



Serum biomarker-defined phenotypes reveal prognostic heterogeneity and EGFR-modified outcomes in lung adenosquamous carcinoma and adenocarcinoma

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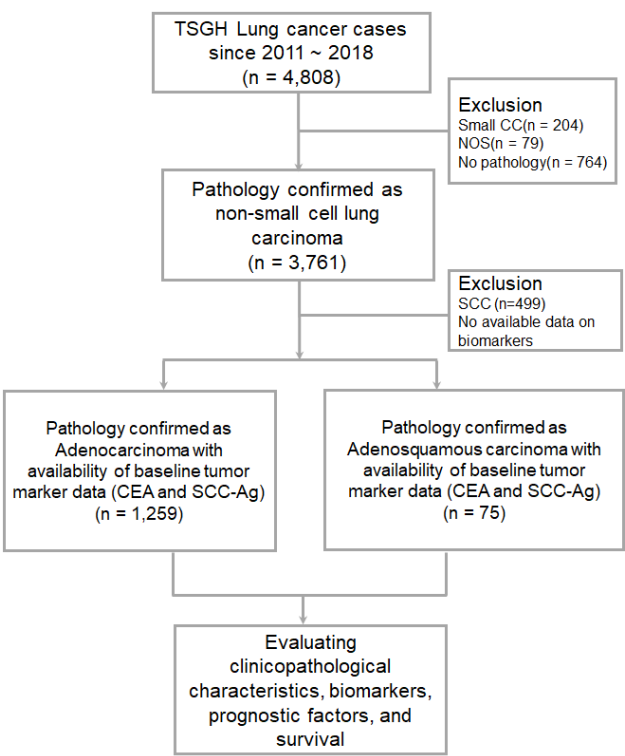
INTRODUCTION

- Lung adenosquamous carcinoma (ASC) is a rare, aggressive NSCLC subtype with mixed glandular and squamous differentiation (<5% of lung cancers).
- EGFR mutations improve outcomes in adenocarcinoma (ADC), but their prognostic value in ASC is unclear.
- Lineage-associated serum biomarkers — CEA (adenocarcinoma) and SCC-Ag (squamous) — are routinely available but underused for capturing tumor heterogeneity.
- Aim: Determine whether the EGFR survival benefit is preserved in ASC, and whether CEA/SCC-Ag-defined phenotypes identify high-risk subgroups across NSCLC.

METHODS

Design:

- Retrospective, single-center study (Tri-Service General Hospital, Taipei; 2011–2018). Registry of **4,808** lung cancer patients: ADC (n=3,169), SCC (n=499), small cell (n=204), **ASC (n=75)**.
- Primary analysis cohorts: confirmed ADC and ASC (n=75). Variables: age, sex, BMI, ECOG PS, smoking, stage (TNM), EGFR (exon 19 del / L858R), baseline CEA (>5 ng/mL) and SCC-Ag (>2 ng/mL), treatment, overall survival (OS).
- Analysis: Kaplan–Meier (log-rank) and Cox regression.
- IRB approved (A202605022).



DISCUSSION AND CONCLUSION

Actionable Take Away Message

- ASC is a high-risk subgroup with poor survival regardless of EGFR mutation status — histological context still matters in the targeted-therapy era.
- Simple, low-cost serum biomarkers (CEA + SCC-Ag) identify a high-risk "squamous-like" subgroup within adenocarcinoma.

Future Direction for Research

- Integrating histology + molecular status + serum biomarkers may refine risk stratification and guide therapy beyond standard EGFR-targeted approaches.
- Prospective validation with spatial pathology and single-cell profiling is needed to clarify lineage plasticity and treatment resistance in ASC.

REFERENCES & ACKNOWLEDGEMENTS

List the most critical references and recognize any support or contributions from others

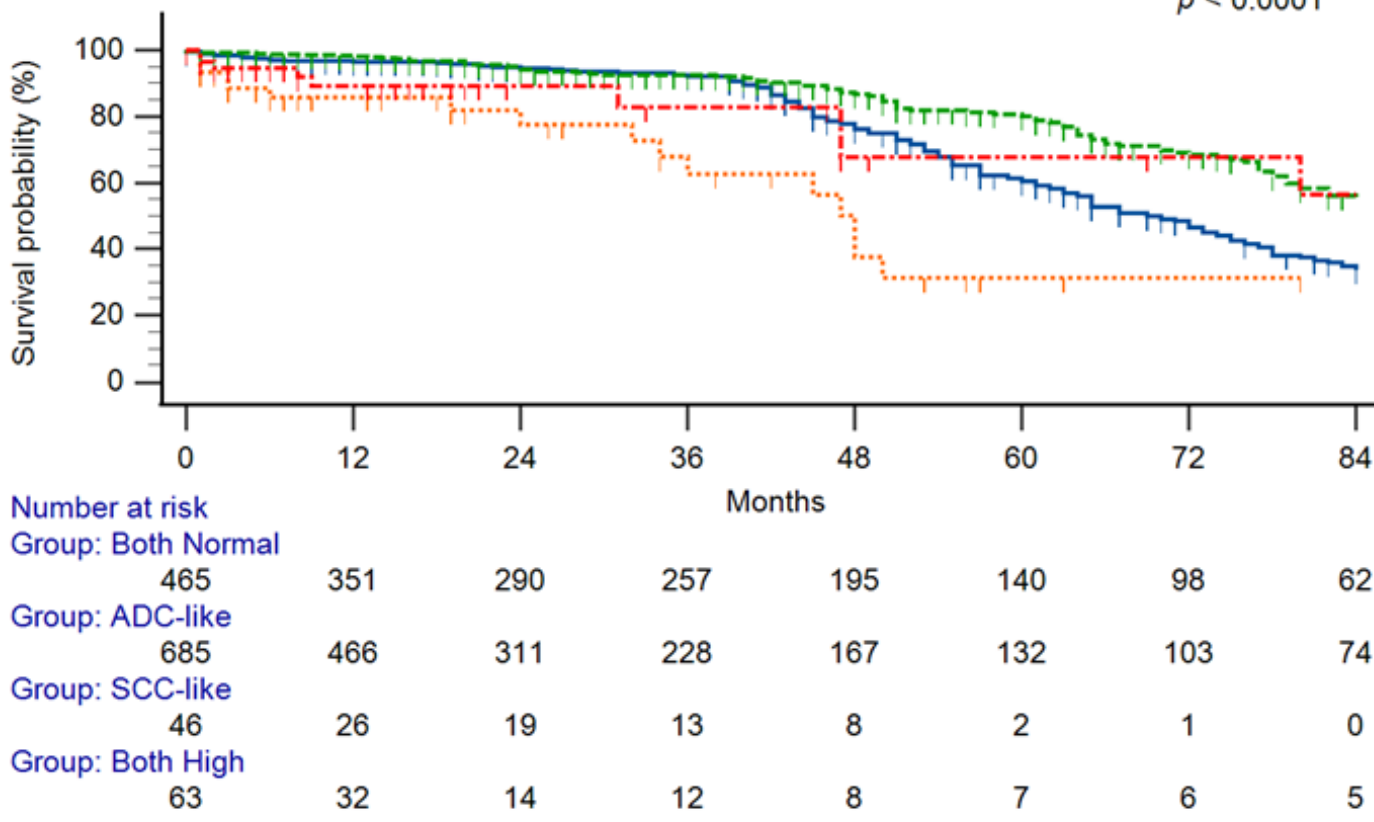
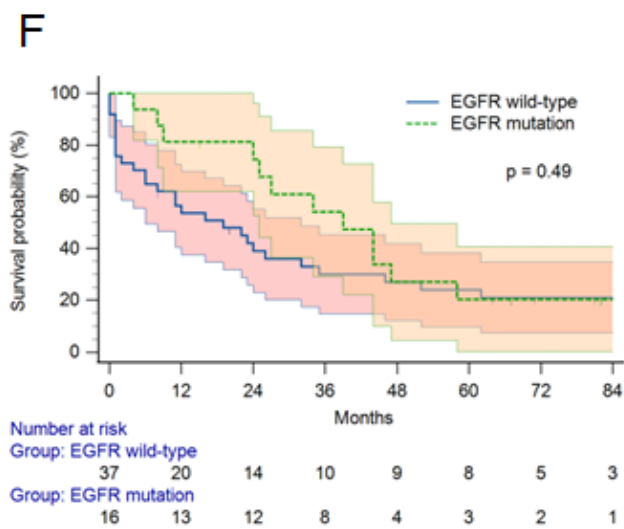
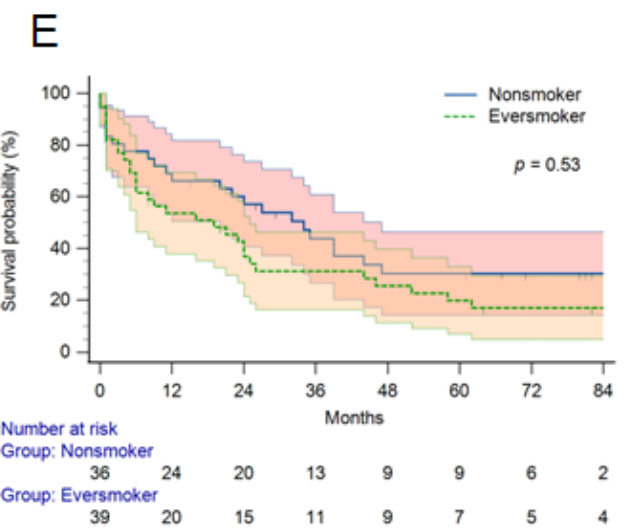
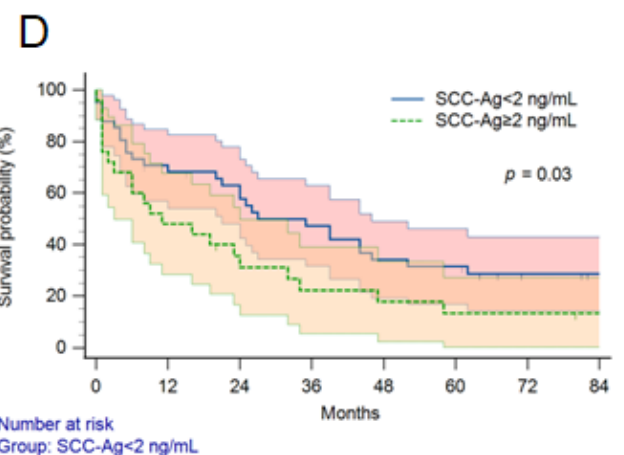
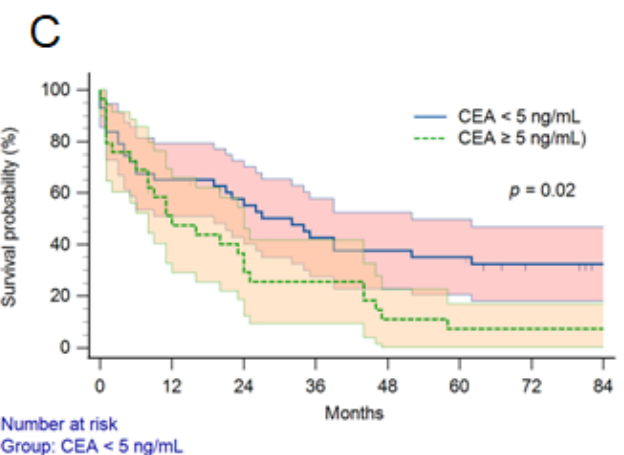
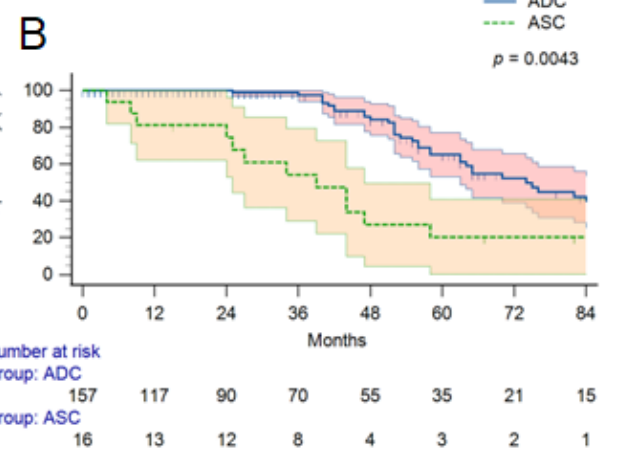
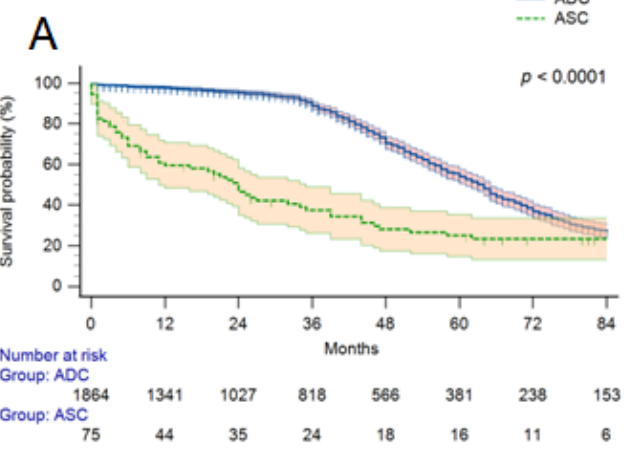
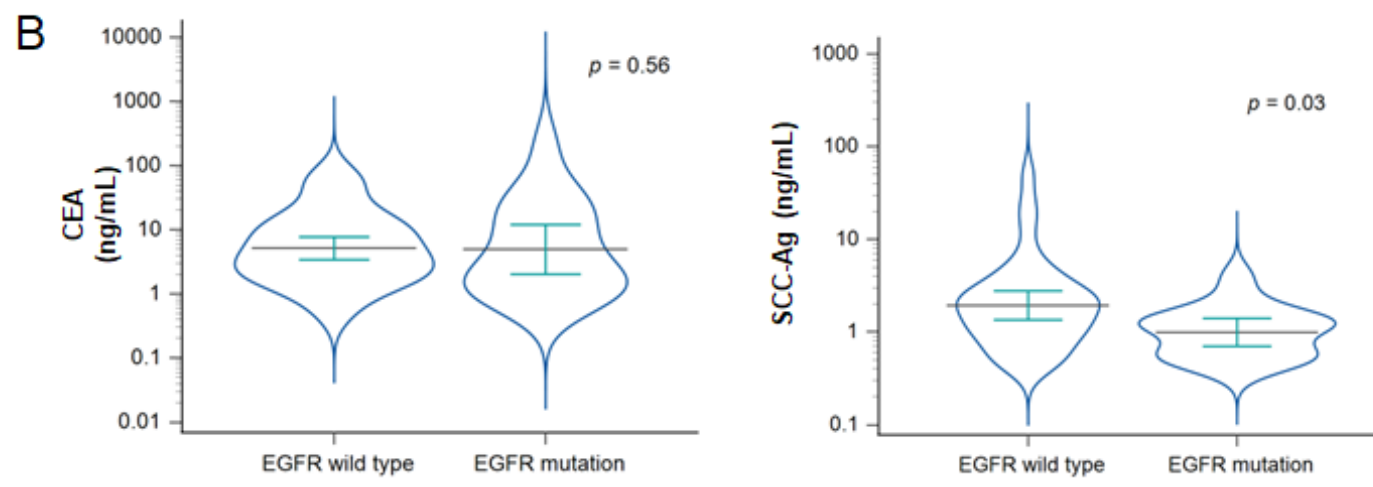
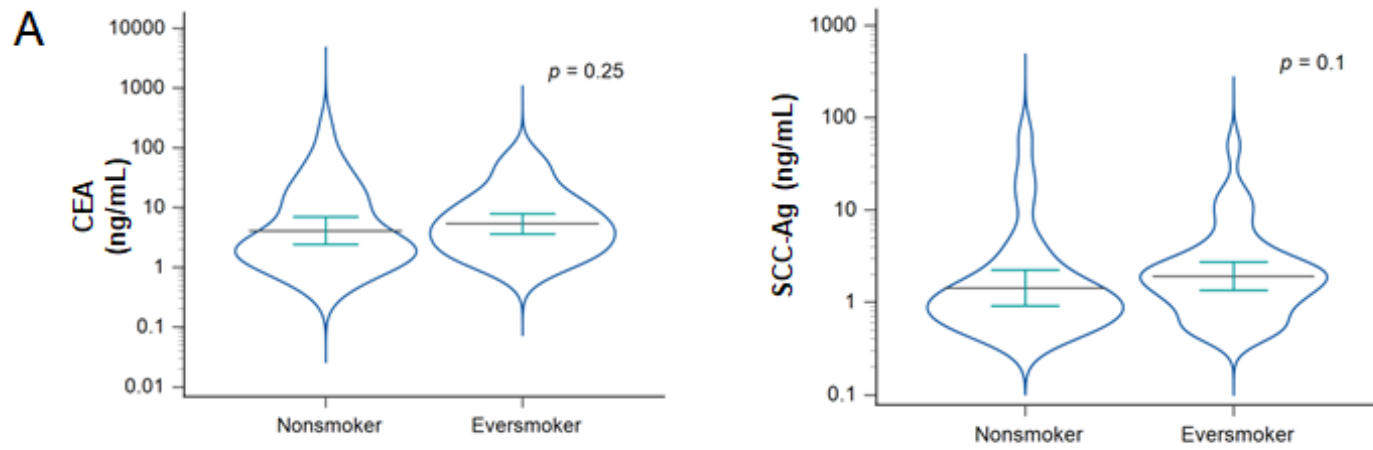
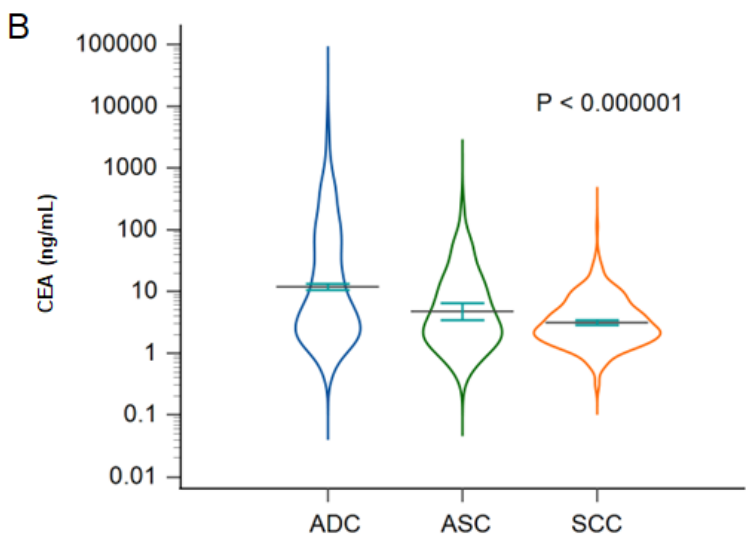
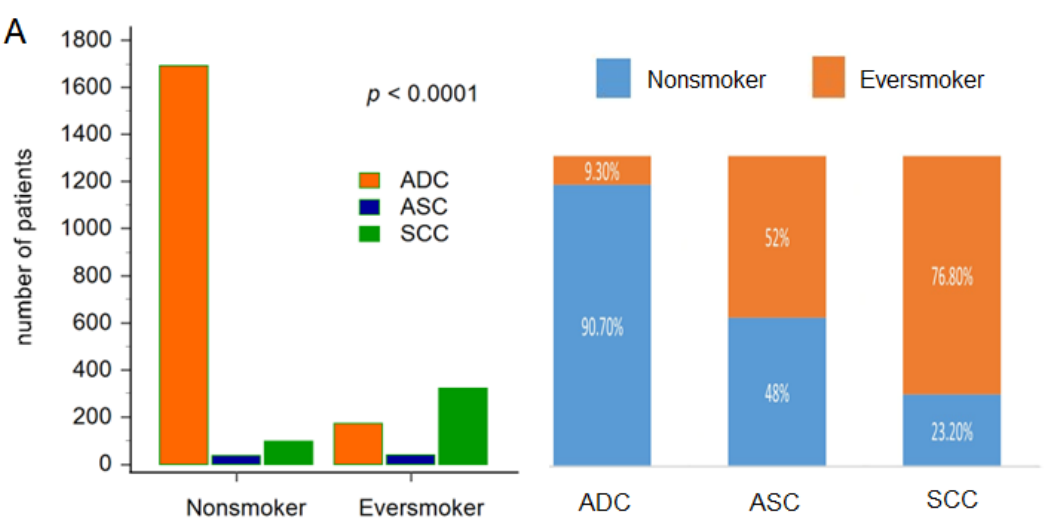


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RESULTS

ASC shows clinicobiological features intermediate between ADC and SCC, yet carries significantly worse survival — even in EGFR-mutant tumors. Serum CEA/SCC-Ag phenotypes further stratify risk within ADC.



Number at risk	465	351	290	257	195	140	98	62
Group: Both Normal								
Group: ADC-like	685	466	311	228	167	132	103	74
Group: SCC-like	46	26	19	13	8	2	1	0
Group: Both High	63	32	14	12	8	7	6	5