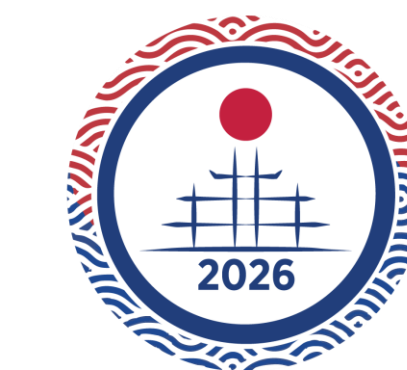




P3.384: Risk of Second Primary Malignancy After Adult Thymectomy: A Retrospective Single-Center Study

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INTRODUCTION

BACKGROUND

Conflicting clinical evidence.

Adult thymectomy has been reported to increase cancer incidence and all-cause mortality,¹⁾ whereas U.S. data in small/localized thymoma found no increase in 5-year mortality or cancer death.²⁾

Long-term impact remains uncertain, and Japanese data on post-thymectomy SPM are limited.

OBJECTIVE

To evaluate SPM and mortality after adult thymectomy and identify high-risk subgroups.

METHODS

DESIGN & COHORT

Design: Single-center retrospective cohort.

Eligibility: Adults undergoing thymectomy, January 2010–December 2024.

Follow-up: SPM to first event, death, or last contact; mortality to death or last contact.

Groups: TET vs non-TET.

ENDPOINTS & ANALYSIS

Outcomes: SPM and all-cause mortality.

Mortality: Multivariable Cox model.

SPM: Gray's test and multivariable Fine–Gray models; death treated as a competing event.

TET subgroup (exploratory): MG, tumor size, histology, and resection status.

Population comparison (descriptive): Expected SPM-free survival by Ederer II using matched Japanese population data.³⁾

DISCLOSURES

Generative AI: ChatGPT (OpenAI) supported English editing and poster layout; it was not used for data generation or analysis. Authors reviewed all content.

COI: None.

RESULTS

203	101 / 102	5.77 y	21	19
patients	TET / non-TET	median follow-up	SPM events	deaths
Overall cohort and outcomes				
Characteristic	Overall (n=203)	TET (n=101)	non-TET (n=102)	P
Age, y; median (IQR)	62 (48–72)	66 (52–72)	60 (45–72)	0.089
Male sex, n (%)	112 (55.2)	57 (56.4)	55 (53.9)	0.72
Prior malignancy, n (%)	47 (23.2)	24 (23.8)	23 (22.6)	0.84
Total thymectomy, n (%)	135 (66.5)	84 (83.2)	51 (50.0)	<0.0001
Myasthenia gravis, n (%)	40 (19.7)	24 (23.8)	16 (15.7)	0.15
Follow-up, y; median (IQR)	5.77 (2.50–8.83)	5.56 (2.04–8.14)	6.10 (2.99–9.42)	—
SPM, n (%)	21 (10.3)	17 (16.8)	4 (3.9)	—
Deaths, n (%)	19 (9.4)	11 (10.9)	8 (7.8)	—
Characteristics of patients with TET (n = 101)				
	n (%)			
Tumor size >5 cm	31 (31.0)			
WHO histologic type				
Type A	16 (15.8)			
Type AB	28 (27.7)			
Type B1	10 (9.9)			
Type B2	25 (24.8)			
Type B3	7 (6.9)			
Thymic carcinoma	13 (12.9)			
Thymoma NOS	2 (2.0)			
Incomplete resection (R1–2)	16 (15.8)			

Overall cohort: multivariable models

A. SPM risk factors (multivariable Fine–Gray model)		
Factor	sHR (95% CI)	P
Age at thymectomy (per year)	1.05 (1.02–1.09)	0.006
Male sex (vs female)	1.87 (0.71–4.88)	0.20
TET (vs non-TET)	6.67 (2.24–19.90)	<0.001
Total thymectomy (vs partial)	0.45 (0.18–1.12)	0.09
Prior malignancy (yes vs no)	0.94 (0.33–2.62)	0.90

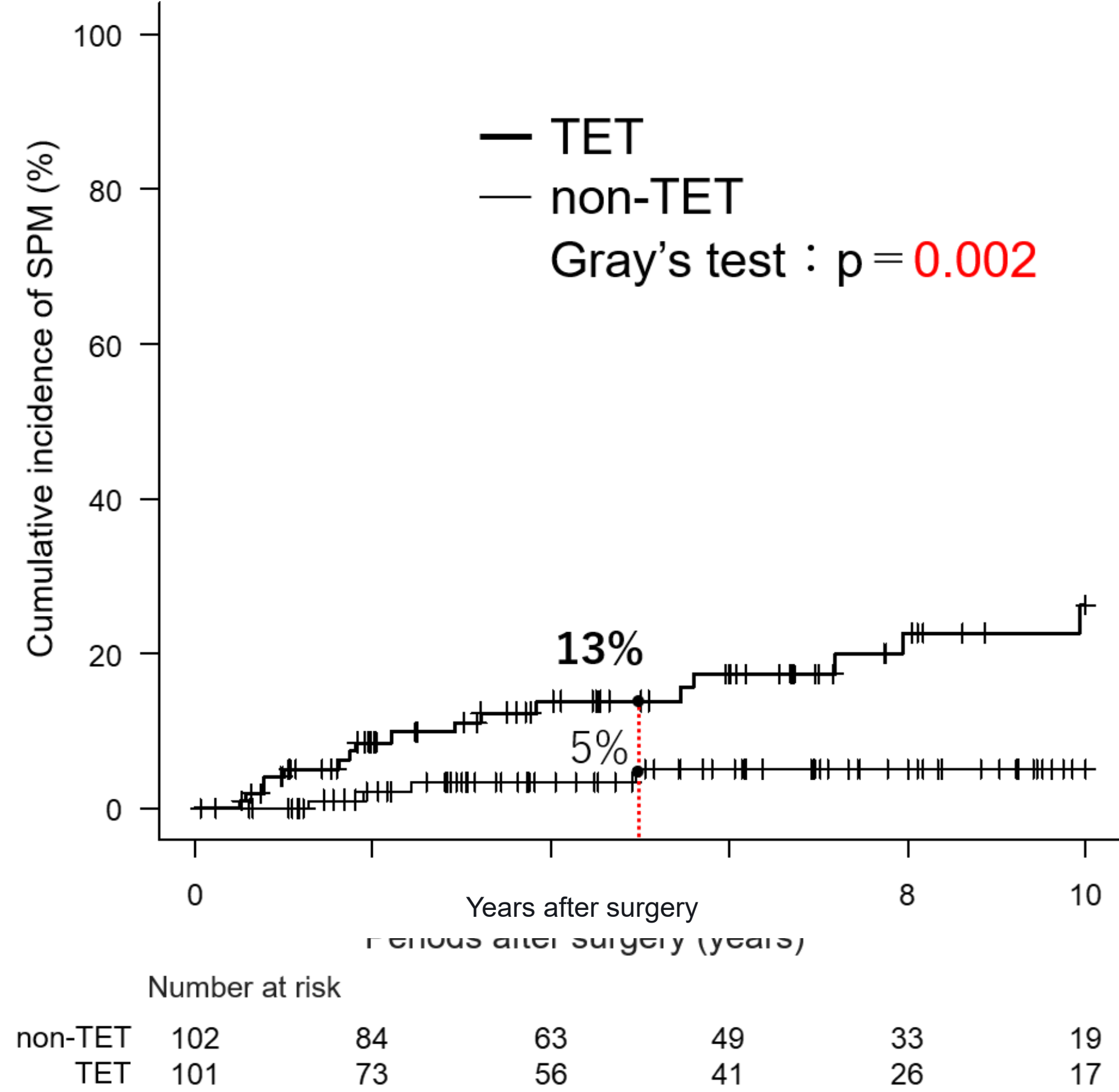
Age and TET independently predicted SPM.

B. Mortality risk factors (multivariable Cox model)		
Factor	HR (95% CI)	P
Age at thymectomy (per year)	1.02 (0.98–1.05)	0.33
Male sex (vs female)	1.34 (0.53–3.41)	0.54
TET (vs non-TET)	1.67 (0.62–4.49)	0.31
Total thymectomy (vs partial)	1.40 (0.51–3.79)	0.51
Prior malignancy (yes vs no)	4.46 (1.72–11.55)	0.002

Prior malignancy independently predicted mortality.

TET subgroup (exploratory)

C. Cumulative incidence of SPM

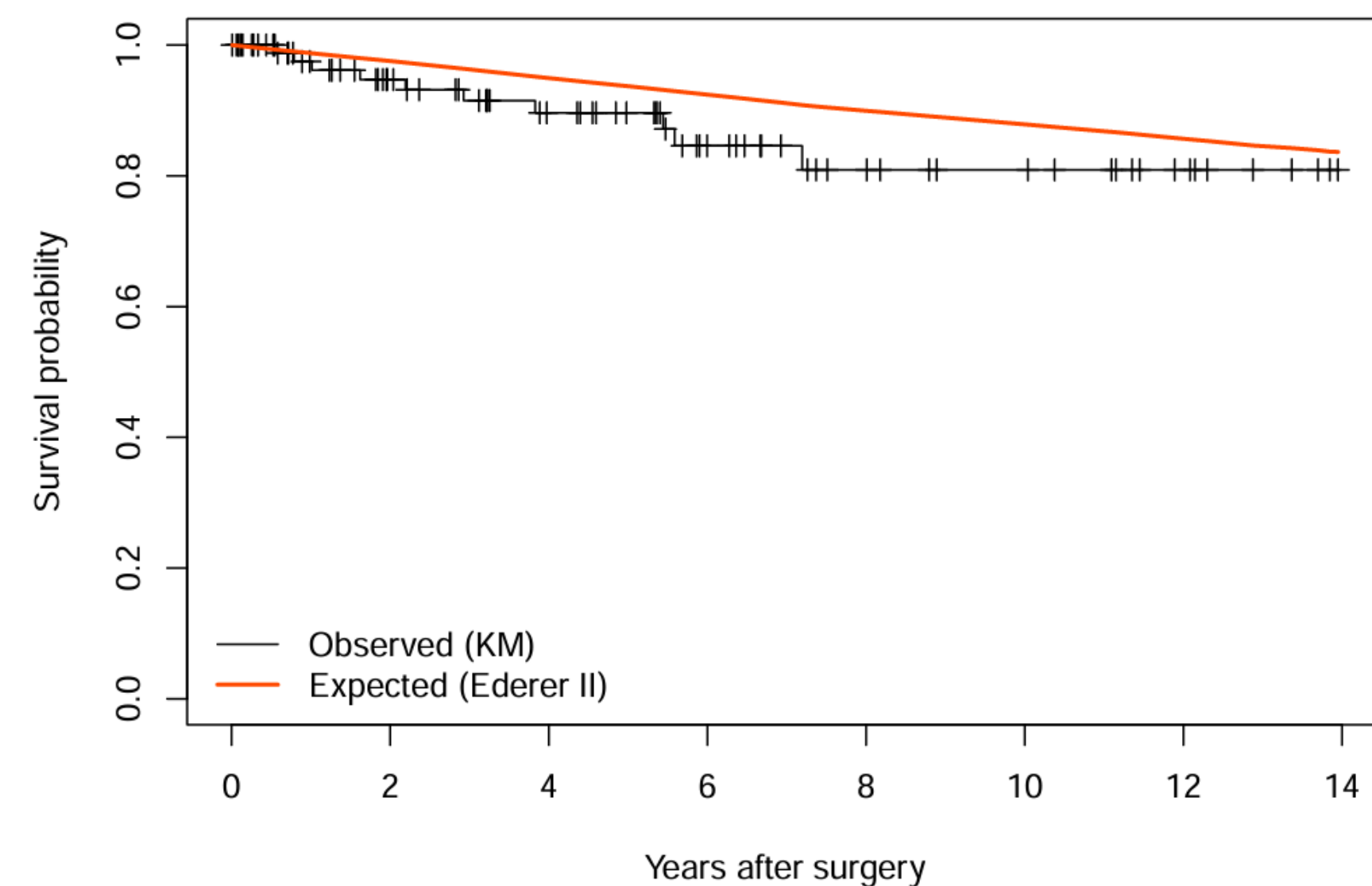


5-year SPM: 13% (TET) vs 5% (non-TET), P=0.002.

D. SPM risk factors within TET (multivariable Fine–Gray; exploratory)		
Factor	sHR (95% CI)	P
Myasthenia gravis	0.48 (0.12–1.20)	0.30
Tumor size >5 cm	2.98 (1.08–8.23)	0.035
Type A/B3/TC vs AB/B1/B2	2.81 (0.69–11.40)	0.15
Type B3/TC vs others	0.72 (0.12–4.20)	0.72
Incomplete resection (R1–2 vs R0)	1.40 (0.39–5.04)	0.61

TET: tumor >5 cm predicted SPM (sHR 2.98, P=0.035).

E. Descriptive SPM-free survival (TET)

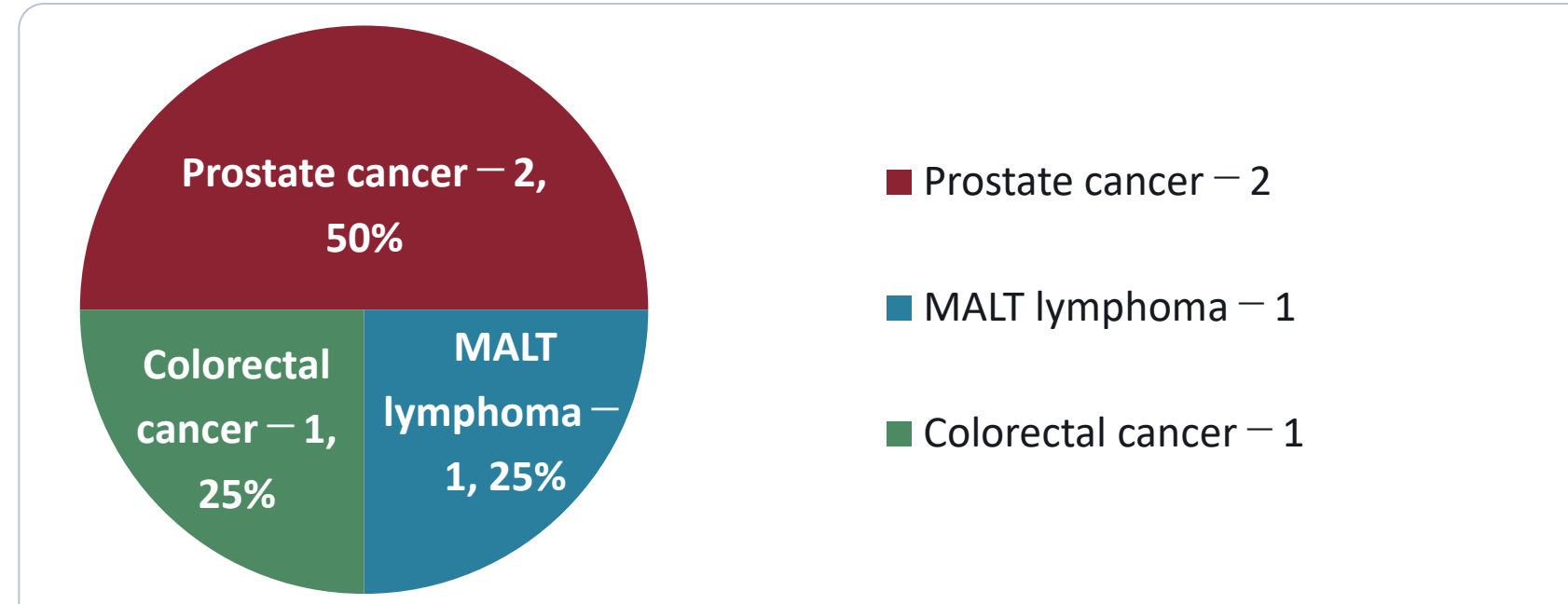


Observed SPM-free survival appeared lower than expected in TET (descriptive comparison).

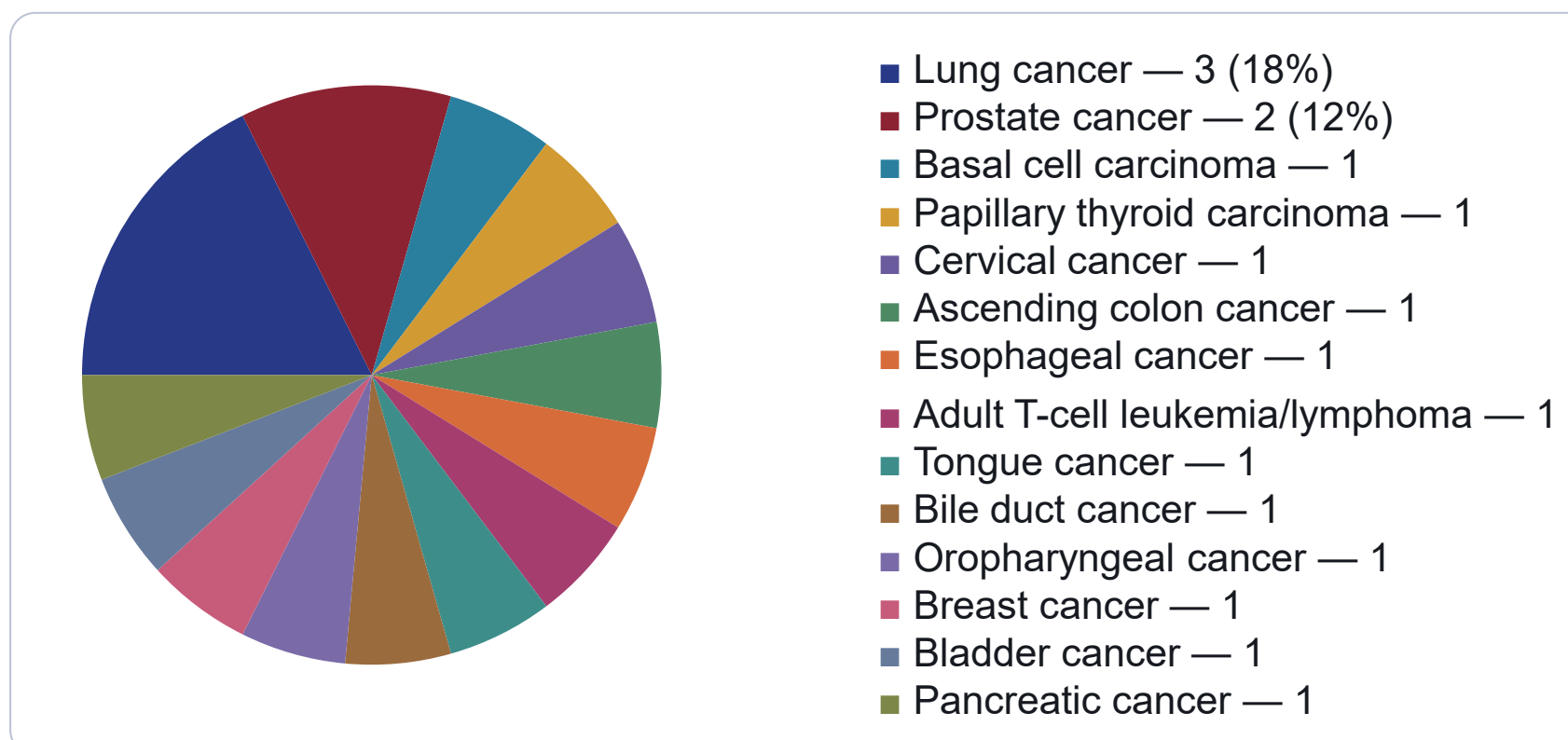
SPM SPECTRUM & KEY FINDINGS

F. Spectrum of second primary malignancies

Non-TET (n = 4; 3 cancer types)



TET (n = 17; 14 cancer types)



TET SPMs spanned 14 types (17 events); lung cancer was most frequent (n=3).

KEY FINDINGS

- TET independently predicted SPM (sHR 6.67, P<0.001).
- Within TET, tumor >5 cm predicted SPM (sHR 2.98, P=0.035).
- Prior malignancy—not TET—predicted mortality (HR 4.46, P=0.002).

INTERPRETATION & REFERENCES

DISCUSSION

SPM risk was concentrated in TET, whereas mortality was not associated with TET status. Findings align directionally with Kooshesh et al.¹⁾ and Resio et al.²⁾ and complement Japanese reports by Masaoka et al.⁴⁾ and Hamaji et al.⁵⁾

LIMITATION

Single-center design, 21 SPM events, and no non-surgical TET control; the effects of TET and thymectomy cannot be separated.

CONCLUSION

TET was associated with higher SPM risk. The tumor-size finding requires external validation.

REFERENCES

- Kooshesh et al. N Engl J Med. 2023;389:406–417.
- Resio et al. J Thorac Oncol. 2026;21:186–194.
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- Masaoka et al. Eur J Cardiothorac Surg. 1994;8:251–253.
- Hamaji et al. Interact Cardiovasc Thorac Surg. 2019;29:729–736.

ABBREVIATIONS

CI, confidence interval; HR, hazard ratio; MG, myasthenia gravis; sHR, subdistribution hazard ratio; SPM, second primary malignancy; TC, thymic carcinoma; TET, thymic epithelial tumor.