

P1.187: Exploring the feasibility of sublobar resection for high-risk operable non-small cell lung cancer patients with tumor grater than 20mm



Ruihe Liu^{1#}, MD; Shenhua Liang^{1#}, MD, PhD; Yitao Yang^{1#}, MD; Jiayuan Tian¹, MD, PhD; Xingyu Luo¹, MD; Guowei Ma^{1*}, MD, PhD.
1.Department of Thoracic Surgery, State Key Laboratory of Oncology in South China, Collaborative Innovation Center for Cancer Medicine, Sun Yat-Sen University Cancer Center, Guangzhou, Guangdong, 510060, P. R. China;

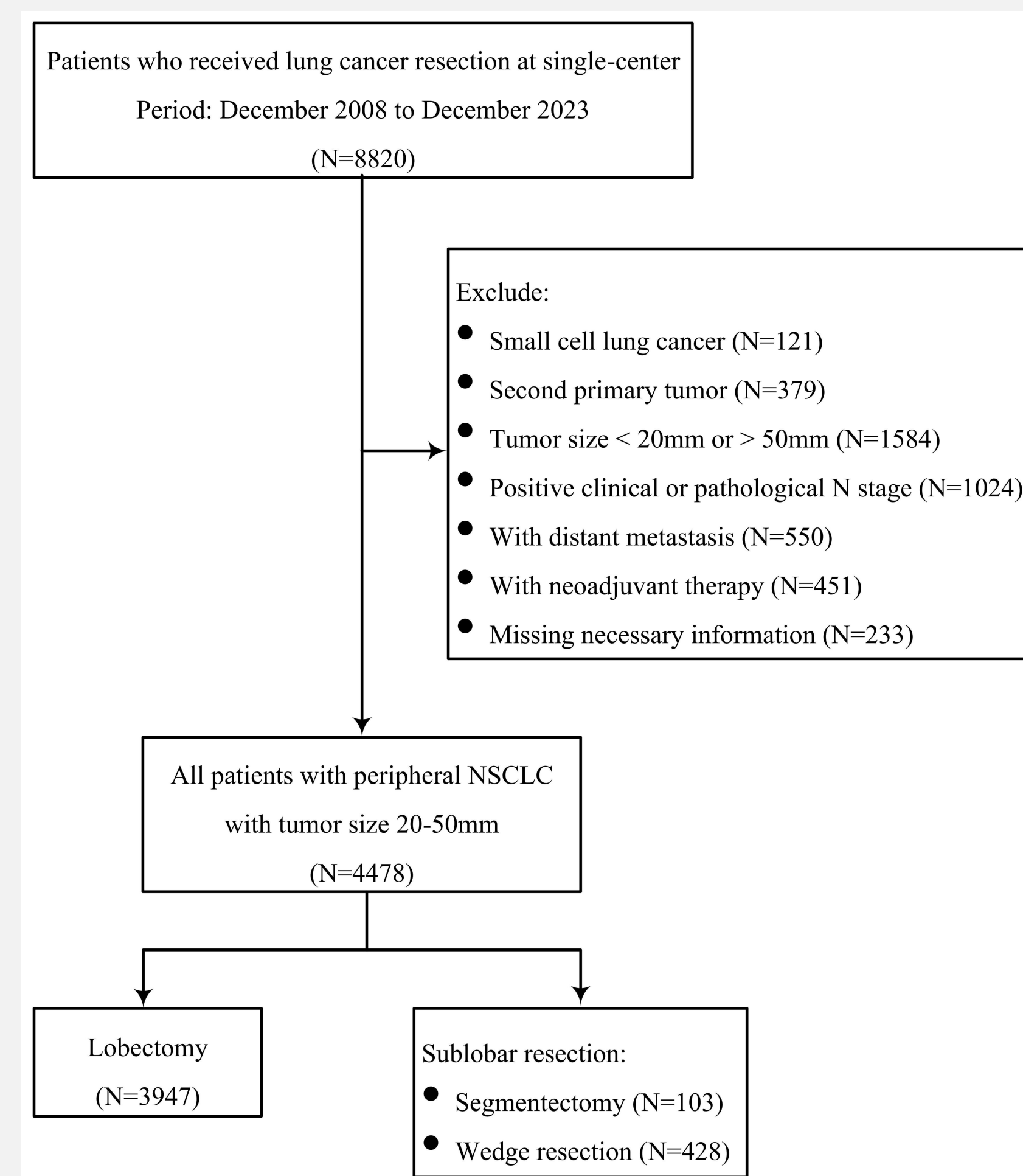
INTRODUCTION

◆ Sublobar resection is an variable surgical option for early-stage non-small cell lung cancer (NSCLC). However, evidence regarding its application for high-risk operable patients with tumors >20 mm in real-world settings remains limited. This study aims to investigate the potential beneficiaries of sublobar resection within this subgroup.

◆ According to American College of Surgeons Oncology Group (ACOSOG) criteria, patients who met 1 major or 2 minor indicators were identified as a high-risk operable group. Major indicators were: (1) Forced expiratory volume in 1 second (FEV1) ≤50% predicted. (2) Diffusing capacity of the lung for carbon monoxide (DLCO) ≤50% predicted. Minor indicators were: (1) Age ≥75 years, (2) FEV1 51 to 60% predicted, (3) DLCO 51 to 60% predicted. (4) Pulmonary hypertension. (5) Poor left ventricular function (6) Resting hypoxemia or hypercapnia (7) Modified Medical Research Council Dyspnoea Scale score ≥3.

METHODS

1. Patients enrollment and exclusion flowchart



2. In this study, we enrolled a cohort of 4478 patients that met the inclusion criteria, comprising 537 individuals receiving sublobar resection and 3947 receiving lobectomy. Following the criteria in previous studies, we further divided the high-risk operable patients (N=55) and the non-high-risk patients (N=476) in the sublobar resection group.

3. Clinical outcomes and statistic analysis:

- Primary endpoints: overall survival (OS) and disease-free survival (DFS)
- Secondary endpoints: postoperative early complication and postoperative recurrence patterns.
- PSM was conducted to compare clinical outcomes between the patients in two groups. A total of 1000 patients were included in the subsequent analyses, with 500 patients in each group.

RESULTS

Table1. Baseline clinicopathological characteristics of patients before and after PSM

Characteristics	Before PSM (N=4478)			After PSM (N=1000)		
	Sublobar resection (N=531)	Lobectomy (N=3947)	P value*	Sublobar resection (N=500)	Lobectomy (N=500)	P value*
Age, y, Median (IQR)	64 (57-71)	61 (54-66)	<0.001	64 (57-71)	63 (56-67)	0.746
Sex, n (%)			0.336			0.999
Male	324 (61.0)	2322 (58.8)		306 (61.2)	306 (61.2)	
Female	207 (39.0)	1625 (41.2)		194 (38.8)	194 (38.8)	
Smoking, n (%)			0.165			0.846
No	325 (61.2)	2291 (58.0)		307 (61.4)	304 (60.8)	
Yes/ever	206 (38.8)	1656 (42.0)		193 (38.6)	196 (39.2)	
Tumor diameter, n (%)			<0.001			0.631
≥2 cm, <3 cm	395 (74.4)	2158 (54.7)		373 (74.6)	366 (73.2)	
≥3 cm, <4 cm	98 (18.5)	1131 (28.7)		90 (18.0)	96 (19.2)	
≥4 cm, <5 cm	38 (7.2)	658 (16.7)		37 (7.4)	38 (7.6)	
Predominant pattern, n (%)			<0.001			0.950
pGGN	67 (12.6)	166 (4.2)		59 (11.8)	62 (12.4)	
CTR<0.5	113 (21.3)	452 (11.5)		108 (21.6)	103 (20.6)	
CTR≥0.5	75 (14.1)	328 (8.3)		73 (14.6)	73 (14.6)	
SN	276 (52.0)	3001 (76.0)		260 (52.0)	262 (52.4)	
Histologic type, n (%)			0.001			0.536
ADC	458 (86.3)	3165 (80.2)		430 (86.0)	436 (87.2)	
SCC	47 (8.9)	572 (14.5)		46 (9.2)	47 (9.4)	
Others†	26 (4.9)	210 (5.3)		24 (4.8)	17 (3.4)	
Differentiation grade, n (%)			0.001			0.979
Grade I	78 (14.7)	263 (6.7)		69 (13.8)	67 (13.4)	
Grade II	307 (57.8)	2512 (63.6)		295 (59.0)	300 (60.0)	
Grade III	138 (26.0)	1090 (27.6)		128 (25.6)	128 (25.6)	
Grade IV	8 (1.5)	82 (2.1)		8 (1.6)	5 (1.0)	
Resection completeness, n (%)			<0.001			0.719
R0	494 (93.0)	3898 (98.8)		485 (97.0)	483 (96.6)	
R+	37 (7.0)	49 (1.2)		15 (3.0)	17 (3.4)	

Figure 1. Plots of interaction between tumor size and prognosis using restricted cubic splines (RCS) fitted for multivariable Cox regression model in sublobar resection group. (A) OS; (B) DFS.

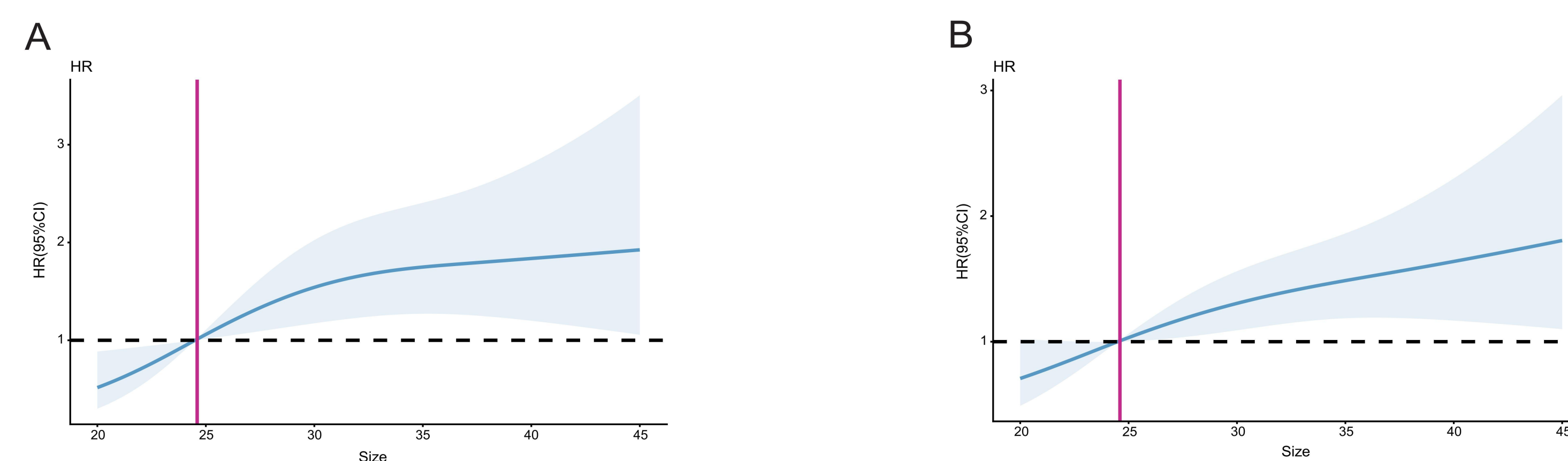
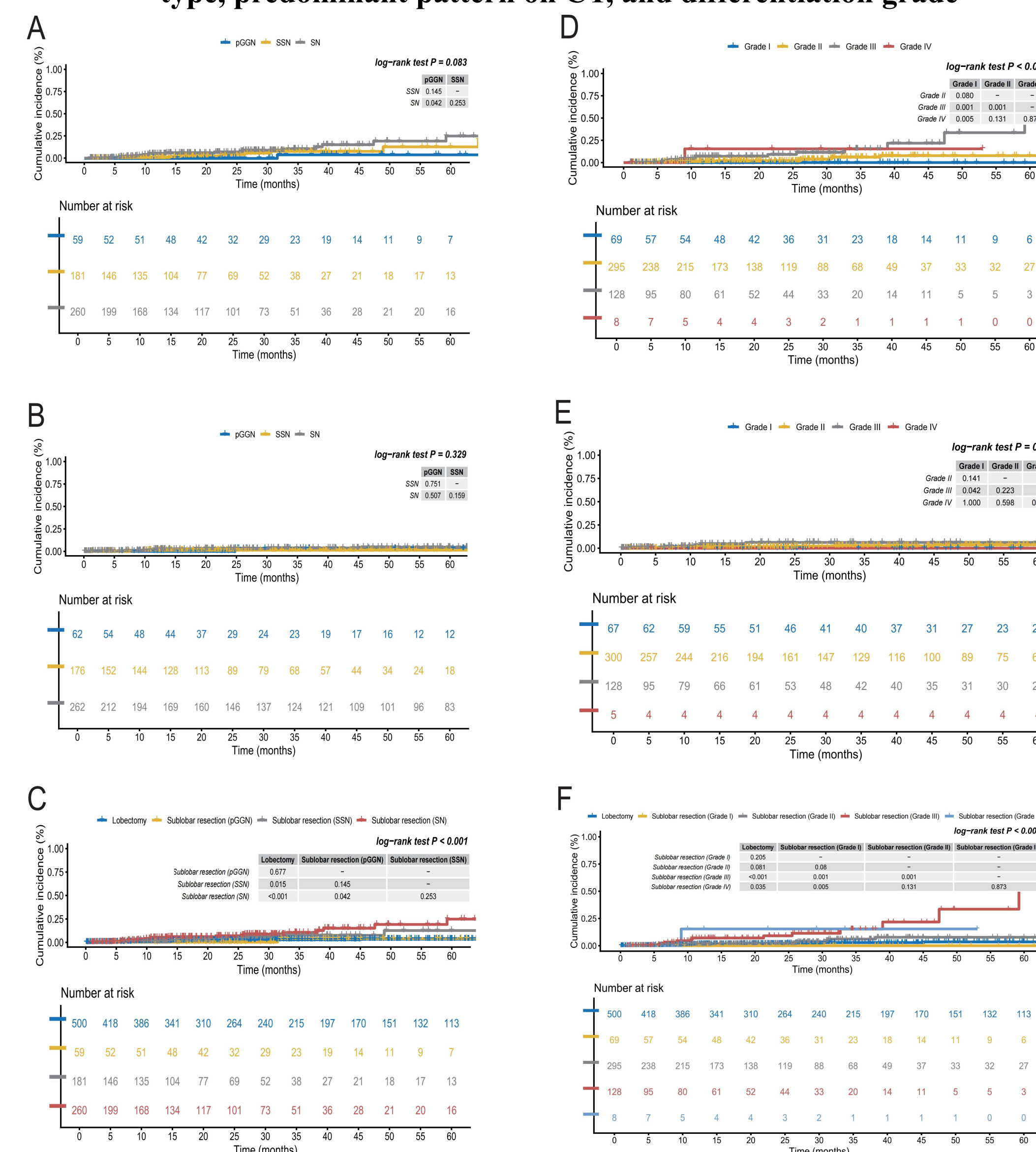


Figure 2. Cumulative incidence curves of local recurrence stratified by surgery type, predominant pattern on CT, and differentiation grade



DISCUSSION AND CONCLUSION

◆ 10.3% of patients in our cohort were identified as belonging to a high-risk group and subsequently underwent passive restrictive resection. The incidence of grade ≥3 adverse events was similar in both groups, with rates recorded at 3.6% for the high-risk group and 2.3% for the normal group. Notably, there were no reports of perioperative mortality. The consistently low mortality rates reported in this study and ACOSOG Z4032 trial suggest that sublobar resection remains a viable option, even within predominantly high-risk groups.

◆ Sublobar resection was feasible in high-risk operable patients with peripheral NSCLC with tumor size >20mm, especially for pGGN and grade I differentiation subgroup. An surrogate risk threshold for the size was determined to be 24 mm.

REFERENCES & ACKNOWLEDGEMENTS

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For further inquiries or discussion regarding this work, please contact Dr. Ruihe Liu: liuruihe@sysucc.org.cn