

P2.155: Exploration of Pathological Evaluation for Lung Adenocarcinoma After Neoadjuvant Therapy



IASLC 2026 World
Conference on Lung Cancer
SEPTEMBER 12 – 15, 2026
SEOUL, REPUBLIC OF KOREA

INTRODUCTION

It has been shown that major pathological response (MPR) values vary among different histological subtypes of non-small cell lung cancer (NSCLC). Previous studies reported that the MPR cutoff of adenocarcinoma after neoadjuvant therapy was 65%, which was close to the 58% cutoff value identified in our study. Nevertheless, no existing research has clarified whether lepidic/adenocarcinoma in situ (AIS) components within post-treatment adenocarcinoma should be in the numerator for residual viable tumor (%RVT) proportion calculation.

METHODS

A total of 120 patients with lung adenocarcinoma receiving neoadjuvant therapy. Lesions with lepidic growth pattern, mild nuclear atypia and no significant cellular degeneration were defined as AIS components. Primary tumor therapeutic response was assessed in accordance with IASLC multidisciplinary recommendations. Overall survival (OS) and disease-free survival (DFS) was analyzed to explore their correlations with pathological response of primary lesions.

DISCUSSION AND CONCLUSION

Actionable Take Away Message

- Significant differences were observed between %RVT calculated with and without exclusion of lepidic components ($P < 0.001$)
- After excluding lepidic components, the optimal %RVT cutoff value for OS was 23% ($P=0.018$)
- Limited sample size and treatment-related morphological changes bring challenges in identifying lepidic-pattern components

Future Direction for Research

- The inclusion or exclusion of lepidic components in RVT calculation substantially changes the optimal cutoff value for survival prediction. Our findings indicate that lepidic components act as an important interfering factor in MPR evaluation. Uniform diagnostic criteria for counting lepidic components are therefore required to enhance the precision of therapeutic response assessment for neoadjuvant-treated lung adenocarcinoma.

REFERENCES & ACKNOWLEDGEMENTS

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Artificial Intelligence (AI) Use Disclaimer
No artificial-intelligence tools were used in preparation of this material.

RESULTS

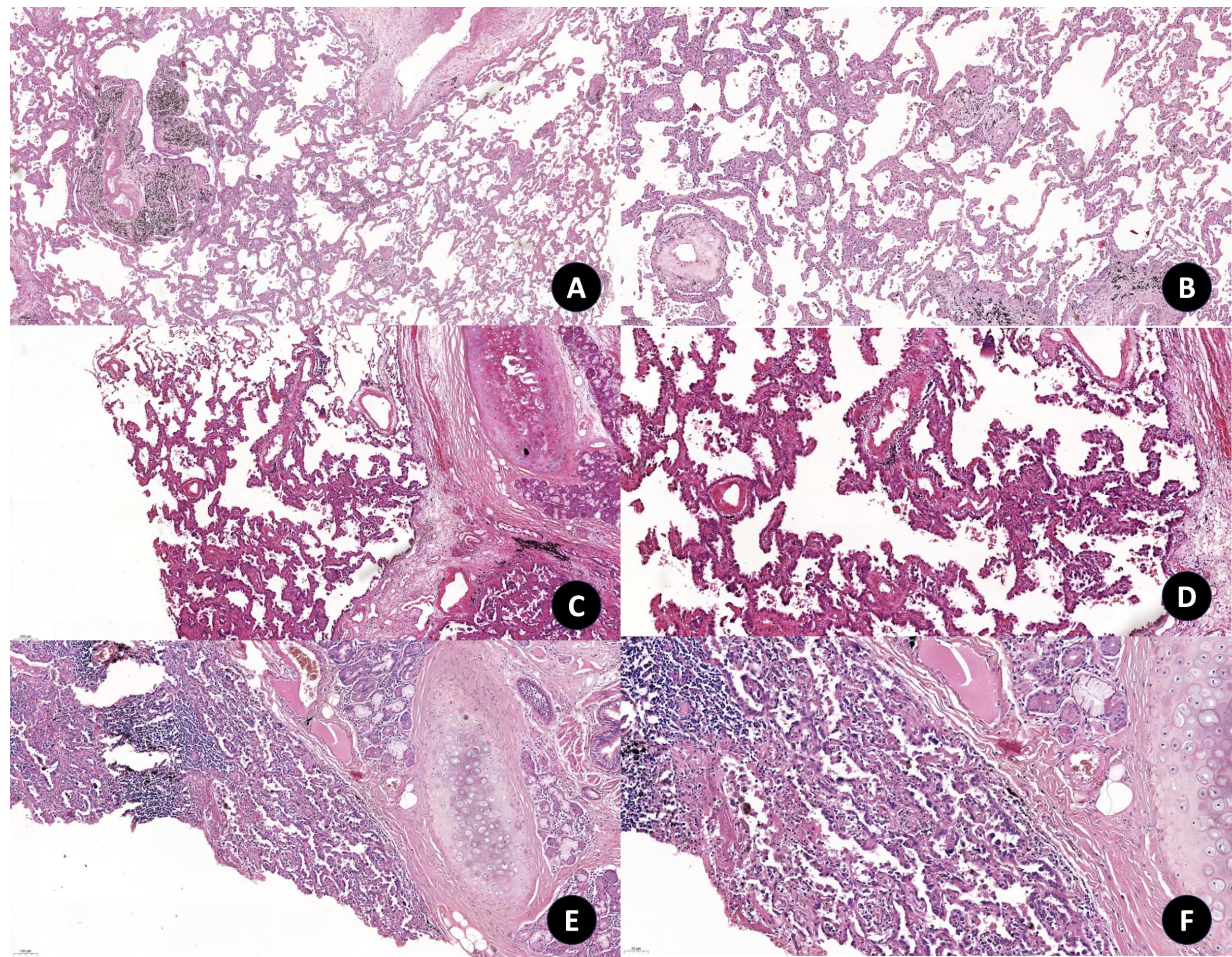


Figure 1: Lepidic components in lung adenocarcinoma following neoadjuvant therapy.(HE staining)

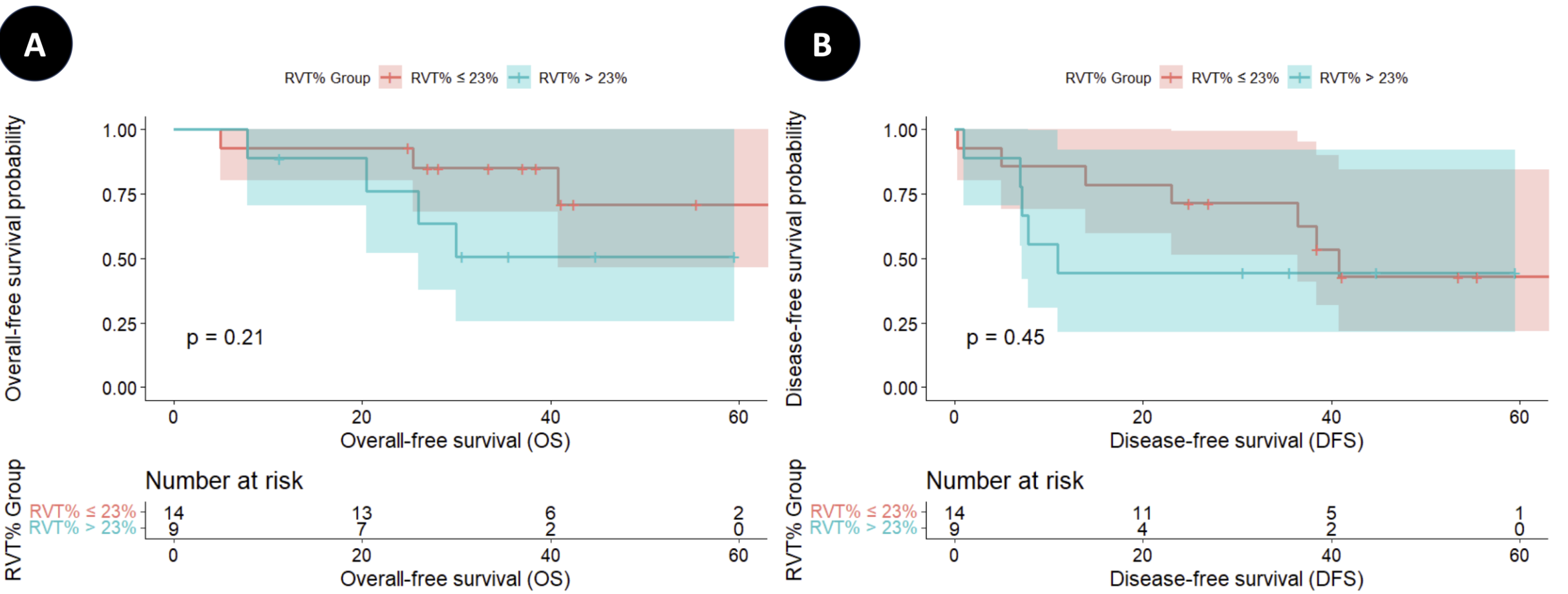


Figure 2:
(A)Kaplan–Meier estimates of overall survival (OS) based on %RVT in 23 cases is shown.
(B)Kaplan–Meier estimates of disease-free survival (DFS) based on %RVT in 23 cases is shown.

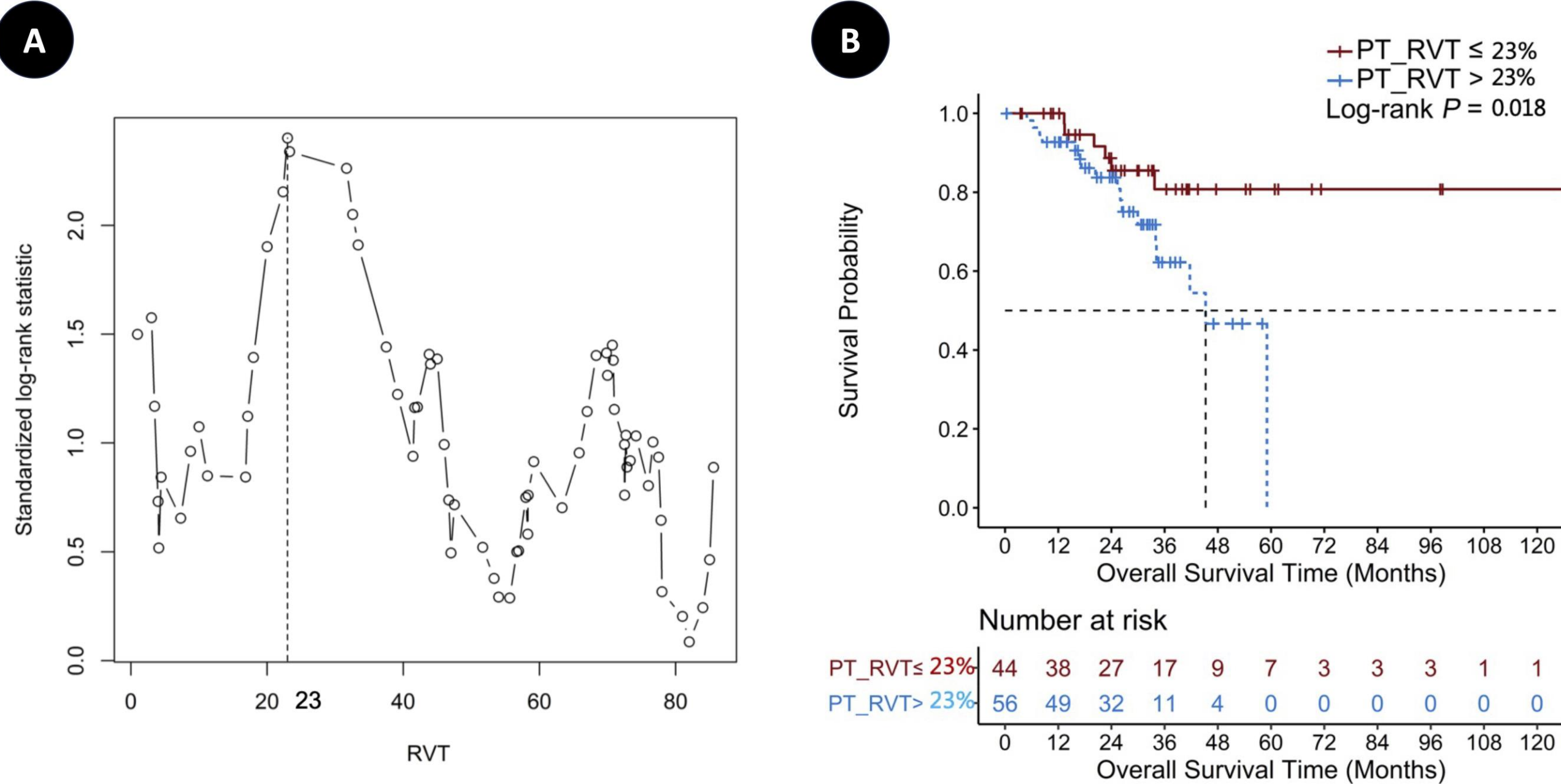


Figure 4:
(A)The optimal cutoff percentage of residual viable tumor (%RVT) for predicting overall survival.
(B)Kaplan–Meier estimates of overall survival (OS) based on %RVT in all 120 cases is shown.

Table 1: %RVT of 23 adenocarcinoma cases with lepidic components

No.	RVT%	New RVT% (exclude lepidic components)
1	100.00%	0.00%
2	68.67%	47.00%
3	70.74%	31.67%
4	16.83%	0.00
5	86.00%	18.00%
6	91.00%	4.00%
7	54.00%	0.00
8	95.00%	45.67%
9	50.00%	11.25%
10	63.00%	23.30%
11	57.00%	20.00%
12	93.17%	4.17%
13	61.43%	23.30%
14	90.83%	31.67%
15	97.44%	10.00%
16	91.43%	1.43%
17	66.00%	10.00%
18	14.00%	5.40%
19	98.33%	0.00
20	84.17%	56.67%
21	83.00%	76.00%
22	24.31%	2.60%
23	77.42%	67.00%

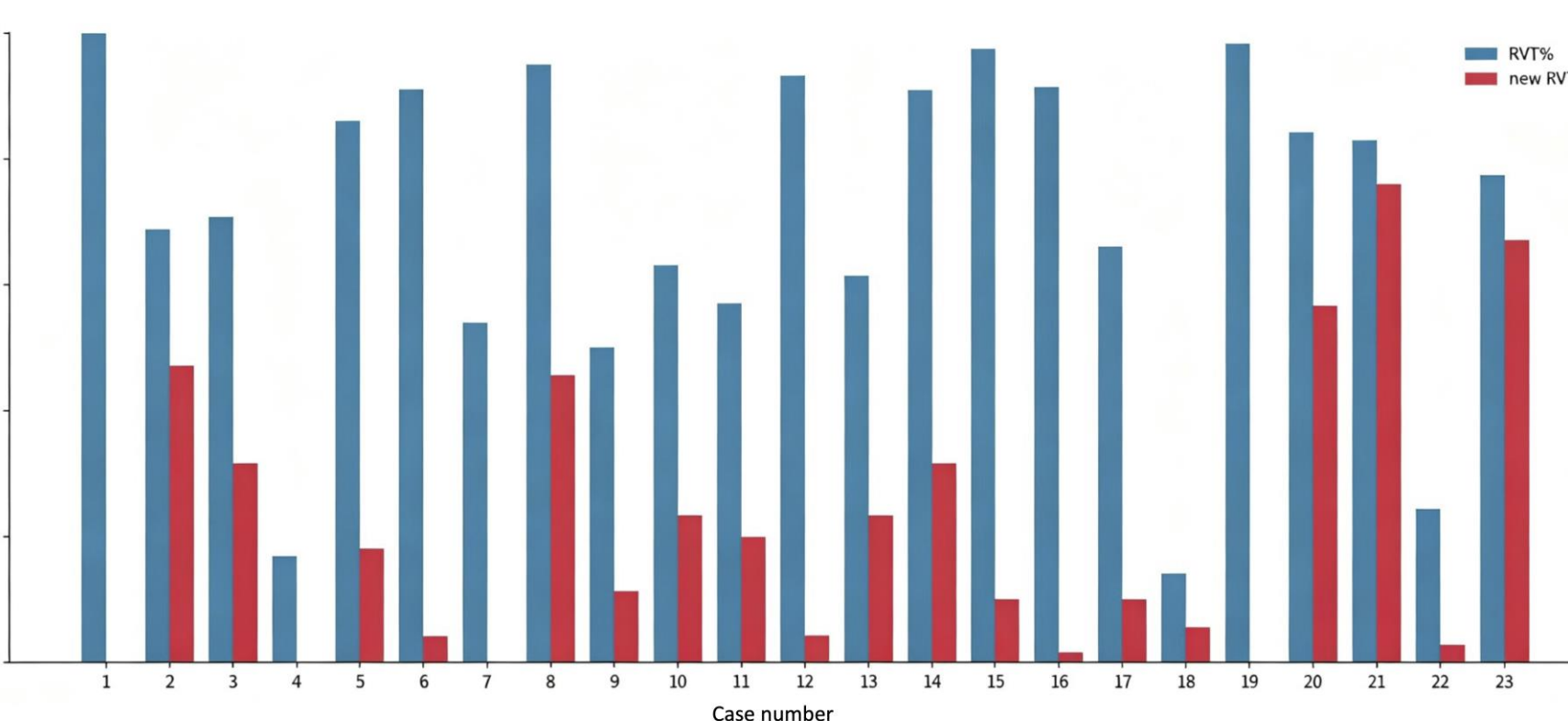


Figure 3: Paired comparison of %RVT