

2023 대한심장혈관흉부외과학회

# 제55차 추계학술대회 & APELSO 2023

2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

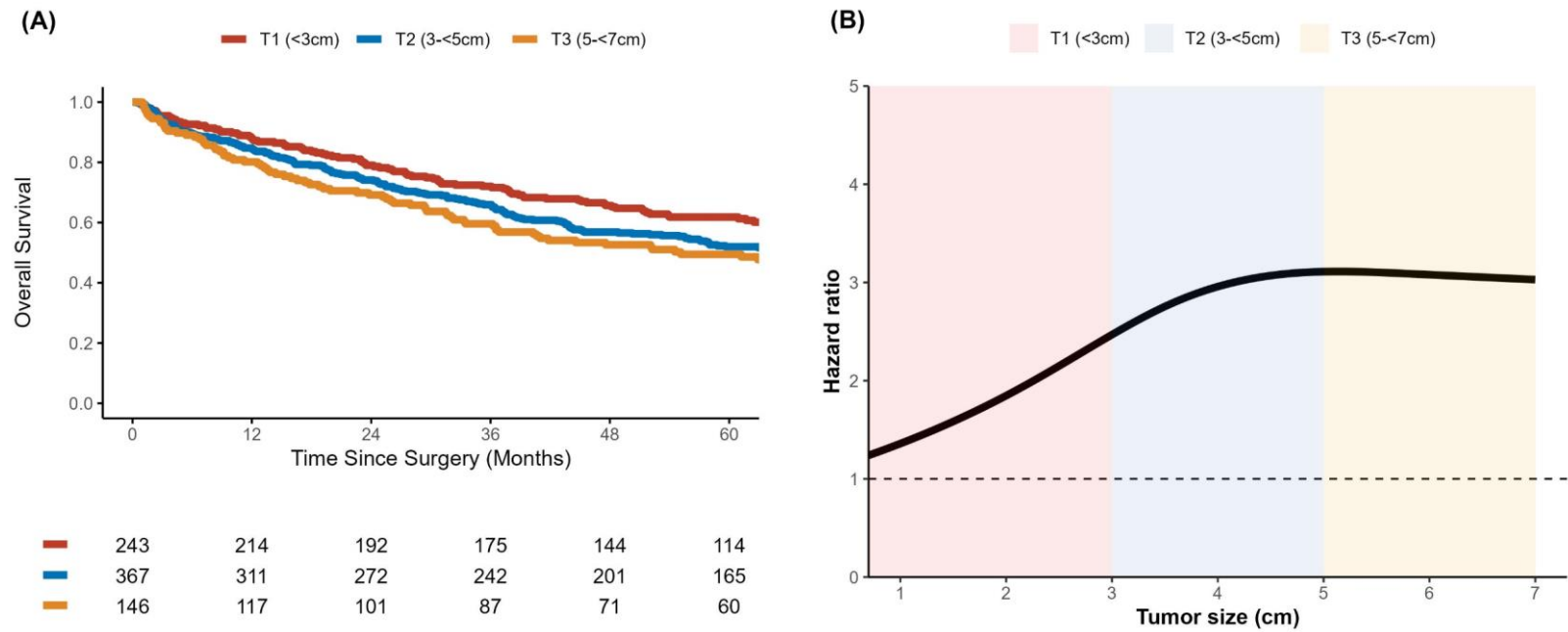
## A Closer Look at the Tumor Size In N2 Non-small Cell Lung Cancer with Trimodality Therapy: By Clinical N Subclassification and Histology



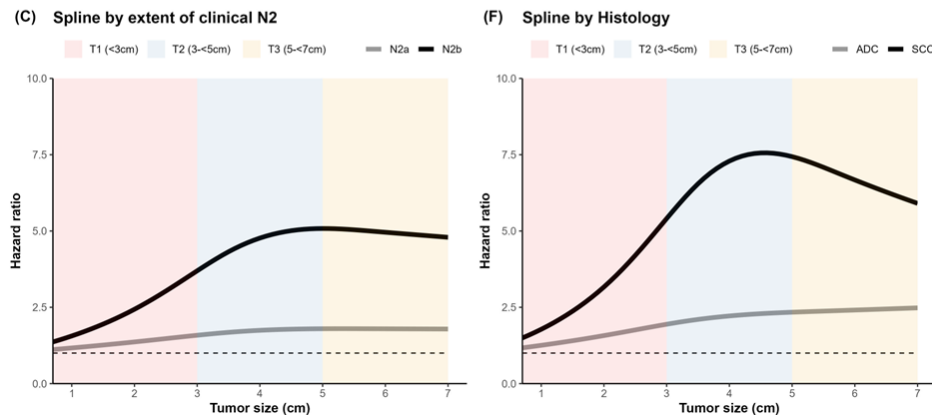
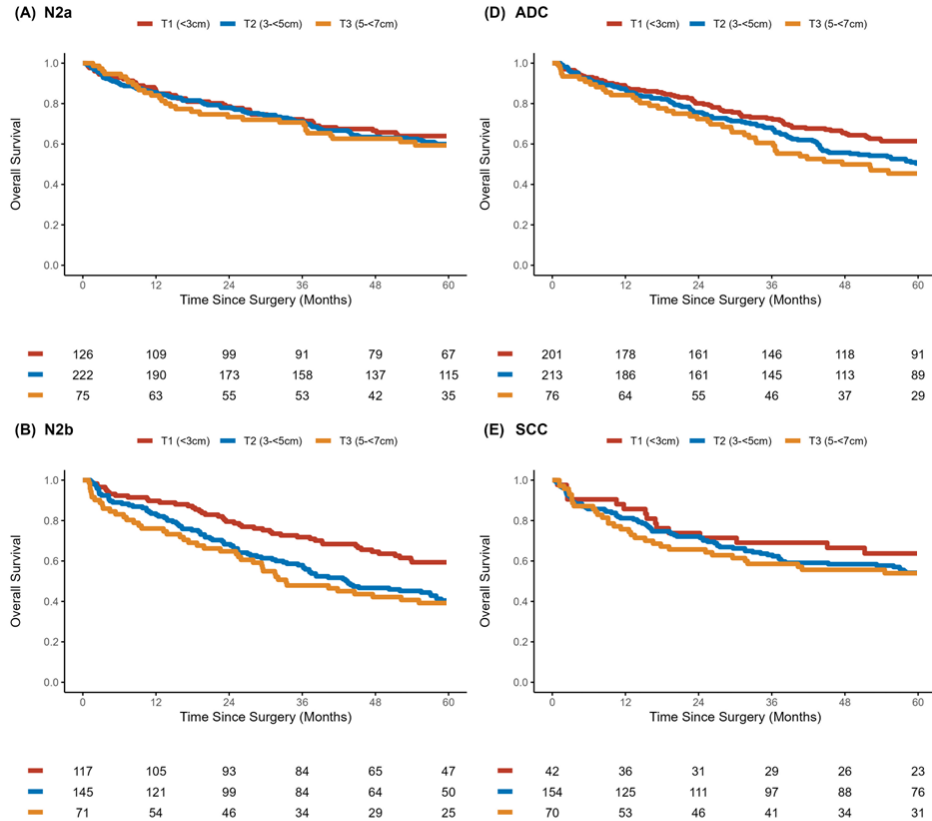
- Tumor size has been recognized as an important factor for the prognosis of non-small cell lung cancer
- With refined TNM classification considering tumor size, previously diagnosed stage IIIA NSCLCs are now upstaged to stage IIIB (T3-4N2M0)
  - 6<sup>th</sup> edition of TNM: T1 <3cm, T2 >3cm
  - 7<sup>th</sup> edition of TNM classification; T1 <3cm, 3cm < T2 < 7cm, 7cm < T3
  - 8<sup>th</sup> edition of TNM classification: T1 < 3cm, 3cm < T2 <5cm, 5cm < T3 < 7cm, 7cm < T4
- These patients (T3-4N2M0) may not be considered for neoadjuvant therapy as physicians adopt the clinical TNM into their practice. This practice may lead to under-treatment and deprive patients of their potential chance for a cure
- We aim to evaluate the association between tumor size and mortality in patients with N2 NSCLC who had trimodality therapy

- **Design:** A cohort study using the institutional thoracic surgery registry
- **Study population:** Patients with histologically confirmed clinical stage III (T1-T3) non-small cell lung cancer who underwent trimodality therapy\*
- **Period:** January 2003 – February 2019
- **Exclusion criteria:** Patients who had not undergone 1) PET study (n=19) or 2) invasive mediastinal examination (n=58); 3) Patients with T3 tumors containing invasive component (n=20) or additional nodules (n=39); 4) Histology other than adenocarcinoma or squamous cell carcinoma (n=64)
- **Study participants,** N=756
- **Measurements:**
  - 1) Clinical tumor size: by pre-treatment CT imaging. Continuous values were categorized by 8<sup>th</sup> edition of TNM system (T1, T2, and T3)
  - 2) Extent of clinical N2 disease: N2a (single station N2) and N2b (multiple station n2)
- **Study outcome:** overall survival
- **Statistical analysis:** Survival analysis by **Kaplan-Meier method** and **log-rank test**. Hazard ratios were estimated using **Cox proportional hazard model** and **adjusted** for age, sex, smoking history, Charlson comorbidity index, extent of N2, and histology. The **restricted cubic spline method** was used to provide a flexible dose-response relationship between clinical tumor size and outcome. Subgroup analysis was performed by extent of clinical N2 and histology

\*Trimodality therapy: neoadjuvant concurrent chemoradiotherapy followed by surgery



	T1 (<3cm)	T2 (3-<5cm)	T3 (5-<7cm)
Overall			
Case (IR for 1,000 people)	108 (85.9)	207 (107.6)	83 (126.3)
HR (95% CI)	Reference	1.46 (1.14-1.85)	1.48 (1.10-1.99)



	T1 (<3cm)	T2 (3-5cm)	T3 (5-7cm)
<b>Extent of clinical N2</b>			
<b>N2a (N = 423)</b>			
Case (IR for 1,000 people)	54 (78.4)	112 (87.4)	35 (87.6)
HR (95%CI)	Reference	1.21 (0.87-1.69)	1.15 (0.75-1.78)
<b>N2b (N = 333)</b>			
Case (IR for 1,000 people)	54 (95)	95 (148.1)	48 (186.3)
HR (95%CI)	Reference	1.69 (1.20-2.39)	1.81 (1.21-2.72)
<b>Histology</b>			
<b>Adenocarcinoma (N = 490)</b>			
Case (IR for 1,000 people)	89 (86)	125 (115.7)	47 (139.9)
HR (95%CI)	Reference	1.55 (1.17-2.04)	1.50 (1.04-2.15)
<b>Squamous cell carcinoma (N = 266)</b>			
Case (IR for 1,000 people)	19 (85.5)	82 (97.3)	36 (112)
HR (95%CI)	Reference	1.38 (0.83-2.29)	1.40 (0.80-2.45)

Abbreviations: IR, incidence rate.

Adjusted for age, sex, smoking status, Charlson comorbidity index, clinical N category (N2a vs N2b), and histology

- In this study, larger tumor size was associated with higher mortality in patients with N2 NSCLC who had trimodality therapy
- The risk varied depending on the extent of clinical N2 and histology type: trimodality might be most beneficial to patients with N2a NSCLC regardless of tumor size and N2b NSCLC with T1 tumor
- It would be recommended to take multimodal approaches for the treatment of patients within the different subsets of N2 NSCLC: unresectable N2 NSCLC may become resectable, and surgery may add to survival by increasing locoregional control rates.
- While further study with a larger sample size with different N2 patients would be required to confirm the study findings, it might be a good strategy to stratify N2 patients based on tumor size, nodal extent, and histology to provide the most beneficial treatment