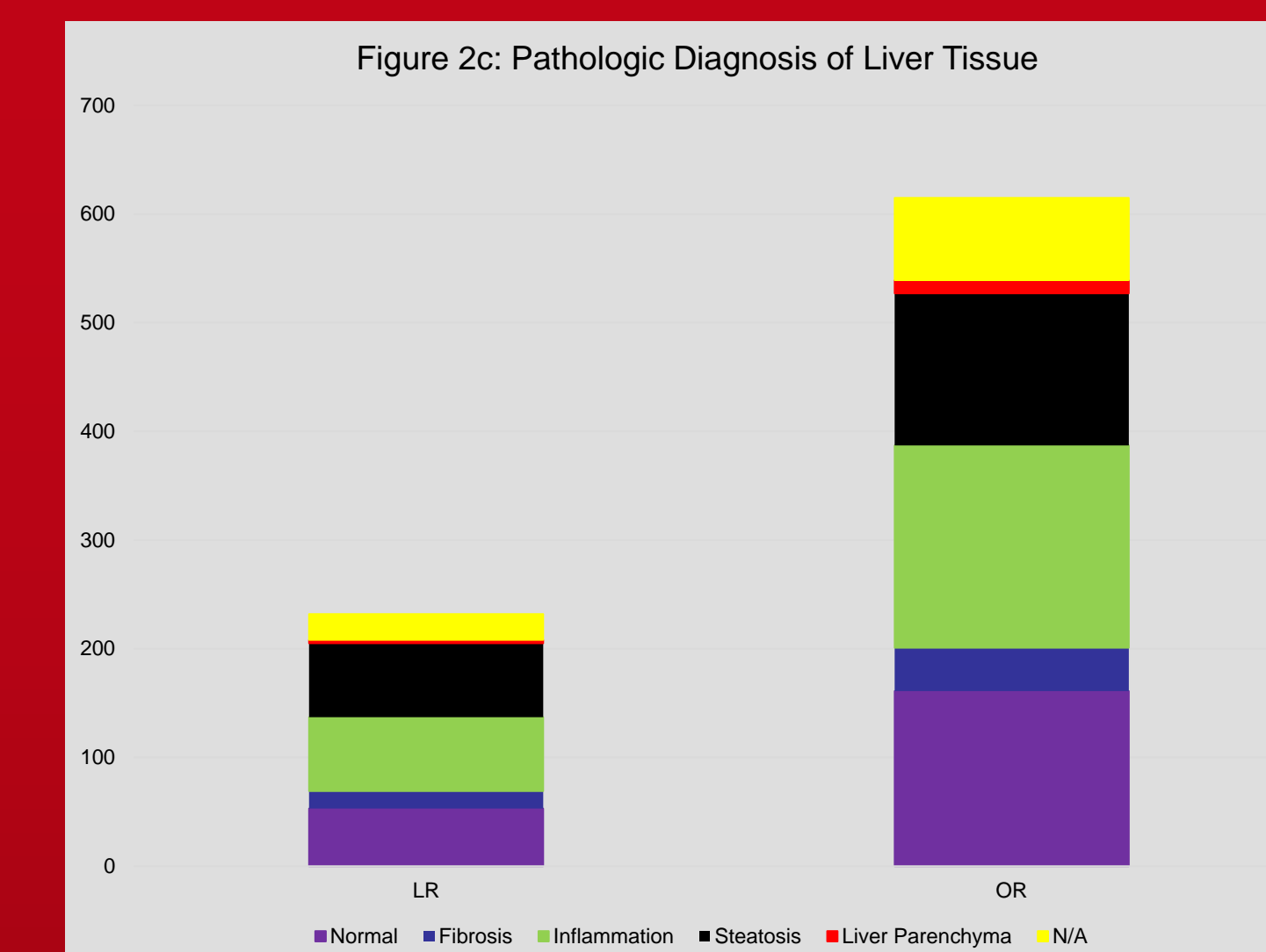
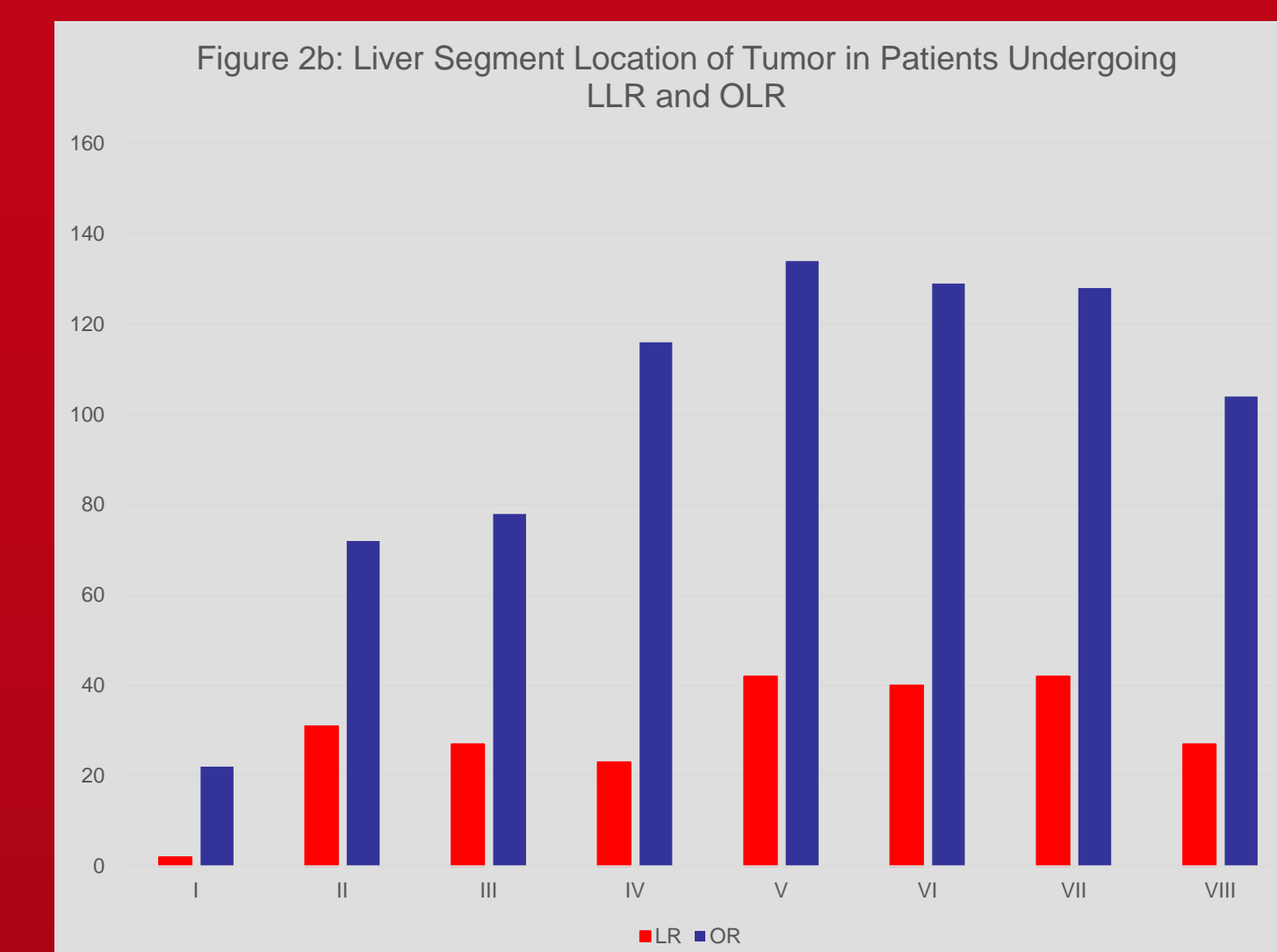
Results



- Figure 1a:** Number of LLRs and OLRs occurring each year over the period from 2001-2018. The data shows LLRs and OLRs approaching each other with a major decline in total procedures.
- Figure 1b:** The amount of people undergoing LLR and OLR that fall into each age range.
- Figure 1c:** The total number of patients undergoing OLR and LLR that fall into each BMI category.
- Figure 1d:** The different diagnoses that patients undergoing LLR and OLR have.



- Figure 2a:** The size of tumors removed via OLR and LLR. Larger tumors were more commonly removed by OLR. Smaller tumors were removed through LLR at much higher rates.
- Figure 2b:** The location of tumors in the liver based on the Coinaud classification in LLR and OLR.
- Figure 2c:** The pathological diagnosis of liver tissue from patients undergoing OLR and LLR. Inflammation and steatosis were the most commonly seen abnormalities for both.



Conclusions

- Our review shows that complication rates for OLR and LLR and total LR have decreased and LLR has caught up to OLR in terms of utilization.
- EBL, complication rate, and LoS in the hospital is decreased in LLR compared to OLR.

Acknowledgements

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Methods

- A review of our prospective 2500 patient database found 847 total LLRs or OLRs that fell into the timeline spanning from 2001-2018 at a single hospital. There were 232 laparoscopic resections and 615 open resections.

	2001-2006	2001-2006	2007-2012	2007-2012	2013-2018	2013-2018
	LR (n=8)	OR (n=249)	LR (n=153)	OR (n=270)	LR (n=71)	OR (n=96)
Gender (m/f)	2/6	128/121	80/73	139/131	33/38	42/54
Age (yrs)	58.46	61.34	61.07	61.44	59.07	59.75
Race (white)	5	197	136	233	58	79
Race (black)	2	19	13	26	7	16
Race (hispanic)	0	0	0	1	0	0
Race (asian/pacific islander)	0	0	0	0	3	1
Race (unknown)	1	31	3	9	3	0
Race (other)	0	2	1	1	0	0
Diagnosis (HCC)	1	41	19	26	11	13
Diagnosis (benign/biliary)	2	20	34	14	16	6
Diagnosis (metastatic colorectal cancer)	5	116	61	133	32	51
Diagnosis (metastatic to liver)	0	35	29	35	10	7
Diagnosis (Gallbladder cancer)	0	13	0	21	0	5
Diagnosis (perihilar tumor)	0	1	1	3	0	0
Diagnosis (cholangiocarcinoma)	0	22	8	32	0	10
Diagnosis (other)	0	1	1	6	2	4
Alcohol Use (yes/no)	2/6	21/228	23/130	23/247	12/59	10/86
Tobacco Use (yes/no)	4/4	65/184	53/100	93/177	19/52	17/79
Cardiac (yes/no)	0/8	44/205	25/128	58/212	9/62	8/87
Pulmonary (yes/no)	2/6	19/230	18/135	22/248	6/65	6/90
HTN (yes/no)	0/8	6/243	0/153	2/268	1/70	2/94

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	LR (n=8)	OR (n=249)	LR (n=153)	OR (n=270)	LR (n=71)	OR (n=96)
Resected Organ - GI	1	30	8	55	5	14
Resected Organ - Renal/Adrenal	0	4	1	4	0	2
Resected Organ - Reproductive	0	3	0	4	0	0
Resected Organ - Other	0	13	4	26	2	9
Estimated Blood Loss (mL)	109.38	449.27	211.34	483.94	233.85	480.56
Length of Stay (days)	6.38	9.22	4.76	8.28	3.18	8.44
Complications - Cardiac	1	17	6	23	1	1
Complications - Pulmonary	1	36	11	20	2	4
Complications - GI	1	48	20	49	4	17
Complications - Intraabdominal	1	20	3	13	2	2
Complications - Wound	0	23	3	13	1	1
Complications - Other	5	95	25	100	12	37