

P3279: Does Tumor Size Matter? The Clinical Relevance of the 2 cm Threshold in Early Stage Non-Small Cell Lung Cancer

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INTRODUCTION

The CALGB and JCOG studies have demonstrated that segmentectomy is not inferior to lobectomy in terms of overall survival and disease-free survival in peripheral non-small cell lung cancers measuring 2 cm or less. However, the applicability of segmentectomy for lesions measuring 2–3 cm remains a subject of ongoing debate. In this study, patients who underwent surgery for non-small cell lung cancer and had tumors measuring 0–2 cm and 2–3 cm were divided into two groups and analyzed.

METHODS

Patients who underwent surgery for non-small cell lung cancer between 2001 and 2024 across six centers were included in the study. A total of 504 patients were analyzed, of whom 433 (85.9%) were classified as T1ab and 71 (14.1%) as T1c. The groups were compared in terms of demographic, clinical, pathological, and survival outcomes.

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RESULTS

The mean age was 63.9 years in the T1ab group, with 163 females (37.6%) and 270 males (62.4%). In the T1c group, the mean age was 65.9 years, including 19 females (26.8%) and 52 males (73.2%) (Table 1).

Non-adenocarcinoma histology, N1 positivity, pleural invasion, lymphatic invasion, and the presence of STAS were significantly more frequent in the T1c group (Table 1).

The T1ab group demonstrated significantly better survival outcomes (p=0.002; Table 2, Figure 1).

In Cox regression analysis, male sex was identified as an independent prognostic factor (p=0.003; Table 4).

Table 1: Demographic and Pathologic Data

	T1ab Segmentectomy (n=433)	T1c Segmentectomy (n=71)	p Value
Age	63.9 (16-89)	65.9 (38-85)	0.267
Gender -Female -Male	163 (37.6%) 270 (62.4%)	19 (26.8%) 52 (73.2%)	0.077, OR:1.7 (0.9-2.9)
Pathology -Adenocarcinoma -Non-adenocarcinoma	343 (79.2%) 90 (20.8%)	45 (63.4%) 26 (36.6%)	0.003 OR:0.5 (0.3-0.8)
N0 N1	414 (95.6%) 19 (4.4%)	61 (85.9%) 10 (14.1%)	<0.001 OR:3.6 (1.6-8.0)
PL0 PL1 PL2	403 (93.1%) 26 (6.0%) 4 (0.9%)	56 (78.9%) 10 (14.1%) 5 (7.0%)	<0.001
Perineural Invasion	7 (1.6%)	2 (2.8%)	0.479
Lymphatic Invasion	57 (13.2%)	20 (28.2%)	0.001 OR: 2.6 (1.4-4.7)
Vascular Invasion	27 (6.2%)	9 (12.7%)	0.051
STAS	74 (17.1%)	22 (31.0%)	0.006 OR: 2.2 (1.2-3.8)
Postoperative Complication	4 (0.9%)	1 (1.4%)	0.963

DISCUSSION

In this study, tumors measuring 2–3 cm (T1c) exhibited more aggressive pathological features and were associated with worse survival compared to that of tumors measuring 0–2 cm (T1a-b). The higher rates of N1 positivity, pleural and lymphatic invasion, and STAS in the T1c group suggest a more invasive tumor biology. While segmentectomy is considered a safe option for tumors ≤2 cm, these findings support the need for careful patient selection in lesions measuring 2–3 cm. Additionally, the identification of male sex as an independent prognostic factor highlights the importance of patient-based risk stratification in surgical decision-making.

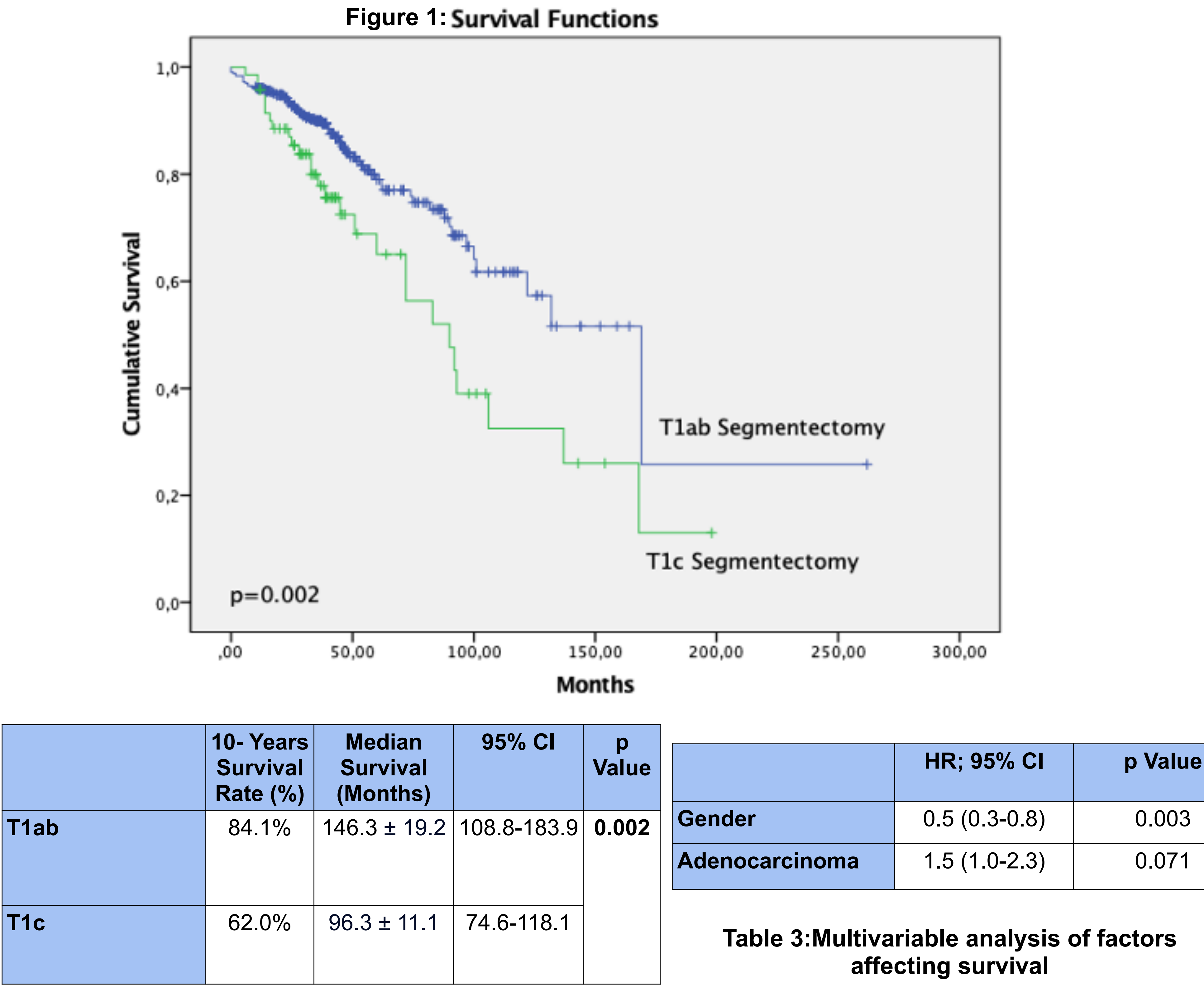


Table 2: Survival Data