

P3.389: Prognostic Determinants Beyond The 9th Edition TNM In Thymoma With Mediastinal Organ Invasion: Results From The Italian Nationwide TYME Database

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INTRODUCTION

The 9th edition TNM classification has refined anatomical staging for thymic epithelial tumors, but its prognostic performance in patients undergoing extended resections remains unclear. The impact of the number and type of mediastinal structures resected is still debated. We aimed to evaluate oncologic outcomes in thymomas with at least one mediastinal organ resected and to assess whether patterns of anatomical invasion provide prognostic information beyond TNM staging.

METHODS

- **178 p-stage pT2-pT4 N0 M0 (TNM 9th ed.) thymomas** (1984-2025).
- **ThYmic MalignanciEs (TYME) Italian Registry.**
- Endpoints: **FFR** and **CSS**.
- *Multivariate adjusted for pT category, histological grade (low-grade: A/AB/B1 vs high-grade: B2/B3), and radicality.

CONTACT INFORMATION

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RESULTS

178 thymomas with mediastinal organ invasion

Variable	Overall cohort
Age, median (IQR), years	57 (49–66)
Sex	
Male	97 (54.5%)
Female	81 (45.5%)
Pleural effusion	10 (5.6%)
pT (9th TNM ed.)	
pT2	144 (80.9%)
pT3	26 (14.6%)
pT4	8 (4.5%)
WHO histology	
Low-grade	68 (39.1%)
High-grade	106 (60.9%)
Recurrence	56 (31.5%)
Cancer-specific death	8 (4.5%)
5-year FFR	69%
10-year FFR	39%
5-year CSS	99%
10-year CSS	95%

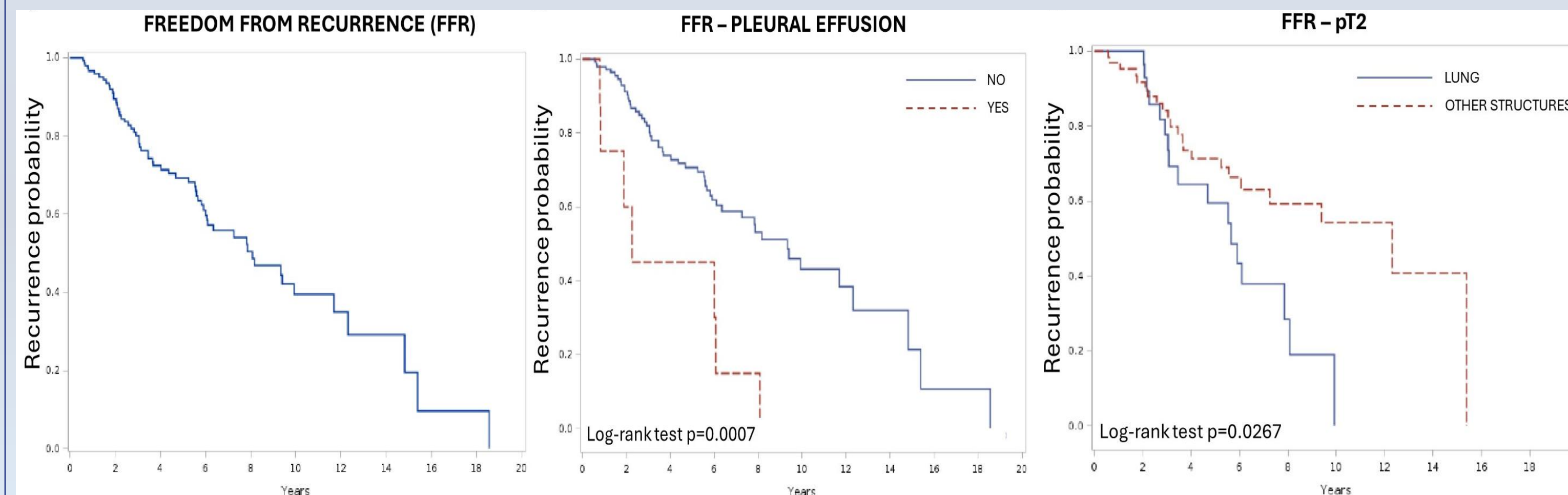
Variable	Overall cohort
Complete resection (R0)	157 (88.2%)
Number of resected mediastinal structures	
1 structure	122 (68.5%)
>1 structures	56 (31.5%)
>2 structures	15 (8.4%)
Main resected structures	
Pericardium	109 (61.2%)
Lung	55 (30.9%)
Vessel	13 (7.3%)
Phrenic nerve	1 (0.6%)
Type of reconstruction	
Pericardial	12 (6.7%)
Vascular	10 (5.6%)
Diaphragmatic	1 (0.6%)

Independent predictors of FFR*

Variable	HR	95% CI
Pleural effusion	2.93	1.03–8.28
ECOG PS ≥2	131.6	8.0–2160.9

Stage-specific analysis

- pT2: Lung invasion associated with worse FFR (HR 2.07, 95% CI 1.07–4.00; p=0.030)
- pT3: No significant association between the type of involved structure and FFR (p=0.780)



DISCUSSION AND CONCLUSION

Take Away Messages

- The prognostic impact of anatomical invasion appears **stage-dependent** in thymoma requiring extended thymectomy.
- **Pleural effusion** independently predicts recurrence beyond conventional TNM descriptors.
- **Lung involvement** identifies a higher-risk subgroup within **pT2 disease**, whereas pT3 tumors appear more homogeneous.

Future Direction for Research

- Future models should integrate anatomical, radiological, and host-related factors beyond TNM staging.

REFERENCES

