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INTRODUCTION

Since the 7th TNM edition, T2a non-small cell lung cancer (NSCLC) can be defined either by tumor size (larger than 3 up to 4 cm) or by the presence of visceral pleural invasion (VPI). This study aimed to assess long term outcomes of patients with pT2aN0 NSCLC defined by a single or two concurrent feature.

METHODS

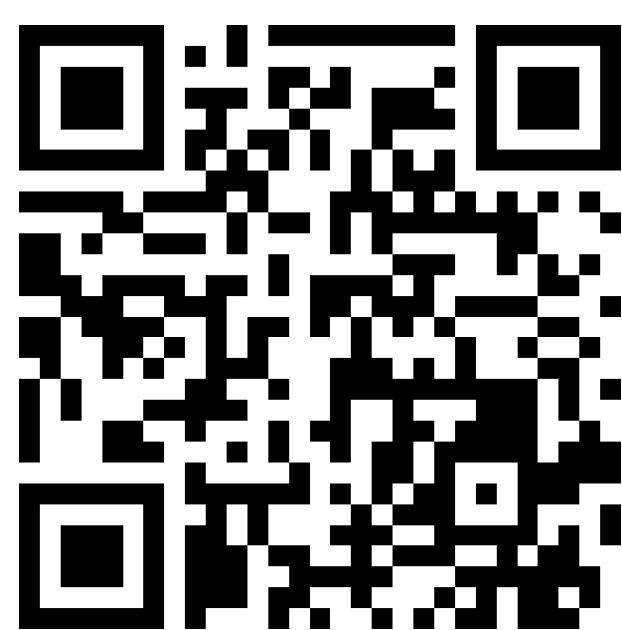
Design:

Data from the The Surveillance, Epidemiology, and End Results (SEER) database (2010–2015) were analyzed. Eligible patients had histologically confirmed adenocarcinoma or squamous cell carcinoma, staged as pT2aN0M0, and treated with lobectomy or segmentectomy. Overall survival was estimated using the Kaplan–Meier method and compared using the log-rank test. To quantify the association between exposure variables and survival, Cox proportional hazards regression models were fitted.

DISCUSSION AND CONCLUSION

Our findings suggest that the coexistence of visceral pleural invasion and tumour size between 30 and 40 mm identifies a subgroup of patients with worse survival within pT2a NSCLC, particularly among those undergoing lobectomy. These results support a more nuanced interpretation of T descriptors and highlight the potential value of integrating multiple pathological features to refine prognostic stratification.

REFERENCES & ACKNOWLEDGEMENTS



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RESULTS

A total of 910 patients met inclusion criteria, including 792 (87%) with either PL1 or >30 mm and 118 (13%) with both PL1 and >30 mm. Groups were balanced by sex and histology, with adenocarcinoma representing 68% of the overall population. In the overall population, older age (≥ 70 years) ($p < 0.001$) and male sex ($p < 0.001$) were associated with poorer survival, while adenocarcinoma histology ($p = 0.002$) and lobectomy ($p = 0.004$) showed a significant better OS. The coexistence of VPI and Tumor size>30 mm showed a worst OS, but this difference was not significant ($p = 0.083$)

We analyze the subgroup of patients that received lobectomy ($n = 709$). In multivariate Cox regression, age ≥ 70 years (HR 2.16 CI 95% 1.76–2.64, $p < 0.001$), male sex (HR 1.46 CI 95% 1.20–1.78, $p < 0.001$), squamous cell histology (HR 1.28 CI 95% 1.04–1.56, $p = 0.016$) and the presence of both T2a features (HR 1.47 CI 95% 1.12–1.92, $p = 0.005$) were independent predictors of overall worse long-term outcomes.

Variable	Overall N = 910 ¹	VPI or > 30 mm N = 792 ¹	VPI and > 30 mm N = 118 ¹	p-value ²
Age ≥ 70	516 (57%)	445 (56%)	71 (60%)	0.5
Female	474 (52%)	412 (52%)	62 (53%)	>0.9
Histology				>0.9
Squamous cell carcinoma	287 (32%)	249 (31%)	38 (32%)	
Adenocarci noma	623 (68%)	543 (69%)	80 (68%)	
Yes	452 (50%)	334 (42%)	118 (100%)	<0.001
Tumor size (mm)	29 (9) [3, 40]	29 (9) [3, 40]	34 (3) [30, 40]	<0.001
Tumor size group				<0.001
≥ 30 mm	576 (63%)	458 (58%)	118 (100%)	
Surgery type				0.7
Lobectomy	709 (78%)	619 (78%)	90 (76%)	
Adjuvant therapy				>0.9
Yes	87 (9.6%)	75 (9.5%)	12 (10%)	

¹ Mean (SD) [Min, Max]; n (%)

² Welch Two Sample t-test; Pearson's Chi-squared test; NA

Table 1: descriptive table

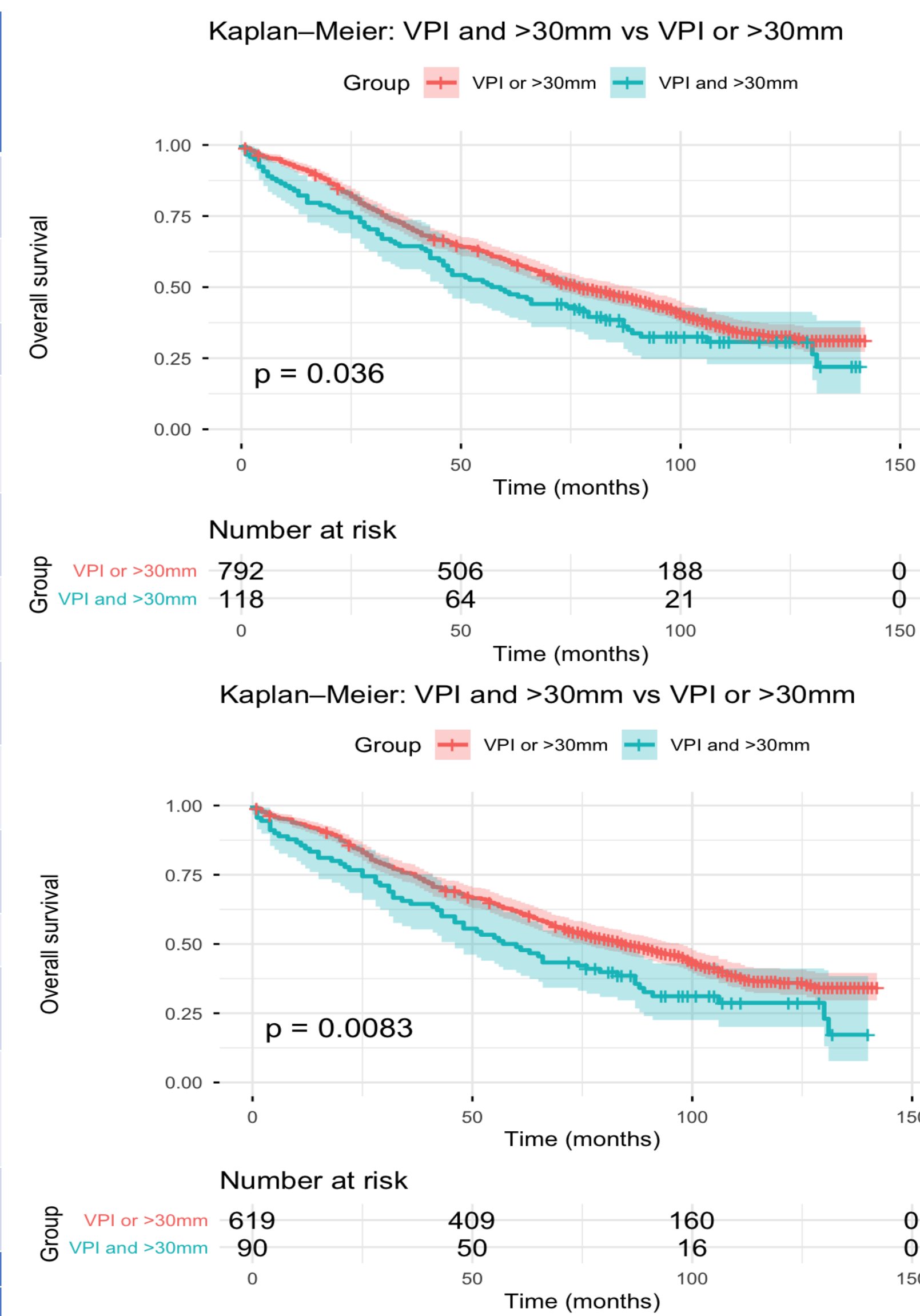


Figure 1: Kaplan-Meier of overall and lobectomy cohort

Cox Regression Analysis			
Variable	HR	95% CI	p-value
Multivariate analysis			
VPI and >30mm	1.46	1.12–1.91	0.006
Age ≥ 70	2.17	1.77–2.67	<0.001
Sex: Male	1.46	1.2–1.78	<0.001
Histology: ADK	0.78	0.64–0.95	0.016

Table 2: Cox regression of lobectomy cohort