

P3.14: Validating 9th TNM edition staging for thymoma. Improved 10 year overall and disease free survival of patients with primary thymoma less than 5cm.

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INTRODUCTION

Various systems for staging thymomas have been used over the years including the Masaoka-Koga staging system and the newest 9th edition TNM staging introduced in 2023.

The 9th edition subdivides tumour stages into T1a and T1b based on size, using a cut-off of 5cm, while the 8th edition does not account for size.

We would like to validate the revised TNM 9th edition staging for thymoma on survival in our mixed Asian population.

Study Objectives: Evaluate the impact of the 9th edition TNM thymoma staging system on overall survival (OS) and disease free survival (DFS).

METHODS

Design:

Institutional thoracic surgery database was reviewed

Excluded: thymic tissue without thymoma, any other anterior mediastinal mass

Final cohort defined - See Patient Population, Results

To compare surgical approach:

- Pearson Chi-square test with Yates Continuity Correction
- Likelihood-Ratio test
- Fischer's Exact Test

To compare OS and DFS:

- Pearson Chi-square test with Yates Continuity Correction
- Likelihood-Ratio test
- Fischer's Exact Test
- Linear-by-Linear Association test
 - Significance was taken at p-values ≤ 0.050

Parameters:

- Variables reviewed: gender, age

DISCUSSION AND CONCLUSION

Actionable Take Away Message

- The 5-cm appeared to only discern between stage 1 disease and only affects OS and DFS at 10-years.
- Subcentimetre incrementation in tumour size may affect OS and DFS.

Future Direction for Research

- Further analysis is limited by the lack of LN data not routinely performed for thymic surgeries in the past. More can be studied to better evaluate outcome in thymoma patients.

REFERENCES & ACKNOWLEDGEMENTS

TNM Staging System in Thymoma: A Critical Appraisal?:

<https://pmc.ncbi.nlm.nih.gov/articles/PMC10817025/>

Clinical Evaluation of T Component in the Ninth Edition TNM Classification of Thymic Epithelial Tumors:

<https://onlinelibrary.wiley.com/doi/10.1111/1759-7714.70189>

Updates on the Version 9 American Joint Committee on Cancer Staging System for Thymic Malignancies:

<https://link.springer.com/article/10.1245/s10434-025-17817-5>

RESULTS

Patient population:

253 patients with thymoma or thymic carcinoma included
mean age: 56.83 $\pm$ 13.77 years

139 (54.9%) female

114 (45.1%) male

Impact of primary tumour cut off at 5 cm on outcomes:

Outcome	Tumour <5 cm	Tumour >5 cm	Effect	Interpretation:
Masaoka Stage I disease	More likely	Less likely	OR 2.04 95% CI 1.06–3.94 p = 0.024	Tumours <5 cm were ~2× more likely to be associated with Stage I disease
10-year OS	Better	Worse	OR 0.31 95% CI 0.12–0.81 p = 0.014	Tumours >5 cm were associated with substantially poorer 10-year OS
10-year DFS	Better	Worse	OR 0.28 95% CI 0.11–0.74 p = 0.008	Tumours >5 cm were associated with substantially poorer 10-year DFS

Impact of 1 cm incremental increase in primary tumour size on OS and DFS:

Tumour size	3-year DFS	Patients disease-free
<4cm	93.6%	44/47
>4cm	80.3%	61/76

Interpretation:

Patients with primary tumour more than 4-cm had **significantly lower DFS** than those with primary tumour less than 4-cm at 3-year (p = 0.034).

Tumour size	Outcome	Effect	95% CI	p-value
>3cm	10-year OS	OR 0.13	0.02–1.09	0.031
	10-year DFS	OR 0.12	0.01–1.02	0.026

Interpretation:

Significantly lower OS and DFS were observed in patients with primary tumour size of more than 3-cm at 10-years.