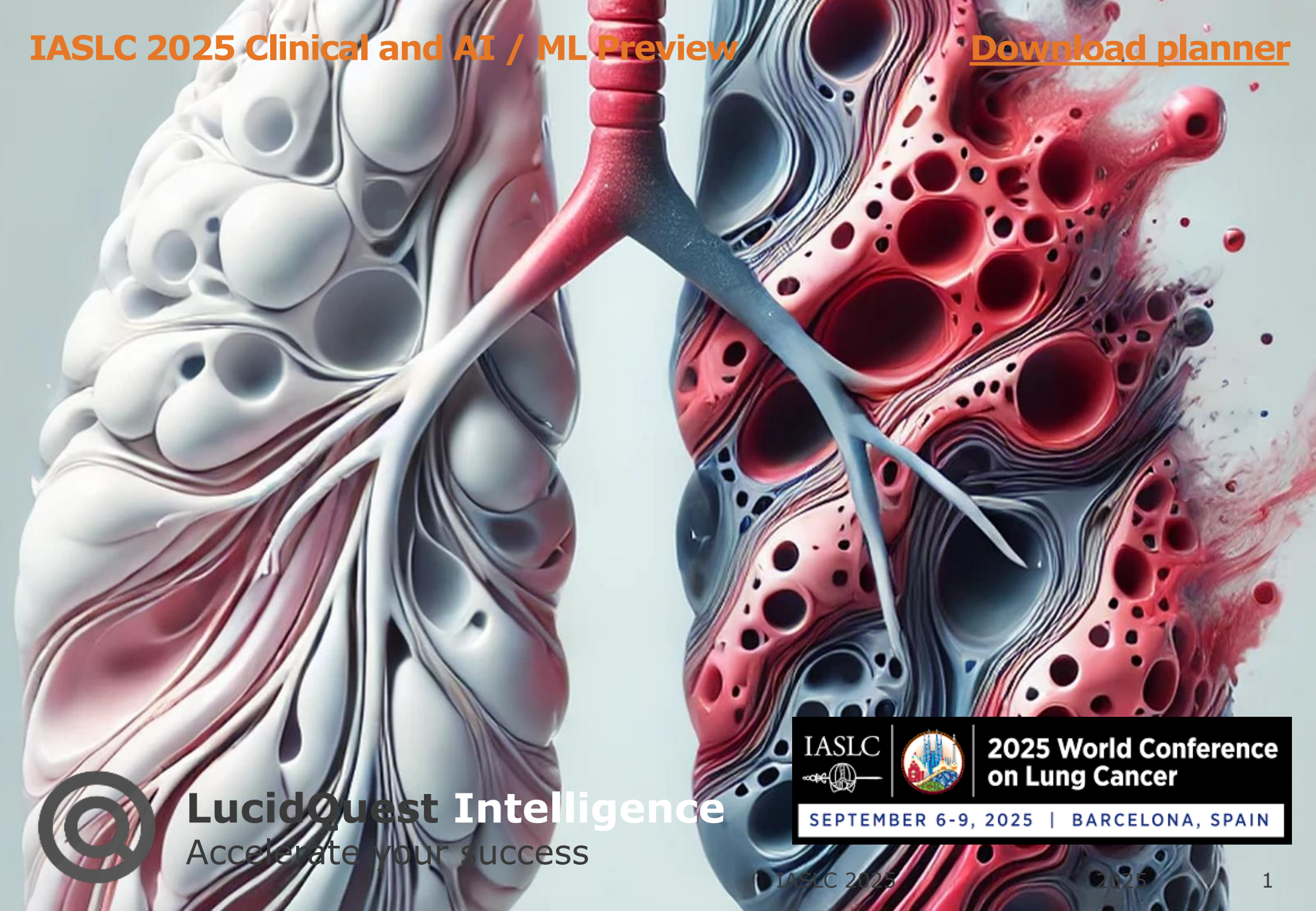
IASLC 2025 Clinical and AI / ML Preview

Download planner



IASLC 2025 World Conference on Lung Cancer

SEPTEMBER 6-9, 2025 | BARCELONA, SPAIN

LucidQuest Intelligence

Accelerate your success

IASLC 2025 Preview – Table of Contents

IASLC 2025 – General Overview

- **Global participation:** Thousands of clinicians, researchers, and patient advocates will gather to advance lung cancer diagnosis, treatment, and survivorship care worldwide
- **Multidisciplinary agenda:** Sessions will span medical oncology, thoracic surgery, radiation oncology, translational research, molecular pathology, and real-world evidence across all lung cancer subtypes
- **Innovation spotlight:** Novel immunotherapies, targeted agents, antibody-drug conjugates, and combination strategies are set to shape the evolving therapeutic landscape
- **Patient-centered outcomes:** Focus on quality of life, treatment tolerability, symptom management, and real-world effectiveness, are set to inform holistic care strategies
- **Early detection and screening:** Advances in liquid biopsy, AI-assisted imaging, and biomarker-driven risk assessment aim to redefine early-stage lung cancer identification
- **Digital and precision care:** Remote monitoring, personalized treatment algorithms, and multi-omic profiling aim to support precision therapy and equitable access to care

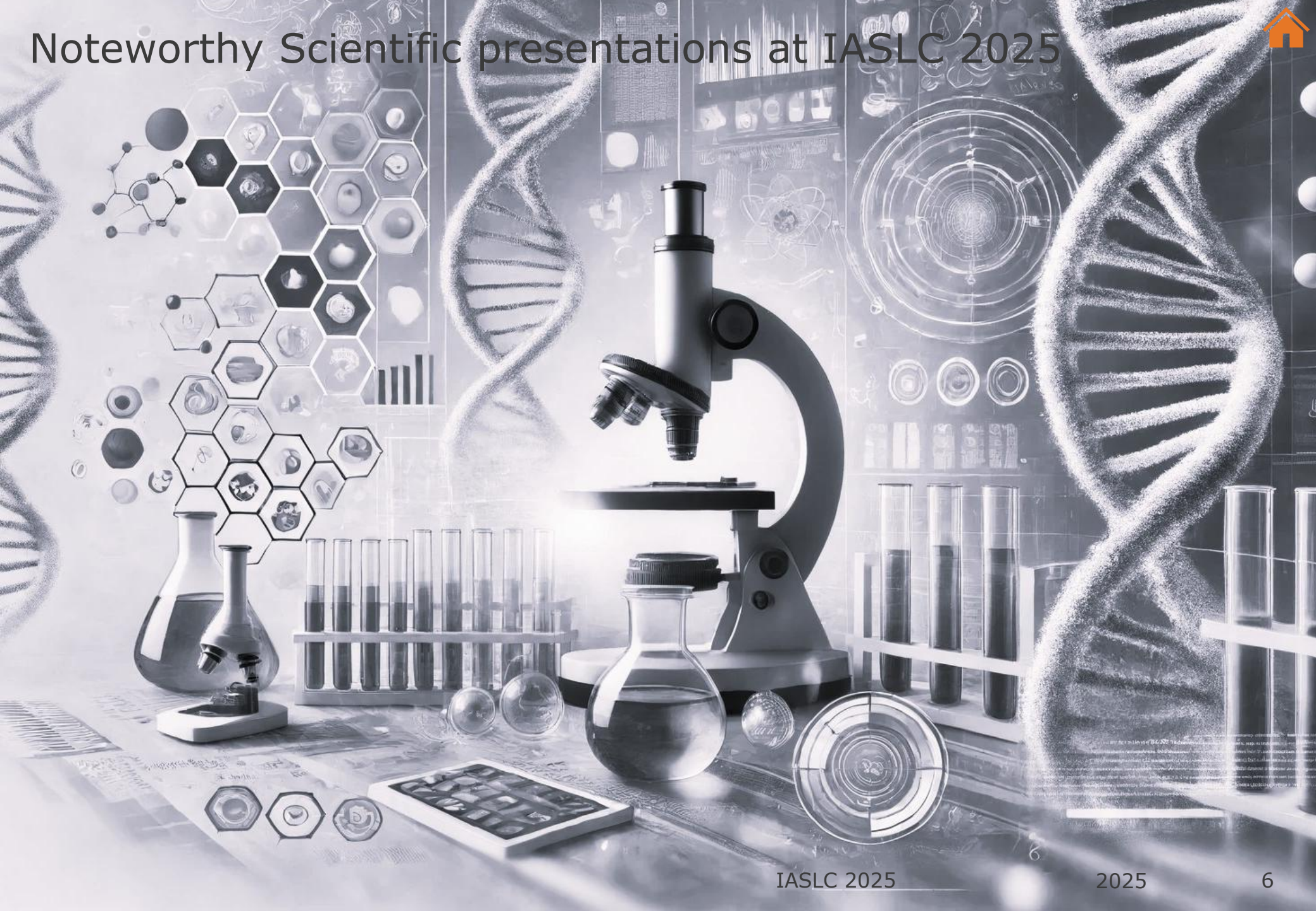
IASLC 2025– Conference Themes (1/2)

- **Immunotherapy advances:** Novel checkpoint inhibitors, bispecific antibodies, and combination strategies will redefine treatment paradigms across NSCLC, SCLC, and rare thoracic tumors
- **Targeted therapies:** Emerging KRAS, EGFR, ALK, and MET inhibitors expected to enhance precision care, overcoming resistance and improving patient outcomes
- **Molecular biomarkers & genetics:** Expanded genomic profiling and liquid biopsies analyses will guide individualized therapy selection and minimal residual disease monitoring
- **Early detection & screening:** AI-assisted imaging, ctDNA surveillance, and risk-stratified protocols will improve stage-shift and survival in high-risk populations
- **Real-world evidence:** Integration of registry data, wearable technology, and patient-reported outcomes set to optimize treatment strategies and address disparities in care delivery

IASLC 2025– Conference Themes (2/2)

- **Resistance mechanisms:** Novel insights into immune escape, genomic evolution, and tumor microenvironment interactions will inform next-generation treatment approaches
- **Minimal residual disease monitoring:** Longitudinal ctDNA and tissue-based assays expected to predict relapse and guide therapy de-escalation or intensification
- **Rare thoracic cancers:** Emerging therapies and registries for mesothelioma, thymic carcinoma, and pulmonary carcinoids set to improve evidence generation and therapeutic options
- **Health equity and access:** Studies addressing global disparities, access barriers, and guideline adherence will shape more inclusive lung cancer care
- **Digital and AI integration:** Machine learning in imaging, predictive modeling, and treatment optimization will accelerate precision medicine adoption

Noteworthy Scientific presentations at IASLC 2025



Key Topics From Notable Presentations (1/9)

- **Small Cell Lung Cancer:** Advances in SCLC therapy at IASLC 2025 will be centered on enhanced survival with immunotherapy-CRT integration, emerging cellular/targeted therapies, and biomarker-driven personalization, signaling a shift toward precision SCLC management
  - Novel Immunotherapy and CRT Combinations: Multiple trials (camrelizumab, toripalimab, serplulimab, neoadjuvant chemoimmunotherapy) will demonstrate improved PFS and OS in LS/ES-SCLC with manageable safety, highlighting evolving integration of ICIs with CRT
  - Targeted and Cellular Therapies: DLL3-CAR-T (LB2102) will show durable partial responses and biomarker clearance; meanwhile, B7-H3 ADCs had limited efficacy, underscoring the need for biomarker-driven refinement of novel targeted approaches
  - Biomarkers and Prognostic Insights: Predictive factors included gut microbiome signatures, COPD status, ECOG PS, metastasis sites, and real-world biomarkers (albumin, s-NSE). These refine patient selection for chemoimmunotherapy and identify subgroups with a survival advantage

Key Topics From Notable Presentations (2/9)

- **Non-Small Cell Lung Cancer:** Presentation will highlight precision perioperative therapy, high-response targeted ADCs and TKIs, and biomarker-tailored immunotherapy/combination regimens, driving personalized treatment across disease stages
  - Perioperative & Adjuvant Therapies: Trials like Neo-INFINITY (iruplinalkib) and SEER-based analyses confirmed the benefit of ALK-targeted perioperative therapy and stage-dependent adjuvant therapy, particularly in IIA NSCLC with high-risk features
  - Targeted & Novel Agents: Emerging therapies showed strong efficacy - HER2 ADC TQB2102 (ORR 61–100%), HLX43 PD-L1 ADC (ORR ~32%), Firmonertinib (uncommon EGFR mutations, iORR 80–90%), and PCSK9 inhibition restoring ICI sensitivity
  - Combination & Biomarker Strategies: Studies emphasized biomarker-driven care. KRAS/STK11/KEAP1 mutational subsets, quadruple regimens (EGFR-TKI–resistant NSCLC), EGFR/VEGF dual inhibition, and atezolizumab + bevacizumab meta-analysis showing PFS ~9m, OS ~23m

Key Topics From Notable Presentations (3/9)

- **Lung Cancer Screening:** The conference will reinforce that volume-based nodule management, multidisciplinary screening, and novel biomarkers/technologies will refine LCS strategies, balancing mortality reduction with cost-effectiveness and patient safety
  - Nodule Dynamics and Risk Stratification: 4-IN-THE-LUNG-RUN and UKLS confirmed ~4% incidence of new nodules with malignancy risk increasing by volume (≥200 mm^3 ~6%). Short-interval LDCT follow-up remains the safest strategy
  - Screening Program Feasibility and Optimization: The Vaud pilot (1,000 participants) demonstrated feasibility of population-based LCS with multidisciplinary review boards reducing false positives and improving personalized management
  - Innovative Detection Modalities: Breathomics (AUC up to 0.91), DNA methylation (BW AUC 0.785), and high-resolution sPET/CT (AUC 0.811) emerged as scalable, non-invasive approaches complementing LDCT in early lung cancer detection

Key Topics From Notable Presentations (4/9)

- **Chemotherapy and Radiotherapy:** Presentations are set to discuss precision-driven perioperative strategies, including immunotherapy-radiotherapy regimens, EGFR TKIs in early disease, and genomic profiling, marking a shift toward tailored care in early and rare NSCLC subtypes
  - Pulmonary Large-Cell Neuroendocrine Carcinoma (LCNEC): Retrospective data (n=130) showed PD-1/PD-L1 + chemotherapy improved PFS (7.9 vs 5.3m) but not OS (15.4 vs 19.5m). Safety was comparable to chemotherapy alone
  - Chemo-Free Neoadjuvant Strategy: A phase II trial tested tislelizumab + radiotherapy in stage IB–IIIA NSCLC, aiming to improve pCR, MPR, and EFS while avoiding chemotherapy-related toxicity
  - High-Risk Stage IA3 NSCLC: Aumolertinib is under evaluation in EGFR-mutant IA3 NSCLC with STAS/VI risk factors. The phase II trial (n=30) focuses on 2-year DFS as the primary endpoint
  - Neoadjuvant Sintilimab + Chemotherapy (NCT05244213): In 35 EGFR-mutant stage IIB–IIIB patients, 12- and 24-month EFS rates were 88.6% and 60%, with no OS events or severe irAEs. Genomic profiling identified biomarkers for personalization

Key Topics From Notable Presentations (5/9)

- **Surgical Interventions:** Experts will discuss SABR innovations, alongside real-world adoption of ALK and RET-targeted therapies, which are redefining surgical and systemic strategies in advanced NSCLC with durable benefit and manageable safety

  - SAbR in Oligoprogression and SPLC: The START-NEW-ERA trial confirmed SAbR extended systemic therapy-free survival (34m) and OS (57m) with low toxicity; re-irradiation SAbR in SPLC maintained 92.9% local control and strong survival

  - ALK+ Real-World Insights: A multi-site review (n=50) showed most ALK+ NSCLC patients initiated lorlatinib at 100 mg within 16 days of diagnosis, with 82% still on treatment at 7.8 months

  - RET+ NSCLC in Japan: Selpercatinib achieved ORR 76–80% and median PFS 23.5m in Japanese patients. Higher rates of liver dysfunction highlight the need for careful monitoring in real-world use

Key Topics From Notable Presentations (6/9)

- **Immunotherapy:** IASLC 2025 will highlight that while ICI rechallenge yields limited benefit, integrating biomarker-guided selection, novel IO combinations, and targeted population-specific strategies is critical to advancing NSCLC immunotherapy
  - Rechallenge and Predictive Biomarkers: Trials of camrelizumab + docetaxel and real-world rechallenge analyses showed modest efficacy (median PFS 2–4m). RCCEP occurrence, PD-L1 ≥50%, prior irAEs, and low NLR predicted improved survival outcomes
  - Resistance and Novel Strategies: Epigenetic therapy (DNMT/HDAC inhibitors + nivolumab) achieved durable responses in select subsets, while JAK1 inhibitor golidocitinib + anti-PD-1 was safe in dose-escalation, supporting new approaches to overcome ICI resistance
  - Special Populations and Combinations: In elderly NSCLC (ELDERLY trial), adding atezolizumab to chemotherapy improved PFS and ORR but not OS. In unresectable stage III disease, tislelizumab + chemo showed high conversion and R0 resection rates. For EGFR-mutant NSCLC post-TKI, IO plus platinum/bevacizumab improved PFS, though PD-L1 was not predictive

Key Topics From Notable Presentations (7/9)

- **Molecular Biomarkers and Genetics:** Conference will reinforce that multi-omic biomarkers, liquid biopsy integration, and co-mutation profiling are redefining precision NSCLC management, enabling earlier diagnosis, refined risk stratification, and resistance-guided therapy selection
  - Immune and Liquid Biopsy Biomarkers: ICIs in leptomeningeal metastasis showed survival benefit (OS 19.2m), with MCP-3 and ctDNA in CSF/plasma emerging as predictive biomarkers. Liquid biopsy (F1LCDx) halved diagnostic timelines (TTD 15 vs 34 days), enabling earlier targeted therapy
  - Genomic Predictors of Therapy Response: Driver mutation subsets (KRAS, BRAF, RET) showed higher ICI responsiveness, while TP53 and HLA-A loss predicted poor TKI outcomes. Genetic co-alterations (APC, ARID1A, KMT2D, SETD2, PIK3R1, KRAS, EGFR) were linked to aggressive ALK+ NSCLC
  - Translational and Tumor Microenvironment Insights: TIL density correlated with greater tumor shrinkage and survival in chemo-treated NSCLC. Discordance between BM tissue and ctDNA highlighted the need for combined testing. Lorlatinib analyses confirmed ALK fusion subtypes and TP53 mutations as resistance drivers

Key Topics From Notable Presentations (8/9)

- **Patient Outcomes and Real-World Studies:** ACTRIMS 2025 real-world data emphasized durable benefit in rare driver NSCLC, increasing adoption of perioperative IO, robust osimertinib outcomes, and the need for earlier palliative integration in advanced disease
  - Rare Driver Populations: The AURORA cohort (n=104) showed ROS1+ NSCLC patients achieved durable survival (OS 92m early-stage; 56m advanced) with high targeted therapy use (96%) and trial participation (59%)
  - Perioperative and Stage II/III Disease: In Japan, real-world adoption of neoadjuvant nivolumab+chemo rose from 10% to 24%. One-year RFS was similar across stage II–III, nodal status, and treatment modality (~70–79%), indicating short-term parity
  - EGFRm 1L Osimertinib Outcomes: The POSITHES study (n=233) confirmed median PFS 16.6m overall, 12.9m with brain metastases vs 18.8m without, matching FLAURA trial efficacy across broader, older, real-world populations
  - End-of-Life Care: In a Modena cohort (n=144), 55% received no therapy in the last 30 days; dyspnea (50%) and pain (24%) were common, with 39% needing palliative sedation. Earlier referral improved dignity and symptom control

Key Topics From Notable Presentations (9/9)

- **Other Research and Studies:** Discussions are expected to emphasize that innovative supportive care models, AI in screening, and targeted survivorship services are increasingly integral alongside systemic therapies, while disparities in equity, awareness, and trial access remain critical gaps
  - Therapeutic Advances Across SCLC and NSCLC: Novel strategies such as camrelizumab induction in LS-SCLC (1y PFS 59.9%), DLL3-CAR-T durable responses, and Tislelizumab neoadjuvant therapy in unresectable stage III NSCLC showed encouraging results. Real-world data confirmed 1L osimertinib (PFS 16.6m) and selpercatinib (PFS 23.5m) efficacy, while bone metastases reduced ICI benefit but improved with denosumab
  - Biomarkers & Screening: MCP-3, gut microbiota, and ALK/EGFR signatures advanced precision care; breathomics and DNA methylation boosted early detection; AI (BAIMGPT) outperformed in nodule management
  - Equity, Supportive Care, and Patient Outcomes: DEI gaps, caregiver vs public awareness, and Latino outreach were highlighted; exercise, survivorship, and early palliative integration improved patient-centered outcomes

Focus of Key Industry Sponsored Sessions at IASLC 2025 (1/5)

- **Johnson & Johnson:**
  - Focus Areas: EGFR-mutant NSCLC care
  - Sessions will explore optimized treatment strategies for EGFR-driven NSCLC, emphasizing targeted approaches and multidisciplinary perspectives to improve patient outcomes
- **Eli Lilly:**
  - Focus Areas: Biomarker testing in early-stage NSCLC
  - Presentations will highlight evolving roles of biomarker testing, emphasizing precision oncology and integration into early-stage lung cancer management.
- **Daiichi Sankyo:**
  - Focus Areas: HER2 in NSCLC & brain metastases, SCLC management (with MSD)
  - Symposia will cover HER2-overexpression management, multidisciplinary care for EGFRm NSCLC/SCLC with brain metastases, and joint insights with MSD on SCLC diagnosis and treatment

Focus of Key Industry Sponsored Sessions at IASLC 2025 (2/5)

- **MSD:**
  - Focus Areas: Immunotherapy & SCLC management
  - Sessions will highlight a decade of progress in NSCLC immunotherapy and collaborative strategies with Daiichi Sankyo for SCLC, focusing on diagnosis, emerging treatments, and evolving care standards
- **AbbVie:**
  - Focus Areas: SEZ6 in SCLC & neuroendocrine neoplasms
  - Presentations will spotlight SEZ6 biology, its role in SCLC/NENs, and potential pathways for novel therapeutic development.
- **Pfizer:**
  - Focus Areas: ALK+ advanced NSCLC
  - Discussions will emphasize optimizing outcomes in first-line ALK+ NSCLC through sustained clinical benefit strategies and treatment tailoring

Focus of Key Industry Sponsored Sessions at IASLC 2025 (3/5)

- **Bayer:**
  - Focus Areas: NTRK fusion-positive & HER2-mutant NSCLC
  - Sessions will present real-world strategies for precision medicine, guiding clinicians toward optimal outcomes in rare molecular subsets
- **Accord Healthcare:**
  - Focus Areas: First-line treatment of extensive-stage SCLC
  - Presentations will highlight recent therapeutic developments, novel combinations, and their implications for frontline SCLC management
- **Summit Therapeutics:**
  - Focus Areas: Emerging therapeutic strategies in oncology
  - Sessions will focus on innovative clinical strategies to reshape treatment paradigms in lung cancer, presented through CME collaborations

Focus of Key Industry Sponsored Sessions at IASLC 2025 (4/5)

- **AstraZeneca:**
  - Focus Areas: Multidisciplinary immunotherapy & EGFRm NSCLC
  - Sessions will cover maximizing multidisciplinary immunotherapy, adapting treatment for metastatic EGFRm NSCLC, and evidence-based tumor board applications across disease stages
- **Nuvation Bio:**
  - Focus Areas: ROS1+ NSCLC
  - Presentations will provide in-depth insights into ROS1+ NSCLC management, highlighting novel targeted therapeutic strategies
- **Regeneron:**
  - Focus Areas: Advanced NSCLC novel strategies
  - Sessions will focus on reimagined NSCLC care, with emphasis on innovative treatment pathways for advanced disease

Focus of Key Industry Sponsored Sessions at IASLC 2025 (5/5)

- **Natera:**
  - Focus Areas: MRD testing in lung cancer
  - Symposia will present Signatera's role in ultrasensitive MRD detection, highlighting applications in clinical monitoring and therapeutic decision-making
- **Boehringer Ingelheim:**
  - Focus Areas: NSCLC and SCLC targeted therapies
  - Presentations will address patient-centered care through next-generation targeted therapies, emphasizing personalization and improved outcomes

Notable Presentations And Late-breaking Sessions At IASLC 2025

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (1/7)

Date	Title	Author	Summary
08 Sep 2025	A Phase II Trial of Induction Camrelizumab Plus Chemotherapy Followed by Chemoradiotherapy and Consolidation in Limited-Stage SCLC	D. Liu	• **Introduction:** LS-SCLC relapses remain common after CRT. Building on NSCLC data, this phase II trial tested induction camrelizumab + chemotherapy before CRT and camrelizumab consolidation. • **Methodology**: Forty-one patients were randomized 1:1 to camrelizumab + EP/EC induction → CRT → PCI → camrelizumab consolidation vs. standard induction chemo + CRT. Primary endpoint: 1-year PFS; secondary: OS, ORR, safety. • **Results:** Camrelizumab achieved 100% PR vs. 84.2% with cCRT. One-year PFS was 59.9% vs. 39.5% (HR 0.42, p=0.047). Median OS not reached vs. 23.9m (HR 0.32, p=0.044). One-year OS: 100% vs. 89.2%. ALC >2.0 × 10^9/L predicted superior PFS. No excess toxicity observed. • **Conclusions:** Induction camrelizumab improved PFS and OS without added toxicity, supporting further validation in LS-SCLC.
08 Sep 2025	Multi-Cycle Low-Dose Radiotherapy Reshapes Immunochemotherapy for ES-SCLC: The SPUR Phase II Trial	Z. Yao	• **Introduction:** ES-SCLC survival remains limited; LDRT may enhance immunotherapy. The SPUR trial tested adaptive multi-cycle LDRT with serplulimab plus chemotherapy. • **Methodology**: In this phase II study (N=61), patients received platinum-etoposide + serplulimab with up to three adaptive LDRT cycles (15 Gy/5f), then serplulimab maintenance. Primary endpoint: PFS; secondary: ORR, DCR, DoR, OS, safety, biomarkers. • **Results:** Median PFS 8.6m; ORR 84.8%, DCR 88.1%, DoR 8.2m. Non-liver metastasis patients fared better (11.2 vs 4.4m). Grade ≥3 TRAEs in 39.3%, mainly hematologic; radiation toxicities manageable. TCR/proteomic signatures correlated with PFS. • **Conclusions:** Multi-cycle LDRT plus serplulimab showed high efficacy, manageable safety, and promising biomarker signals.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (2/7)

Date	Title	Author	Summary
09 Sep 2025	A Phase II Study of Vobramitamab Duocarmazine in Patients With Relapsed or Refractory Extensive-Stage Small-Cell Lung Cancer	T. Roy	• **Introduction:** Relapsed/refractory ES-SCLC has poor outcomes. B7-H3 is highly expressed and represents a target for antibody-drug conjugates (ADCs). Vobramitamab duocarmazine, a B7-H3 ADC with a duocarmycin payload, was evaluated. • **Methodology**: Phase II, single-arm trial (N=9) in ES-SCLC progressing after platinum-etoposide + PD-L1 therapy. Dosing: 2.7 mg/kg Q4W, later reduced to 2.0 mg/kg. Primary endpoint: ORR; secondary: safety, DOR, PFS, OS. • **Results:** No responses observed; 44.4% achieved stable disease. Median PFS 2.0m, OS 4.3m. Common TRAEs: anorexia, fatigue, anemia. Grade 3–4 events included neutropenia, mucositis, pneumonia. Trial halted after stage one. • **Conclusions:** Vobramitamab duocarmazine showed limited efficacy. Further optimization of payloads, dosing, and biomarker-driven selection is needed for B7-H3 ADCs in SCLC.
09 Sep 2025	First-Line Immunochemotherapy in ES-SCLC Patients With ECOG PS =2: Real-World Evidence From the ASTRUM-005R Trial	L. Wu	• **Introduction:** Immunochemotherapy is standard for ES-SCLC, but patients with ECOG PS ≥2 are underrepresented in trials. This ASTRUM-005R subgroup evaluated real-world outcomes. • **Methodology**: Nationwide observational study in China. Seventy-five ES-SCLC patients with PS ≥2 received first-line serplulimab-based immunochemotherapy. Endpoints: rwPFS, OS, ORR, safety. • **Results:** Median rwPFS 6.97m; 1-year rwPFS 26.6%. Median OS 12.3m, inferior to PS <2 patients (HR 1.89). Brain metastases had no significant effect, but liver metastases shortened rwPFS (4.9 vs 10.3m) and OS (9.7 vs 14.0m). ORR was 66.2%. Safety was consistent; grade ≥3 irAEs in 5 patients. • **Conclusions:** Serplulimab-based immunochemotherapy was effective and feasible in PS ≥2 ES-SCLC, though liver metastases predicted worse outcomes.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (3/7)

Date	Title	Author	Summary
09 Sep 2025	Toripalimab Consolidation After Chemoradiotherapy in Limited-Stage Small Cell Lung Cancer: A Phase II, Randomized Controlled Study	P. Zhang	• **Introduction:** Immunotherapy plus chemotherapy benefits ES-SCLC; its role post-CCRT in LS-SCLC is under evaluation. This phase II trial compared toripalimab consolidation vs observation. • **Methodology**: Ninety-six LS-SCLC patients (ECOG 0–1, non-progressive post-CCRT) were randomized 1:1 to toripalimab (240 mg Q3W × 6 months) or observation. Primary endpoint: PFS; secondary: OS, DOR, safety. • **Results:** Median follow-up 27.8m. Median PFS not reached with toripalimab vs 11.8m observation (HR 0.55). Median OS not reached vs 33.7m (HR 0.44). Grade 3–4 AEs: 22.9% toripalimab, 27.1% observation. Pneumonitis ≤4.2%; no grade 5 events. • **Conclusions:** Toripalimab consolidation improved OS and PFS with manageable safety in LS-SCLC.
09 Sep 2025	Clinical Outcomes and Single-Cell Map of Neoadjuvant Immunochemotherapy for Stage II-IIIb LS-SCLC : A Real-World Study	C. Huang	• **Introduction:** Standard CCRT in stage II–IIIB LS-SCLC yields poor outcomes; neoadjuvant chemoimmunotherapy may improve prognosis. • **Methodology**: Twenty-five patients received neoadjuvant chemoimmunotherapy; 16 had surgery (TCC), 9 radiotherapy. Controls: 87 CCRT, 10 chemo-only. Endpoints: 18m EFS, pCR. scRNA-seq performed. • **Results:** FAS: ORR 84%, 18m EFS 58.8%, OS 89.2%. TCC: pCR 50%, EFS 76.6%, OS 80.8%, significantly better than radiotherapy and PSM-matched CCRT (EFS 83.9% vs 33.3%). No SAEs. scRNA-seq showed pCR linked to CD4+ T-cell/macrophage expansion with migratory gene upregulation. • **Conclusions:** Neoadjuvant chemoimmunotherapy improved EFS, pCR, and immune activation in LS-SCLC.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (4/7)

Date	Title	Author	Summary
09 Sep 2025	Immunotherapy for ES-SCLC Comorbid With COPD: A Real-World Retrospective Study	P. Zhan	• **Introduction:** Prognosis of ES-SCLC with comorbid COPD under immunotherapy is unclear. This study explored COPD's impact and survival predictors. • **Methodology**: Retrospective analysis of 100 ES-SCLC patients receiving first-line chemoimmunotherapy with pulmonary function tests. Baseline lung, serum, and clinical parameters assessed. OS was primary outcome; Cox regression identified predictors • **Results:** Fifty-nine had COPD (78% GOLD I–II). COPD patients showed better OS within 9m (P=0.041) but worse survival beyond 9m (P=0.011); PFS unchanged. Predictors: VC%>68.8 (HR=0.23, P=0.01), neutrophils >3.8 (HR=0.20, P=0.004) • **Conclusions:** COPD conferred short-term benefit but long-term risk. VC% and neutrophils predicted favorable outcomes
09 Sep 2025	Safety and Efficacy of Chemoimmunotherapy in Stage IV Small Cell Lung Cancer: A Single-Center Retrospective Analysis	A. Peeters	• **Introduction:** Chemoimmunotherapy (IMPOWER-133, CASPIAN) is standard 1L for ED-SCLC. Real-world data on efficacy/safety are needed. • **Methodology**: Retrospective cohort of 74 stage IV SCLC patients treated with carboplatin-etoposide-atezolizumab (2018–2022, Leuven). Survival analyzed via Kaplan-Meier and Cox regression; biomarkers and clinical variables assessed. • **Results:** ORR was 80%. Median PFS 4.8m, OS 11.5m; 1-, 2-, 3-year OS rates: 47.3%, 18.9%, 11.9%. Bone metastasis, age, high s-NSE predicted worse OS; higher s-albumin predicted better OS. TRAEs occurred in 95%; G≥3 in 74%. irAEs led to discontinuation in 9.5%. • **Conclusions:** Outcomes mirrored IMPOWER-133; baseline biomarkers predicted OS.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (5/7)

Date	Title	Author	Summary
09 Sep 2025	Extended Follow-Up of First-Line Atezolizumab in Extensive-Stage Small Cell Lung Cancer: Real-World Multicenter Study	Y. Song	• **Introduction:** First-line atezolizumab plus chemotherapy benefits ES-SCLC, but long-term real-world outcomes remain underexplored. • **Methodology**: Prospective, multicenter Korean study (n=100, June 2021–Aug 2022). Primary outcomes: 1-year OS and PFS; secondary: ORR, DCR, second PFS, safety. • **Results:** Median PFS 6.2m, OS 17.1m; 1-year OS 62.5%. Favorable OS linked to PR/SD and longer platinum-free interval. Brain radiotherapy improved OS in patients with brain metastases; thoracic radiotherapy trended toward benefit. Second-line therapy post-progression extended survival versus best supportive care. • **Conclusions:** Long-term effectiveness confirmed; local and subsequent therapies further improved survival.
09 Sep 2025	Gut Microbiota and Metabolites as Potential Biomarkers for Immunotherapy Efficacy in Patients With Extensive-Stage Small Cell Lung Cancer	M. Lin	• **Introduction:** ES-SCLC shows modest benefit from ICIs, requiring predictive biomarkers. • **Methodology**: Forty-one ES-SCLC patients on ICIs (2021–2023) underwent baseline fecal metagenomics and metabolomics; response assessed by RECIST v1.1. • **Results:** Median PFS 3.6 months. Responders had enriched Phascolarctobacterium, Acidaminococcales, Clostridium; non-responders had Subdoligranulum, Lactobacillales, Bacilli. Thirty-four metabolites differed: L-Norvaline and 20-Hydroxyecdysone in responders; Chenodeoxycholic acid sulfate and N-Acetylneuraminate in non-responders. Sphingolipid metabolism was upregulated in responders. • **Conclusions:** Gut microbiota and metabolites correlate with immunotherapy efficacy, offering potential biomarkers to personalize ES-SCLC treatment.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (6/7)

Date	Title	Author	Summary
09 Sep 2025	Safety and Efficacy of DLL3 CAR-T Cells Armored With dnTGFBR2 in a Patient With Recurrent Small-Cell Lung Cancer	Z. Hao	• **Introduction:** DLL3-targeted CAR-T therapy (LB2102) with dominant-negative TGFBR2 aims to overcome immunosuppression in SCLC. • **Methodology**: A 51-year-old woman with relapsed SCLC and brain metastases, previously treated with chemotherapy, atezolizumab, and WBRT, received LB2102 at 2.3×10^6 CAR+ T cells/kg via single-patient IND after lymphodepletion. • **Results:** The infusion was well tolerated, with no CRS/neurotoxicity. By week 12, lung lesion reduced 45% (PR), further shrinking 76% at 6 months. CAR-T persisted (0.86% of CD3+ T cells); CTCs cleared; brain metastases stabilized at 1 year. • **Conclusions:** LB2102 achieved durable PR, biomarker clearance, and favorable safety, supporting further DLL3-CAR-T trials.
09 Sep 2025	Immunotherapy Plus Chemoradiotherapy for Limited-Stage Small Cell Lung Cancer: A Systematic Review and Meta-Analysis of Randomized Trials	C.C. Lee	• **Introduction:** The integration of ICIs into CRT for LS-SCLC remains unclear. This meta-analysis assessed their overall survival (OS) impact and treatment modifiers. • **Methodology**: Four RCTs (n=1,291) were analyzed using fixed-effect meta-analysis. Subgroup analyses evaluated ICI timing, platinum backbone, thoracic radiation schedule, and PCI use. • **Results:** No overall OS benefit was observed (HR 0.89, p=0.16). However, consolidation-only ICI (HR 0.78) and carboplatin-based CRT (HR 0.68) significantly improved OS, unlike concurrent ICI or cisplatin regimens. Radiation schedule and PCI showed no effect • **Conclusions:** ICIs yield greatest benefit as consolidation after CRT with carboplatin, guiding future LS-SCLC optimization.

Notable Presentations At IASLC 2025
Small Cell Lung Cancer (7/7)

Date	Title	Author	Summary
09 Sep 2025	The Prognostic Factors Related With the Organ Spesific Metastasis on Survival in ES-SCLC; TROD 08-16 Study	S. AKYUREK	• **Introduction:** Prognostic factors in ES-SCLC and the impact of initial metastatic site on OS were evaluated against Wu et al.'s SEER-based nomogram. • **Methodology**: A multicenter retrospective analysis of 579 metastatic ES-SCLC patients (2001–2023) assessed OS via Kaplan-Meier and Cox regression, with comparisons to nomogram predictions. • **Results:** Median OS was 11 months; 2-year OS only 2%. Liver, bone, pleural metastases, and ECOG PS were negative prognostic factors, while TRT, PCI, and atezolizumab improved OS. Outcomes aligned with Wu's nomogram for liver, bone, and brain metastases. • **Conclusions:** TRT, PCI, and atezolizumab improve survival; pleural, liver, bone metastases worsen prognosis.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (1/8)

Date	Title	Author	Summary
07 Sep 2025	Neoadjuvant Iruplinalkib in Resectable ALK/ROS1 Fusion-Positive NSCLC: Updated Results of the Exploratory Neo-INFINITY Study	G. Zhang	• **Introduction:** Targeted perioperative therapies such as alectinib and lorlatinib have shown benefit in resectable ALK+ NSCLC. The Neo-INFINITY study evaluates iruplinalkib in this setting. • **Methodology**: A phase II, single-arm Chinese trial enrolled ALK/ROS1+ stage IB–IIIB NSCLC patients. Treatment included neoadjuvant iruplinalkib (8 weeks) followed by surgery and up to 2 years of adjuvant iruplinalkib. Primary endpoint: major pathologic response (MPR). • **Results:** Among 11 ALK+ patients, 10 completed surgery. Five (50%) achieved MPR, 3 (30%) complete response, and 9 (90%) objective response. R0 resection was universal. Grade ≥3 AEs occurred in 18%, with no treatment-related discontinuations. • **Conclusions:** Neoadjuvant iruplinalkib demonstrated promising efficacy, manageable safety, and enabled trial progression to Stage 2, supporting its potential in perioperative ALK+ NSCLC.
07 Sep 2025	Adjuvant Systemic Therapy for Resected Stage IB-IIA NSCLC (AJCC 8Th Edition): A Real-World Cohort Study From SEER Database	C. Zhao	• **Introduction:** The role of adjuvant therapy in completely resected stage IB–IIA NSCLC with high-risk features remains uncertain despite current guideline recommendations. • **Methodology**: Using SEER (2007–2021), 25,919 resected IB–IIA NSCLC patients were analyzed. Survival outcomes between adjuvant therapy and observation groups were compared using Cox and competing risk models with subgroup analyses by stage and risk. • **Results:** Only 13.5% received adjuvant therapy. While adjuvant treatment improved overall survival (HR 0.89), it did not enhance LCSS overall. Subgroup analysis showed no benefit in stage IB but significant OS and LCSS improvement in stage IIA, particularly with high-risk features. • **Conclusions:** Adjuvant therapy benefits are stage-dependent, supporting its use in IIA NSCLC, especially high-risk cases, but not in stage IB disease.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (2/8)

Date	Title	Author	Summary
07 Sep 2025	First-Line Camrelizumab Plus Chemotherapy in 3004 Patients With Advanced Non-Squamous NSCLC: A Nationwide Retrospective Study	Z. Wei	• **Introduction:** Camrelizumab plus chemotherapy is approved for first-line advanced non-squamous NSCLC based on the CameL trial. Long-term real-world outcomes remain underexplored. • **Methodology**: A nationwide retrospective study in China analyzed 3,004 patients (2019–2022) treated with camrelizumab plus chemotherapy, capturing baseline characteristics, OS, and adverse events, with descriptive comparison to CameL. • **Results:** Patients were older (median 65 vs 59 years) and included ECOG ≥2 (7.7%). Median OS was 25.9 months (vs 27.1 months in CameL). TEAEs occurred in 78.8% (grade ≥3 in 15.7%). Some (5%) received single-agent chemotherapy due to poor tolerance. • **Conclusions:** Despite broader inclusion of elderly and vulnerable patients, real-world OS mirrored CameL, supporting camrelizumab plus chemotherapy as an effective strategy across diverse populations.
07 Sep 2025	Efficacy of Immunotherapy ± Chemotherapy in Metastatic NSCLC with KRAS, STK11, or KEAP1 Mutations: A Network Meta-Analysis	S. Taylor	• **Introduction:** KRAS, STK11, and KEAP1 mutations confer poor prognosis in metastatic NSCLC, with optimal treatment strategies unclear. A Bayesian NMA evaluated checkpoint inhibitors, chemotherapy, and combinations. • **Methodology**: Following PRISMA, 8 RCTs (7,220 patients; 4,455 mutation-evaluable) were analyzed. Five treatment classes were compared for OS and PFS using Bayesian random-effects models, with SUCRA rankings. • **Results:** For KEAP1-mutant NSCLC, PD-1/PD-L1+CTLA-4+CT ranked highest (OS HR 0.48). STK11-mutants benefited most from PD-1/PD-L1 monotherapy (HR 0.56). In KRAS-mutants, monotherapy (HR 0.42) and PD-1/PD-L1+CTLA-4+CT (HR 0.63) outperformed CT, with monotherapy superior, particularly in G12C (HR 0.28). Wild-type favored PD-1/PD-L1+CT. • **Conclusions:** Responses differ by mutation: KEAP1—triplet immunotherapy; STK11/KRAS—monotherapy; wild-type—chemo-immunotherapy. Findings reinforce biomarker-driven therapy selection in first-line NSCLC.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (3/8)

Date	Title	Author	Summary
07 Sep 2025	A Phase 2 Study of PCSK9 Inhibitor, Alirocumab, and PD1 Inhibitor, Cemiplimab, in Advanced Immunorefractory Metastatic NSCLC	E. Oduah	• **Introduction:** PCSK9 drives ICI resistance in NSCLC; inhibition may restore sensitivity • **Methodology**: Phase II TOP 2201 tested alirocumab + cemiplimab in 40 ICI-resistant NSCLC patients. Endpoints included ORR, PFS, OS, DOR, and biomarker correlation • **Results:** ORR was 14.7% overall, higher in squamous (36.4%) vs non-squamous (3.6%). DCR was 83.2%, median DOR 9.9 months, PFS 3 months overall, 5.5 in squamous. PIK3CA/PTEN/AKT1 alterations predicted superior ORR (50% vs 0%) and PFS (14.9 vs 2.7 months; HR 0.26) • **Conclusions:** Combination reversed ICI resistance in subsets, with benefit in squamous histology and PIK3CA/PTEN/AKT1-altered tumors.
07 Sep 2025	Bevacizumab Plus Serplulimab and Chemotherapy for EGFR-TKI-Resistant Non-Squamous Non-Small Cell Cancer: A Phase2Study	Q. Wang	• **Introduction:** Quadruple regimens with bevacizumab, immunotherapy, and chemotherapy are used in EGFRmut nsq-NSCLC, but benefit in EGFR-TKI-resistant disease is unclear. • **Methodology**: A multicenter phase II trial (NCT06334757) enrolled 46 Chinese patients (18–70 yrs) with EGFRmut nsq-NSCLC post-TKI failure (≤2 lines). Treatment: HLX04 (bevacizumab 7.5 mg/kg) + HLX10 (serplulimab) + pemetrexed/carboplatin, with maintenance until progression. Primary endpoint: ORR. • **Results:** ORR was 47.8% (95% CI 32.9–63.0); DCR 87.0%. Median PFS reached 7.7 months; 6-month PFS rate 68.3%. Median TTR 1.5 months, DoR 6.2 months. Subgroups without brain metastases showed improved efficacy (ORR 52.4%, PFS 9.5 vs 7.1 months). Grade ≥3 AEs occurred in 37%, mainly cytopenias. • **Conclusions:** Reduced-dose bevacizumab plus serplulimab and chemotherapy demonstrated promising efficacy and manageable toxicity in EGFR-TKI-resistant nsq-NSCLC.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (4/8)

Date	Title	Author	Summary
07 Sep 2025	Comparing Baseline Characteristics of NSCLC Patients Receiving Radiotherapy in Real-World Practice and Clinical Trials	G. Walls	• **Introduction:** NSCLC trial populations are often fitter than real-world patients, limiting generalisability. This study compared baseline patient characteristics (BPCs) in radiotherapy-treated NSCLC with institutional series and trial eligibility. • **Methodology**: Retrospective analysis of 5,075 patients (2013–2023) treated with curative-intent radiotherapy (3,509 CONV; 1,566 SABR) at a tertiary centre. BPCs (age, ECOG, stage, histology, chemo-suitability) were benchmarked against large institutional cohorts and 12 landmark phase II–III trials. • **Results:** Patients were older (median 73 yrs), less fit (ECOG 0–1: 52% CONV, 38% SABR), and had lower chemo suitability than US cohorts. Only 31% met ≥1 trial eligibility, with median eligibility 9.3% for CONV and 42% for SABR. • **Conclusions:** Significant disparities exist between real-world and trial NSCLC cohorts, underscoring the need for broader, more inclusive trial designs to enhance applicability.
07 Sep 2025	Phase I/II Trial of Canakinumab With Chemoradiation and Durvalumab in Stage III Non-Small Cell Lung Cancer (CHORUS)	N. Shaverdian	• **Introduction:** Most stage III unresected NSCLC patients relapse within 2 years after cCRT plus durvalumab. IL-1β signaling promotes resistance; canakinumab may enhance outcomes. • **Methodology**: CHORUS, a phase I/II trial (NCT04905316), tested canakinumab (200 mg SC during cCRT, then IV with durvalumab consolidation) in 41 patients. Primary endpoint: 2-year PFS >46% • **Results:** Of 32 evaluable patients, ORR was 81%. Median follow-up 24.6 months. PFS at 12 and 24 months was 75% and 67%, OS 93% and 73%. Toxicities were manageable; no treatment-related deaths occurred. • **Conclusions:** Adding canakinumab to cCRT and durvalumab improved 2-year PFS beyond historical benchmarks with acceptable safety, supporting further development.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (5/8)

Date	Title	Author	Summary
08 Sep 2025	Safety, Tolerability and Preliminary Efficacy of Anti-PD-L1 ADC HLX43 in Advanced/Metastatic Solid Tumors: A Phase I Study	J. Wang	• **Introduction:** HLX43, a PD-L1–targeted ADC, combines checkpoint inhibition and cytotoxicity, showing activity in PD-(L)1–resistant NSCLC. • **Methodology**: In a Phase I study, 85 patients (76 NSCLC) received HLX43 (0.5–4 mg/kg Q3W). Safety, DLTs, and efficacy were evaluated in dose-escalation and expansion cohorts. • **Results:** TRAEs occurred in 95%, mostly grade 1–2; grade ≥3 in 24% (mainly neutropenia, anemia). In 69 evaluable NSCLC patients, ORR was 31.9%, DCR 87.0%. EGFR wild-type non-squamous NSCLC achieved ORR 47.4%. CPI-refractory NSCLC achieved ORR 32.8%. Median PFS at 2 mg/kg was 5.4 months. • **Conclusions:** HLX43 showed manageable safety and promising efficacy, supporting further study.
08 Sep 2025	Efficacy and Safety of TQB2102, a Biparatopic HER2-Targeting ADC, in HER-2 Aberrant NSCLC: A Phase II Study	L. Zhang	• **Introduction:** TQB2102 is a biparatopic HER2-targeted ADC with dual-epitope binding and a topoisomerase I payload, designed to enhance internalization and efficacy in heterogeneous HER2-aberrant NSCLC. • **Methodology**: In this open-label phase II trial, 59 pretreated HER2-aberrant NSCLC patients received TQB2102 (7.5 mg/kg Q3W). Primary endpoint was ORR; secondary endpoints included DCR, PFS, and safety. • **Results:** ORR was 61.1% (HER2-mutant), 44.4% (amplification/overexpression), and 100% (HER2+EGFR co-alteration). DCR exceeded 88% across cohorts. Responses were rapid; one complete response occurred. Patients with brain metastases had ORR 62.5%. Grade ≥3 TRAEs (67%) were mostly hematologic; ILD occurred in 2 patients • **Conclusions:** TQB2102 showed high efficacy, especially in HER2-mutant and HER2/EGFR co-altered NSCLC, with manageable toxicity, warranting further biomarker-driven trials.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (6/8)

Date	Title	Author	Summary
09 Sep 2025	A Phase II Study of Firmonertinib Combined With Apatinib as First-Line Therapy in NSCLC Patients With EGFR Uncommon Mutations	H-Y. Xu	• **Introduction:** Firmonertinib is a CNS-penetrant EGFR-TKI. Uncommon EGFR mutations remain challenging despite available TKIs; this study tested firmonertinib + apatinib as first-line therapy. • **Methodology**: Eighteen metastatic NSCLC patients with uncommon EGFR mutations (G719X, L861Q, S768I) received firmonertinib 80 mg + apatinib 250 mg daily until progression or toxicity. Primary endpoint: ORR. • **Results:** Median follow-up was 8.2 months. ORR reached 61.1% (11/18), DCR 100%. Median PFS was 13.5 months; OS not reached. Brain metastases were present in 44%. Common AEs were rash (29%), oral ulcers (18%), diarrhea (12%); one grade 3 rash, no treatment-related deaths. • **Conclusions:** Firmonertinib + apatinib showed strong efficacy and manageable safety, supporting its potential as first-line therapy for EGFR-uncommon NSCLC.
09 Sep 2025	A Phase II Study of Sunvozertinib Combined With Anlotinib in Treatment-Naïve NSCLC With EGFR Sensitive Mutations and Co-Mutations (WU-KONG32)	Y. Zhang	• **Introduction:** EGFR-mutant NSCLC with co-mutations (e.g., TP53) responds poorly to EGFR-TKIs. Combining EGFR and VEGF inhibition may enhance efficacy. • **Methodology**: A phase II trial tested Sunvozertinib 300 mg daily + Anlotinib 8 mg (days 1–14, Q3W) in untreated advanced EGFR-sensitive NSCLC with co-mutations. Primary endpoint: PFS; secondary: ORR, DCR, OS, safety. • **Results:** Sixteen patients enrolled, nine with TP53 mutations. Among nine evaluable, ORR was 77.8% (7 PR), DCR 100%. Common TEAEs: diarrhea, rash, anorexia. Grade ≥3 events occurred in 31.3%, with no discontinuations or deaths. • **Conclusions**: Combination showed high activity and manageable safety, warranting further study.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (7/8)

Date	Title	Author	Summary
09 Sep 2025	A Phase II Study of Sunvozertinib Combined With Anlotinib in NSCLC Patients Harboring EGFR Ex20Ins and Uncommon EGFR Mutations	H-Y. Xu	• **Introduction:** Sunvozertinib, an EGFR-TKI approved for exon20ins NSCLC, may act synergistically with VEGF inhibition. This study tested its combination with anlotinib in exon20ins and uncommon EGFR mutations. • **Methodology**: In a phase II trial, patients received sunvozertinib 300 mg daily + anlotinib 8 mg (days 1–14, Q3W). Cohorts included untreated exon20ins and previously treated uncommon mutations. Primary endpoint: ORR; secondary: DCR, PFS, OS, safety. • **Results:** Twelve patients enrolled; 10 evaluable achieved ORR 100%, including one uncommon mutation case with intracranial CR. Common TEAEs: diarrhea, rash, hypertension, hepatic dysfunction, oral ulcers. One dose reduction, no discontinuations or deaths. • **Conclusions:** The combination was well tolerated and highly active, warranting further study.
09 Sep 2025	Efficacy and Safety of Atezolizumab Plus Bevacizumab-Based Therapy in Non-Small Cell Lung Cancer: A Meta-Analysis of Clinical Trials	D.K. Rohita	• **Introduction:** Combining immunotherapy with anti-angiogenic agents is a promising strategy in NSCLC, but efficacy and safety data remain limited. • **Methodology**: A systematic review and meta-analysis of seven trials (PubMed, Embase, Scopus; cutoff Jan 2025) assessed atezolizumab + bevacizumab in NSCLC. Outcomes were pooled using R software. • **Results:** Among 960 patients (mean age 63.3, median follow-up 21.4 months), pooled efficacy showed ORR 61%, PFS 8.9 months, OS 22.8 months, DoR 7.4 months. Safety analysis showed AEs in 99%, serious AEs in 34%, discontinuations in 2%, and treatment-related deaths in 2%. • **Conclusions:** The combination demonstrated meaningful efficacy with manageable safety, though further randomized trials are required for confirmation.

Notable Presentations At IASLC 2025
Non-Small Cell Lung Cancer (8/8)

Date	Title	Author	Summary
09 Sep 2025	Efficacy and Safety of Firmonertinib for EGFR Exon 21 L858R Mutation-Positive NSCLC Patients With Brain Metastases	H. Su	• **Introduction:** Brain metastases are common in EGFR-mutant NSCLC, with L858R patients faring worse than exon 19 deletion. Firmonertinib, a brain-penetrant EGFR-TKI, was prospectively evaluated. • **Methodology**: Ten L858R+ NSCLC patients with brain metastases received firmonertinib (80 mg or 160 mg) as first-line therapy. Primary endpoints: iPFS, iORR, iDCR; secondary: PFS, ORR, DCR, safety. • **Results:** Median follow-up 16.8 months. iORR 80%, iDCR 100%. Overall ORR 90%, DCR 100%. Both 80 mg and 160 mg groups achieved strong responses; ECOG ≥2 patients all achieved PR. Only grade 1 TRAEs observed. • **Conclusions:** Firmonertinib demonstrated robust intracranial and systemic efficacy with excellent tolerability, supporting its role in L858R+ NSCLC with brain metastases.

Notable Presentations At IASLC 2025
Lung Cancer Screening (1/5)

Date	Title	Author	Summary
07 Sep 2025	Size Distribution and Short-Term Progression of New Nodules From the 4ITLR Lung Cancer Screening Trial	M. Heuvelmans	• **Introduction:** Lung cancer screening (LCS) via low-dose CT reduces mortality, but new nodules during follow-up have a higher malignancy risk than baseline findings. Optimal management of these nodules remains uncertain. • **Methodology**: The European 4-IN-THE-LUNG-RUN (4ITLR) trial analyzed 2,219 participants' annual LDCTs (Dec 2022–Jan 2025). Radiologists and AI independently reviewed scans; discrepancies were resolved by expert consensus. Solid or part-solid nodules ≥30 mm³ were tracked for size and 3-month progression. • **Results:** New nodules occurred in 90 participants (4.1%): 52 (2.3%) measured 30–200 mm³, 38 (1.7%) ≥200 mm³. At 3 months (n=65), 36 (1.6%) resolved, 6 (0.3%) were resolving, 14 (0.6%) stable, and 9 (0.4%) showed growth. • **Conclusions:** Roughly half of new nodules resolved within 3 months, confirming transient findings' prevalence. These results align with the NELSON trial and reinforce short-interval follow-up as a prudent management strategy in LCS.
07 Sep 2025	New Nodule Lung Cancer in the UK Lung Cancer Screening Trial: Characteristics and Comparison With NELSON	M.P.a. Davies	• **Introduction:** New nodules in follow-up lung cancer screening (LCS) differ in malignancy risk from baseline. The UKLS trial aimed to characterize these nodules and compare outcomes with NELSON. • **Methodology**: In 875 UKLS participants undergoing follow-up LDCT, new non-calcified nodules <15 mm³ at prior scans were included. Volumes were measured semiautomatically, and malignancy confirmed by histology or ≥2 years' stability. Results were benchmarked against NELSON. • **Results:** Of 233 new solid nodules in 142 participants, 5 (2%) were malignant, all at early stage (80% stage I). Malignancy risk rose with volume: 0% (<30 mm³), 2% (30–200 mm³), 6% (≥200 mm³). No cancers arose in short-term follow-up nodules, versus 5% at annual follow-up. • **Conclusions:** UKLS validates NELSON findings, confirming ~4% incidence of new nodules and volume-dependent malignancy risk. Thresholds of 30–200 mm³ remain robust for stratification in LCS.

Notable Presentations At IASLC 2025
Lung Cancer Screening (2/5)

Date	Title	Author	Summary
07 Sep 2025	Lung Cancer Screening in Switzerland: Baseline Results From the Vaud Pilot Project	C. Bongard	• **Introduction:** The Vaud LCS pilot project, a four-year initiative, was designed to test the feasibility of a population-based lung cancer screening (LCS) program using LDCT under USPSTF 2021 criteria. • **Methodology**: Between Nov 2023–Dec 2024, 8,000 invitations were mailed and physician referrals added. Participants underwent interviews, spirometry, LDCT, and optional smoking cessation. Nodules were assessed via Lung-RADS v2022/NELSON+ with multidisciplinary nodule review board (MNRB) integration of radiology, clinical data, and Brock model risk stratification. • **Results:** 1,000 participants were enrolled (70% smokers; 54% attended cessation). Baseline LDCT: 83.8% negative, 14.6% indeterminate, 1.6% positive. MNRB reclassified to 87.3% negative, 11.2% indeterminate, 1.5% positive. Among positives, 7 lung cancers were confirmed. • **Conclusions:** Preliminary results confirm feasibility and align with international data. The MNRB optimized nodule assessment, reduced false-positives, and enhanced personalized management. Comprehensive evaluation will follow completion of all screening rounds.
07 Sep 2025	Incidental Findings From the Annual Follow-Up in the 4-In-The-Lung-Run Lung Cancer Screening Trial	C. van der Aalst	• **Introduction:** LCS reduces mortality but frequently detects incidental findings (IFs), raising costs and patient anxiety. The 4ITLR trial assessed IF frequency, progression, and clinical relevance during annual follow-up. • **Methodology**: LDCT scans from 2,601 Dutch participants (Feb 2024–Jan 2025) were reviewed. IFs were classified by anatomical site, with potentially significant findings reported to general practitioners (GPs). Coronary calcifications and emphysema were categorized as comorbidities; Agatston scores >300 were systematically reported. • **Results:** IFs were detected in 65 participants (2.5%), totaling 70 lesions: 23 intrapulmonary, 14 intrathoracic-extrapulmonary, 18 extrathoracic, and 15 vascular. Of these, 25 (1.0%) were GP-reported; 9 (0.3%) were new or progressive. No acute IFs emerged. • **Conclusions:** IF prevalence was low and without acute impact. Routine MNRB-supported reporting may limit unnecessary interventions, with further follow-up needed to clarify long-term clinical value.

Notable Presentations At IASLC 2025 Lung Cancer Screening (3/5)

Date	Title	Author	Summary
07 Sep 2025	Trajectories of Synchronous Subsolid Nodules in Patients With Resected Subsolid Lung Adenocarcinoma: A Multicenter Cohort Study	S. Jung	• **Introduction:** Multifocal subsolid nodules (SSNs), frequently detected in screening, represent a spectrum of LUAD precursors, but their trajectories in patients with resected LUAD remain unclear. • **Methodology**: A retrospective cohort of 409 LUAD patients with 1,791 synchronous SSNs (2009–2019, South Korea) was analyzed. Nodule-level longitudinal assessments over a mean 80.6 months and Cox regression identified predictors of growth and progression. • **Results:** Of 1,002 followed SSNs, 16.9% grew and 7.9% developed into stage 0–I adenocarcinomas. Growth risk was linked to part-solid type, larger size, bubble lucency, and pleural retraction, but not SSN number. Patient-level outcomes showed no significant impact on mortality or survival. • **Conclusions:** Synchronous SSNs show variable progression, driven by intrinsic features rather than nodule count. Results support individualized, nodule-based management and refined growth thresholds to guide intervention.
08 Sep 2025	Feasibility and Preliminary Efficacy of Multimodal Prehabilitation in Patients With NSCLC Receiving Neoadjuvant Therapy	R. Sebio-Garcia	• **Introduction:** NSCLC patients receiving neoadjuvant therapy (NAT) often experience reduced cardiopulmonary fitness (CRF). This study explored feasibility of multimodal prehabilitation. • **Methodology**: Twenty patients were offered supervised exercise with nutritional and psychological support during NAT (9–12 weeks). Feasibility, adherence, and safety were assessed. • **Results:** Recruitment was 70%, retention 79.6%, and adherence 63.5%. No prehabilitation-related adverse events occurred. CRF decline was minimal, with several patients showing stability or improvement. • **Conclusions:** Prehabilitation during NAT is feasible, safe, and may maintain CRF.

Notable Presentations At IASLC 2025 Lung Cancer Screening (4/5)

Date	Title	Author	Summary
08 Sep 2025	Breathomics for Early Non-Invasive Detection of Lung Cancer: A Propectively Multicenter Study Using TD-GC-MS and Portable Micro-GC	R. Wang	• **Introduction:** Breathomics is being explored as a non-invasive, radiation-free lung cancer screening tool. This study evaluated TD-GC-MS biomarker discovery and portable µGC-µPID validation. • **Methodology**: In a multicenter trial (n=5,292; 1,676 cancers, 4,616 controls), logistic regression was trained on TD-GC-MS data and validated internally (n=719) and externally (n=2,441) with µGC-µPID. • **Results:** Fourteen biomarkers achieved AUC 0.91 internally (95% sensitivity, NPV 91%) and AUC 0.87 externally (91% sensitivity, NPV 96%). Strong performance was noted for nodules <10 mm and stage IA1 cancers. • **Conclusions:** Breathomics shows high sensitivity, scalability, and cost-effectiveness, supporting integration into early detection strategies.
08 Sep 2025	Cell-Free DNA Methylation Markers in Serum and Bronchial Washing for Lung Cancer Detection: A Prospective Observational Study	Y. Song	• **Introduction:** Early detection of malignant nodules remains challenging despite increased use of bronchoscopy in the LCS era. This study assessed DNA methylation markers in serum and bronchial washing (BW) for diagnostic accuracy. • **Methodology**: A prospective study (May 2024–Feb 2025, n=200; final n=191) analyzed methylation of 4 serum genes and 2 BW genes in patients with pulmonary nodules. ROC analysis assessed diagnostic performance. • **Results:** Of 191 patients, 123 had malignancy (63% adenocarcinoma). Serum panel showed AUC 0.600 (80% sensitivity, 40% specificity). BW panel outperformed (AUC 0.785; 75% sensitivity, 82% specificity). Methylation positivity was not linked to clinicopathologic features. • **Conclusions:** DNA methylation panels are feasible for early lung cancer detection, with BW outperforming serum, supporting its clinical utility.

Notable Presentations At IASLC 2025
Lung Cancer Screening (5/5)

Date	Title	Author	Summary
09 Sep 2025	Preoperative Prediction of Grade 3 Invasive Non-Mucinous Adenocarcinoma Using Semiconductor 18F-FDG-PET/CT: A Diagnostic Accuracy Study	H. Notsuda	• **Introduction:** Invasive non-mucinous adenocarcinoma (INMA) grading predicts prognosis, with Grade 3 linked to poor outcomes. Conventional CT and cPET/CT have limited predictive accuracy, while semiconductor PET/CT (sPET/CT) offers higher resolution. • **Methodology**: A retrospective study of 550 resected INMA cases (2010–2022) compared cPET/CT (n=328) and sPET/CT (n=222). WHO 2021 criteria defined grading. ROC analyses assessed diagnostic accuracy; survival was evaluated with Kaplan-Meier. • **Results:** cPET/CT achieved AUC 0.769 (84% sensitivity, 59% specificity). sPET/CT outperformed with AUC 0.811, 74.5% sensitivity, 78.4% specificity (SUVmax cutoff 6.8), particularly in stage II+ or tumors ≤2 cm. • **Conclusions:** sPET/CT provides superior non-invasive prediction of Grade 3 INMA, guiding neoadjuvant therapy and surgical planning for more personalized NSCLC care.

Notable Presentations At IASLC 2025 Chemotherapy and Radiotherapy (1/2)

Date	Title	Author	Summary
07 Sep 2025	Efficacy and Safety of Immunotherapy as First-Line Treatment in Metastatic Pulmonary Large-Cell Neuroendocrine Carcinoma	H. Yang	• **Introduction:** This study aimed to evaluate the efficacy and safety of combining PD-1/PD-L1 inhibitors with chemotherapy for metastatic LCNEC. • **Methodology**: A retrospective analysis of 130 patients treated with either immunotherapy plus chemotherapy (ICT) or chemotherapy alone (CT) from January 2015 to October 2024. Key outcomes included progression-free survival (PFS), overall survival (OS), objective response rate (ORR), and disease control rate (DCR). • **Results:** The ICT group showed improved median PFS (7.9 vs. 5.3 months, p = 0.022), but no significant OS difference (15.4 vs. 19.5 months, p = 0.865). Safety profiles were similar, with no new safety signals. • **Conclusions:** Combining PD-1/PD-L1 inhibitors with chemotherapy improved PFS but did not enhance OS for advanced LCNEC.
09 Sep 2025	Immunotherapy Combined With Radiotherapy as Neoadjuvant Therapy in Resectable NSCLC: A Single Arm, Phase II Clinical Study	B. Wang	• **Introduction:** This study aims to assess the efficacy and safety of a chemo-free regimen combining PD-1 inhibitor tislelizumab with radiotherapy in resectable stage IB-IIIA NSCLC. • **Methodology**: A non-randomized phase II trial involving patients receiving intensity-modulated radiotherapy (IMRT) at 40 Gy and tislelizumab for neoadjuvant treatment, followed by curative resection and adjuvant tislelizumab. Primary endpoints include safety and pCR rate, while secondary endpoints are major pathological response (MPR) and 1-year event-free survival (EFS). • **Results:** Efficacy and safety outcomes will be analyzed based on intention-to-treat principles. • **Conclusions:** This trial evaluates a novel chemo-free approach with promising potential for improving pCR and EFS in NSCLC patients.

Notable Presentations At IASLC 2025 Chemotherapy and Radiotherapy (2/2)

Date	Title	Author	Summary
09 Sep 2025	Efficacy and Safety of Aumolertinib as Adjuvant Therapy in Resectable Stage IA3 EGFRm NSCLC With High Risk Factors	B. Zhao	• **Introduction:** The rise in stage I NSCLC incidence, especially IA3, calls for more effective adjuvant treatments. IA3 patients, despite being in the early stage, face higher recurrence risks due to factors like spread through air spaces (STAS) and vascular invasion (VI), with 5-year recurrence-free survival (RFS) rates as low as 65%-75%. Aumolertinib, an EGFR TKI, shows promise in EGFR-mutant tumors, but its benefit in IA3 NSCLC with high-risk factors is unknown. • **Methodology**: A single-arm phase II trial will assess aumolertinib in 30 resected stage IA3 NSCLC patients with EGFR mutations and high-risk factors. Primary endpoint is 2-year disease-free survival (DFS), with secondary endpoints including median DFS, overall survival (OS), and safety. • **Results:** Data collection ongoing, with trial initiation in March 2025. • **Conclusions:** This study aims to provide crucial evidence on the efficacy and safety of aumolertinib for high-risk stage IA3 NSCLC.
09 Sep 2025	Phase II Trial and Correlative Genomic Analysis of Neoadjuvant Sintilimab Plus Chemotherapy in EGFR-Mutant Non-Small Cell Cancer	C. Zhang	• **Introduction:** This update reports on survival and comprehensive genomic analysis, including multi-cohort data. • **Methodology**: The open-label trial enrolled 35 patients with stage IIB-IIIB (N2) EGFR-mutant NSCLC, receiving sintilimab plus chemotherapy followed by surgery or adjuvant osimertinib. A genomic analysis included 104 patients across various treatment cohorts. • **Results:** With 22.5 months of follow-up, the median event-free survival (EFS) was 25.3 months, with 12- and 24-month EFS rates of 88.6% and 60%, respectively. EGFR L858R mutations showed better responses. No OS events were observed, and no severe immune-related toxicities were noted. Comprehensive genomic testing identified potential biomarkers for personalized therapy. • **Conclusions:** Neoadjuvant sintilimab plus chemotherapy showed promising activity without significant toxicity, and genomic profiling may guide personalized treatment strategies for EGFR-mutant NSCLC.

Notable Presentations At IASLC 2025
Surgical Interventions (1/2)

Date	Title	Author	Summary
08 Sep 2025	Stereotactic Ablative Radiotherapy in Oligo-Metastatic NSCLC Patients:START NEW ERA#OLIGO Non-Randomised Phase II Trial	F. ARCIDIACONO	• **Introduction:** This trial assesses whether stereotactic ablative radiotherapy (SAbR) targeting oligo-P sites can enhance patient outcomes. • **Methodology:** The non-randomized phase II START-NEW-ERA trial enrolled 80 oligo-P NSCLC patients after first-line therapy. Primary endpoints included new systemic therapy-free survival (NST-FS) and safety. • **Results:** After 30 months of follow-up, the median NST-FS was 34 months. The median progression-free survival (PFS) was 9 months, and median overall survival (OS) was 57 months. SAbR was safe, with minimal severe toxicities. • **Conclusions:** SAbR effectively extended systemic therapy without significant toxicity, supporting its use as standard care for oligo-P NSCLC.
09 Sep 2025	Real-World Study in Patients With ALK+ Metastatic Non-Small Cell Lung Cancer (mNSCLC) Treated With First-Line (1L) Lorlatinib	S. Gadgeel	• **Introduction:** This study aimed to describe patient and provider characteristics and real-world starting doses for 1L lorlatinib. • **Methodology:** A multi-site, retrospective chart review of 50 patients with ALK+ mNSCLC treated with 1L lorlatinib after March 2021. The primary objective was to assess real-world demographics and clinical characteristics. • **Results:** The median time from diagnosis to treatment initiation was 16.5 days. Most patients (62%) started lorlatinib in 2024, with 82% beginning at 100 mg. The median follow-up was 7.8 months, with 82% remaining on treatment. • **Conclusions:** The median time from diagnosis to treatment initiation was 16.5 days. Most patients (62%) started lorlatinib in 2024, with 82% beginning at 100 mg. The median follow-up was 7.8 months, with 82% remaining on treatment.

Notable Presentations At IASLC 2025
Surgical Interventions (2/2)

Date	Title	Author	Summary
09 Sep 2025	Multicenter Retrospective Study of Selpercatinib Treatment for Advanced or Recurrent RET Fusion-Positive NSCLC in Japan	Y. Mihashi	• **Introduction:** This multicenter study aimed to evaluate the efficacy and safety of selpercatinib in Japanese patients with recurrent or advanced RET fusion-positive NSCLC. • **Methodology:** A retrospective study enrolled 27 patients diagnosed with advanced/recurrent RET fusion-positive NSCLC who received selpercatinib between September 2021 and June 2024. Efficacy outcomes included objective response rate (ORR), progression-free survival (PFS), and overall survival (OS). Safety was assessed based on adverse events. • **Results:** The ORR was 80% in previously treated and 76% in treatment-naive groups. Median PFS was 23.5 months for the treatment-naive group. The most common Grade 3 adverse events were liver dysfunction (increased ALT/AST) and hypertension. • **Conclusions:** This study indicates a trend toward lower ORR and PFS in treatment-naive patients compared to LIBRETTO-001. The Japanese population may experience more severe liver dysfunction, suggesting the need for careful dose management.
09 Sep 2025	Efficacy of Re-Irradiation With SABR of Lung Cancer After Primary SABR: A Single Centre Experience	N. Balaramal	• **Introduction:** This study aims to evaluate progression-free survival (PFS), local control (LC), and overall survival (OS) after SABR re-irradiation for SPLC. • **Methodology:** A retrospective analysis of 1033 patients who received SABR between 2015 and 2020 identified 28 patients who underwent SABR re-irradiation for SPLC, at least 2 years after primary SABR. • **Results:** The median age was 72.7 years, and the median OS and PFS from the second SABR were 30 months and 23 months, respectively. The LC rate was 92.9%, similar to primary SABR. • **Conclusions:** SABR re-irradiation for SPLC shows promising effectiveness with excellent LC, warranting further study on treatment failure patterns and dosimetry.

Notable Presentations At IASLC 2025 Immunotherapy (1/4)

Date	Title	Author	Summary
07 Sep 2025	A Phase II Study of Camrelizumab Plus Docetaxol in Advanced NCSLC Pre-Treated With Immune Checkpoint Inhibitors and Chemotherapy	J. Zhou	• **Introduction:** This study evaluates the efficacy and safety of camrelizumab plus docetaxel as second-line therapy in these patients. • **Methodology:** A prospective multicenter phase II trial included advanced NSCLC patients who progressed after first-line ICI and chemotherapy. Patients received camrelizumab (200mg IV Q3W) and docetaxel (75mg/m² IV Q3W). Primary endpoint: progression-free survival (PFS); secondary endpoints: overall survival (OS), objective response rate (ORR), and safety. • **Results:** In 22 male patients, median PFS was 4.0 months, with an ORR of 11.8% and a disease control rate (DCR) of 75.5%. Subgroup analysis showed that patients with reactive cutaneous capillary endothelial proliferation (RCCEP) had significantly longer PFS (6.0m vs 1.9m). PD-L1 TPS ≥50% was associated with better PFS (12.1m vs 1.9m). Common adverse effects were fatigue (72.7%) and RCCEP (59.1%). • **Conclusions:** Camrelizumab and docetaxel may be a promising second-line therapy for NSCLC patients after progression on first-line ICI-chemotherapy, particularly in those with PD-L1 TPS ≥50% or RCCEP. Further studies with larger cohorts are needed to confirm these findings.
07 Sep 2025	Camrelizumab-Based Therapy-Induced RCCEP in Advanced NSCLC Patients: A Pooled Analysis of Two Phase III Registration Trials	C. Zhou	• **Introduction:** This pooled analysis investigates the clinical features of RCCEP and its prognostic relevance in advanced non-small cell lung cancer (NSCLC) treated with camrelizumab. • **Methodology:** Data were pooled from two phase III trials, CameL and CameL-sq, involving patients with stage IIIB-IV NSCLC treated with camrelizumab and chemotherapy. Landmark analyses assessed survival outcomes with RCCEP onset as the reference. • **Results:** RCCEP occurred in 73.4% of patients, mainly mild (grade 1 and 2). Patients with RCCEP had significantly improved clinical outcomes, including higher objective response rates (ORR: 71.9% vs. 36.8%), longer progression-free survival (13.01 vs. 6.97 months; HR=0.43), and better overall survival (31.70 vs. 12.22 months; HR=0.30). • **Conclusions:** RCCEP, predominantly mild in severity, was associated with superior treatment efficacy, suggesting it as a potential predictive biomarker for camrelizumab efficacy in advanced NSCLC.

Notable Presentations At IASLC 2025 Immunotherapy (2/4)

Date	Title	Author	Summary
07 Sep 2025	Phase II Study of Combination Azacitidine and Entinostat and Nivolumab in Patients With Metastatic Non-Small Cell Lung Cancer	K.A. Marrone	• **Introduction:** This study evaluates epigenetic therapy combined with nivolumab in metastatic NSCLC. • **Methodology:** A phase II study (NCT01928576) enrolled ICB-naïve (Arm D), ICB-refractory (Arm E), and ICB-pretreated (Arm F) patients. They received azacitidine, entinostat, and nivolumab for 6 cycles, followed by nivolumab alone. Primary endpoint: overall response rate (ORR); secondary endpoints: time to progression (TTP), progression-free survival (PFS), and safety. • **Results:** 40 patients enrolled; ORR was 21% (Arm D), 14% (Arm E), and 11% (Arm F). Median TTP was 7.8 months (Arm D), 4.9 months (Arm E), and 3.8 months (Arm F). Median overall survival (mOS) was 24.6 months (Arm D), 5.0 months (Arm E), and 12.1 months (Arm F). Therapy was safe with minimal toxicities. • **Conclusions:** Epigenetic therapy with ICB is safe and promising, especially in the post-ICB setting. Ongoing studies aim to identify biomarkers for patient selection and optimize outcomes.
07 Sep 2025	Phase Ib Study of Golidocitinib Plus Anti-PD-1 in Anti-PD-1 Treated Advanced NSCLC: Dose-Escalation Safety Using BOIN Design	H. Zhong	• **Introduction:** This study evaluates Golidocitinib, a JAK1 inhibitor, with anti-PD-1 in patients with NSCLC who progressed after first-line ICI therapy, focusing on safety, tolerability, and preliminary efficacy. • **Methodology:** This phase Ib, single-center study used a Bayesian Optimal Interval (BOIN) design to establish the recommended dose of Golidocitinib with anti-PD-1. Patients received Golidocitinib (75 or 150 mg daily) and anti-PD-1 (200 mg every 3 weeks). Dose-limiting toxicities (DLTs) were assessed over 28 days. • **Results:** Six patients enrolled; no DLTs were observed. Grade 2 adverse events included neutropenia, hypertriglyceridemia, leukopenia, thrombocytopenia, and proteinuria. One patient had atrial fibrillation. The 150 mg dose was selected for the expansion phase, focusing on ORR. • **Conclusions:** Golidocitinib (150 mg daily) with anti-PD-1 was well-tolerated, with no DLTs in the dose-escalation phase. These results support the expansion phase, offering a strategy to overcome ICI resistance in NSCLC.

Notable Presentations At IASLC 2025 Immunotherapy (3/4)

Date	Title	Author	Summary
07 Sep 2025	First-Line Atezolizumab Plus Chemotherapy in Elderly Patients With Advanced NSCLC, IFCT-1805 Elderly: A Randomized, Multicenter, Phase 3 Trial	C. MASCAUX	• **Introduction:** The IFCT-1805 ELDERLY trial assessed the addition of atezolizumab (ATZ) to the standard carboplatin and paclitaxel CT regimen in elderly patients with advanced NSCLC. • **Methodology:** A multicenter phase III trial randomized patients aged 70-89 with metastatic or locally advanced NSCLC to receive CT with (CT+IO arm) or without (CT arm) ATZ. Primary endpoint: overall survival (OS); secondary endpoints: progression-free survival (PFS), objective response rate (ORR), duration of response (DOR), and safety. • **Results:** 510 patients were randomized, with a median age of 77. Median OS was 18.6 months for CT+IO vs 15.0 months for CT (HR 0.87, p=0.20), showing no significant difference. PFS improved significantly with IO (7.4 months vs 5.7 months, HR 0.56, p<0.0001). ORR was 51.2% for CT+IO vs 41.8% for CT (p=0.04), and median DOR was 6.7 months vs 3.8 months (p<0.0001). Safety analysis showed higher grade ≥3 treatment-related adverse events (71.4% vs 61.9%, p=0.03). • **Conclusions:** Adding ATZ to CT improved PFS, ORR, and DOR in elderly NSCLC patients but did not significantly improve OS. These results suggest that while ATZ enhances some efficacy measures, it does not provide a significant survival advantage in this patient population.
08 Sep 2025	Phase 2 Trial of Tislelizumab Plus Chemotherapy Induction Therapy for Newly Diagnosed Stage III Unresectable NSCLC	Z. Wu	• **Introduction:** This study evaluates the efficacy and safety of Tislelizumab with chemotherapy in neoadjuvant treatment for unresectable stage III NSCLC. • **Methodology:** An open-label, single-arm prospective study (NCT06357598) with primary endpoint R0 resection rate. Secondary endpoints include surgery rate, ORR, MPR, pCR, downstaging rate, DFS, and safety. • **Results:** As of March 28, 2025, 19 patients enrolled, with 12 completing induction therapy. The ORR was 66.7%, with a surgical conversion rate of 83.3% and an R0 resection rate of 100%. Among surgically-treated patients, the downstaging rate was 90%, MPR 50%, and pCR 40%. The incidence of Grade ≥3 treatment-related adverse events was 16.7%, and immune-related adverse events (irAEs) were observed in 33.3%. • **Conclusions:** Tislelizumab combined with chemotherapy shows promising antitumor activity and manageable safety in newly diagnosed stage III unresectable NSCLC.

Notable Presentations At IASLC 2025 Immunotherapy (4/4)

Date	Title	Author	Summary
09 Sep 2025	ICI Rechallenge in Non Small Cell Lung Cancer: A Retrospective Analysis of Efficacy and Prognostic Factors	S. Minami	• **Introduction:** This study evaluates the clinical efficacy of ICI rechallenge and identifies prognostic factors. • **Methodology:** This single-center retrospective study analyzed NSCLC patients who underwent ICI rechallenge from August 2017 to November 2024. Data were collected on overall survival (OS), progression-free survival (PFS), and immune-related adverse events (irAEs). • **Results:** 47 patients were included, with a median age of 67. The median PFS was 2.17 months and median OS was 6.31 months. Longer intervals (≥15 months) between initial ICI and rechallenge, prior irAEs, and NLR <4 were associated with improved OS. Multivariate analysis identified irAEs (HR: 0.29) and NLR <4 (HR: 0.34) as independent predictors of better OS. During rechallenge, 34% experienced irAEs, with 19.1% having grade ≥3 events. • **Conclusions:** Longer intervals between ICIs, prior irAEs, and lower NLR are associated with improved survival after ICI rechallenge. These factors may help identify candidates for rechallenge therapy in NSCLC.
09 Sep 2025	Efficacy of Immunotherapy in EGFR-Mutant NSCLC After Tyrosine Kinase Inhibitors: Real World Analysis at a Tertiary Oncology Center in Hong Kong	G.W.G. Kwok	• **Introduction:** This study reports real-world outcomes of EGFR-mutant NSCLC patients who received anti-PD1/PD-L1 IO after TKI progression. • **Methodology:** Pts with EGFR-mutant advanced lung adenocarcinoma treated at Queen Mary Hospital from 1/1/2017 to 31/12/2022 were retrospectively identified. Patients progressed on one or more TKIs and subsequently received platinum-doublet chemotherapy with or without concurrent IO +/- bevacizumab. The efficacy of IO on overall survival (OS) and progression-free survival (rwPFS) was analyzed based on PD-L1 expression. • **Results:** Of 104 patients, the median age was 62.3 years, and 79.8% were non-smokers. The median OS was 20.0 months. Patients who received IO had an OS of 24.0 months compared to 15.7 months for those without IO (log-rank P=0.83). PD-L1 expression was not predictive of rwPFS (P=0.37) or OS (P=0.76). IO with platinum chemotherapy and bevacizumab showed a trend for improved OS (25.8 vs. 16.3 months, P=0.4) and significantly improved rwPFS (9.7 vs. 3.2 months, P=0.024). • **Conclusions:** Real-world analysis suggests limited benefit of anti-PD1/PD-L1 IO after TKI progression in EGFR-mutant NSCLC. The combination of IO, platinum chemotherapy, and bevacizumab shows improved efficacy, while PD-L1 expression was not a reliable biomarker for predicting outcomes.

Notable Presentations At IASLC 2025
Molecular Biomarkers and Genetics (1/4)

Date	Title	Author	Summary
07 Sep 2025	Efficacy and Multi-Omics Insights of Immune Checkpoint Inhibitors in NSCLC With Leptomeningeal Metastasis	L-B.B. Tang	• **Introduction:** This study evaluates the efficacy of ICIs for NSCLC with LM and explores potential biomarkers using multi-omic analysis of cerebrospinal fluid (CSF) and plasma. • **Methodology:** Seventy-two NSCLC patients with LM treated with ICIs were enrolled at Guangdong Lung Cancer Institute from 2017 to 2024. Patients were grouped into response and non-response cohorts based on treatment duration. Multi-omic profiling, including proteomic, metabolomic, and sequencing analyses, was done on CSF and plasma. • **Results:** The median overall survival (OS) was 19.2 months, and median progression-free survival (PFS) was 4.3 months, influenced by age and driver gene status. The response cohort had longer OS than the non-response cohort (21.7 vs. 4.9 months, P<0.0001). Elevated MCP-3 levels in CSF and plasma were linked to better response (P=0.02). CSF circulating tumor DNA detection also correlated with response (P=0.02). • **Conclusions:** Some LM patients benefit from ICI combination therapy, with MCP-3 identified as a potential efficacy biomarker. Further studies are needed to explore ICIs for LM in NSCLC.
07 Sep 2025	The Efficacy of Immunotherapy for Patients With Advanced Lung Cancer and Oncogenic Driver Alterations	J. Zhong	• **Introduction:** This study evaluates the clinical effectiveness of ICIs in genetically defined NSCLC subsets. • **Methodology:** A retrospective analysis of patients with advanced NSCLC harboring driver mutations, who received ICIs at Shanghai Chest Hospital from June 2017 to May 2024, was conducted. Clinical data, PD-L1 expression, and treatment outcomes (RECIST 1.1, PFS, OS) were analyzed. RNA-seq data from The Cancer Genome Atlas (TCGA) was used to analyze the tumor immune microenvironment (TIME) in NSCLC. • **Results:** Of 407 patients, 146 (35.9%) received ICIs after prior TKI therapy, and 261 (64.1%) as first-line therapy. The median PFS was 17.0 months; median OS was not reached. Mutation-specific PFS was highest for BRAF (31.3 months) and RET (31.5 months), followed by KRAS (28.3 months) and others. PD-L1 expression was significantly associated with prolonged PFS in KRAS-mutant tumors (P=0.0181). RNA-seq showed upregulation of immune effector genes in KRAS- and BRAF-mutant tumors, with higher enrichment in antitumor pathways. A meta-analysis confirmed the highest ORRs in KRAS- and BRAF-mutant tumors. • **Conclusions:** ICIs show differential responses based on driver mutations, emphasizing the need for molecularly guided treatment strategies to optimize outcomes in NSCLC.

Notable Presentations At IASLC 2025
Molecular Biomarkers and Genetics (2/4)

Date	Title	Author	Summary
08 Sep 2025	Integrated Molecular Analysis of Advanced NSCLC Depicts Molecular Signatures Associated With Tyrosine Kinase Inhibitors Efficacy	P. Bironzo	• **Introduction:** This study aims to characterize the genomic and epigenetic signatures associated with TKI response in EGFR+ and ALK+ advanced NSCLC patients. • **Methodology:** Genomic profiling was performed on samples from patients treated with first-line next-generation TKIs (osimertinib or alectinib) using the Oncomine Comprehensive Assay Plus panel. MicroRNA profiling was done with a PCR-based global miRNome assay. Clinical characteristics, including best response and progression-free survival (PFS), were analyzed. Subgroup analysis of short-term responders (STR) and long-term responders (LTR) was also conducted. • **Results:** Genomic profiling was completed on 60 samples (44 EGFR+, 16 ALK+), and miRNome analysis on 52 samples. After a median follow-up of 14 months, EGFR+ cases with TP53 co-mutations had shorter PFS (HR 3.63, p=0.0029), while ALK+ cases with HLA A gene loss also had shorter PFS (HR 45.26, p=0.004). MicroRNA profiling identified significant deregulation in LTR and STR patients. In EGFR+ cases, miR-423-3p, miR-744-5p, and miR-455-3p regulated the TGF-β pathway, while ALK+ cases showed immune-related chemokine pathway deregulation. • **Conclusions:** Molecular testing may help predict the efficacy of first-line next-generation TKIs in EGFR+ and ALK+ advanced NSCLC. Larger studies are needed to validate these findings.
08 Sep 2025	Molecular Profiling of Lung Cancer Brain Metastases: Analysis Between Liquid Biopsy and Brain Metastasis Tissue Results	R. Kotecha	• **Introduction:** Molecular profiling is key in metastatic NSCLC. While brain metastases (BM) may have discordant mutations from primary tumors, the relationship between ctDNA liquid biopsies and intracranial tissue remains unclear. • **Methodology:** De-identified data from metastatic NSCLC patients with both ctDNA and BM tissue assays were analyzed, focusing on 83 genes for actionable mutations. Chi-squared tests compared groups • **Results:** Among 115 patients, 92 had ≥1 actionable mutation. Tissue testing detected actionable mutations in 98% (n=90), ctDNA in 53% (n=49). Of 47 patients with mutations in both, 34% were concordant, 13% partially, and 53% discordant. At the variant level, 22% of tissue and 21% of ctDNA variants were actionable, with 37.5% concordance. • **Conclusions:** BM tissue testing is more sensitive than ctDNA for actionable mutations, but each detects unique variants. Combining tissue and ctDNA may improve diagnostic yield for systemic and intracranial disease.

Notable Presentations At IASLC 2025
Molecular Biomarkers and Genetics (3/4)

Date	Title	Author	Summary
09 Sep 2025	Biomarker Analysis and Final Efficacy of Lorlatinib in Patients With ALK-Positive Advanced Non-Small Cell Lung Cancer	B. Solomon	• **Introduction:** ALK mutations are potential markers of lorlatinib response, but other correlates like ALK fusion subtypes and co-mutations may help predict clinical outcomes and resistance mechanisms. • **Methodology:** Plasma samples from patients in the phase 2 study (NCT01970865) were collected at baseline and end of treatment. ctDNA analysis using Guardant360 identified ALK fusion subtypes, mutations, and TP53 status, correlating with clinical outcomes. Tumor tissue samples were also analyzed. • **Results:** Thirty patients in EXP1, 59 in EXP2-3A, and 139 in EXP3B-5 enrolled. Baseline ctDNA was available for 28, 55, and 129 patients, respectively. In EXP2-3A, short EML4-ALK v3 had shorter OS than long variants. TP53 mutations were linked to shorter OS across cohorts. No acquired ALK mutations appeared in EXP1, but single and compound ALK mutations emerged in EXP2-3A and EXP3B-5. • **Conclusions:** Lorlatinib prolonged OS in ALK-positive NSCLC, with mutations emerging in previously treated patients, highlighting the need for resistance mechanism research.
09 Sep 2025	Tumor-Infiltrating Lymphocytes as Predictors of Chemotherapy Response in Non-Small Cell Lung Cancer: A Retrospective Cross-Sectional Study	A. Caldart Tregnago	• **Introduction:** This study evaluates the relationship between TIL density and tumor size reduction following chemotherapy in NSCLC patients. • **Methodology:** A retrospective study of 51 stage III-IV NSCLC patients treated with chemotherapy. TIL density in post-chemotherapy biopsies was classified as low (0-25%), moderate (25-50%), or high (>50%). Tumor size changes were measured via imaging, and ANCOVA assessed the correlation with TIL density, adjusting for age, sex, and clinical stage. Interobserver agreement for TIL quantification was evaluated. • **Results:** Higher TIL density was significantly associated with greater tumor shrinkage ($F = 83.109$, $p < 0.001$, $\eta^2 = 0.551$). High TIL patients showed a mean reduction of -3.18 cm, compared to 0.52 cm for low TIL patients. High TIL density also correlated with improved survival (mean 22.75 months). Interobserver agreement was substantial (mean Cohen's kappa = 0.673). • **Conclusions:** TILs may predict chemotherapy response in NSCLC, enhancing patient stratification and treatment planning. Standardized TIL assessment could inform immunotherapy decisions.

Notable Presentations At IASLC 2025
Molecular Biomarkers and Genetics (4/4)

Date	Title	Author	Summary
09 Sep 2025	Genomic Insights Into ALK-Rearranged NSCLC: A Comprehensive Study	W. Khatoon	• **Introduction:** ALK rearrangements in NSCLC have led to targeted therapies, but some patients experience rapid progression. Identifying genetic signatures predicting rapid progression could improve molecular testing and risk stratification. • **Methodology:** 46 FFPE samples were collected from ALK-rearranged NSCLC patients (2014-2024). RNA fusion was detected in 41 samples using a custom RNA fusion panel. Additionally, 32 samples underwent targeted DNA sequencing for 72 key lung cancer genes. • **Results:** Of the 41 samples, 17 were high-risk (MPFS: 2), 6 moderate-risk (MPFS: 13.5), and 18 low-risk (MPFS: 39). ALK fusion partner was positive in 26 samples, with V1 being most common (53.8%). Mutations in TP53, MUC16, and CREBBP were in all risk groups, while mutations in APC, ARID1A, KMT2D, SETD2, PIK3R1, KRAS, and EGFR were linked to higher-risk and poorer treatment response. • **Conclusions:** Mutations in APC, ARID1A, KMT2D, SETD2, PIK3R1, KRAS, and EGFR may predict tumor aggressiveness. Evaluating these with ALK status is essential for determining treatment, and combination therapies may be needed for patients with co-occurring oncogenic drivers.
09 Sep 2025	Liquid Biopsy Shortens Time to Diagnosis and Treatment Selection: Primary Results From the International L1St Study	F. Barlesi	• **Introduction:** The L1st study (NCT05846594) evaluates liquid-based genomic profiling (FoundationOne® Liquid CDx; F1LCDx®) to streamline the diagnostic process and expedite clinical decision-making in advanced lung and gastrointestinal cancers. • **Methodology:** F1LCDx was performed with or without prior tissue biopsy, and results were promptly provided to physicians. Primary endpoint: time to diagnosis (TTD) from the first biopsy/tissue/blood request. Secondary endpoints: time to treatment recommendation (TTR) and concordance between F1LCDx and standard of care (SoC). • **Results:** By cutoff (23 Oct 2024), 159 participants had basic workup, and 98 had extended workup. Median F1LCDx vs. SoC TTD: 15.0 vs. 34.0 days ($P < 0.0001$) for basic workup, 14.0 vs. 35.0 days for any workup ($P < 0.0001$). Median F1LCDx vs. SoC TTR: 20.0 vs. 43.0 days ($P < 0.0001$). F1LCDx and SoC concordance: 78%. 82% had genomic alterations, with key alterations in BRCA2 (17%), EGFR (14%), and KRAS (12%). 16% received first-line targeted therapy based on F1LCDx (vs. 12% with SoC). • **Conclusions:** Liquid biopsy enhances diagnostic timelines and treatment decisions in advanced lung cancer, enabling earlier molecular diagnostics and complex alteration identification, potentially improving outcomes.

Notable Presentations At IASLC 2025
Patient Outcomes and Real-World Studies (1/2)

Date	Title	Author	Summary
07 Sep 2025	Real-World Insights on Treatment Patterns and Outcomes in ROS1 NSCLC: An Australian Multicenter Study (AURORA)	M. Itchins	• **Introduction:** ROS1 NSCLC is rare, with limited real-world survival data. The AURORA cohort offers comprehensive insights across Australia. • **Methodology**: Patients diagnosed by FISH/NGS (2009–2024) were assessed for demographics, treatments, and OS using Kaplan-Meier. • **Results:** Of 104 patients, median age 56, 66% female; 76% had advanced disease, 14% with brain metastases. In advanced cases (N=93), 72% received first-line ROS1 therapy (entrectinib 33%, crizotinib 25%); 96% received targeted therapy overall, 59% trial enrolment. Median OS: 92 months (early-stage) and 56 months (advanced, first-line targeted). • **Conclusions:** ROS1 therapy yielded durable survival, outperforming prior real-world cohorts.
09 Sep 2025	Real-World Treatment Strategy and Postoperative Prognosis for Clinical Stage II/III NSCLC: A Multicenter Study	T. Matsubara	• **Introduction:** Perioperative targeted and immunotherapies are reshaping stage II/III NSCLC care. This study evaluated real-world treatment patterns and outcomes in Japan. • **Methodology**: Retrospective analysis of 201 stage II/III NSCLC patients (Mar 2022–Aug 2024) across five centers. Endpoints included treatment selection by clinical stage/N status and recurrence-free survival (RFS). • **Results:** Median age 72, 68% male. Upfront surgery occurred in 82%; 18% received neoadjuvant therapy, including nivolumab+chemo (7%). Neoadjuvant use rose post-approval (10%→24%). One-year RFS rates were similar across stage (II: 76%, III: 73%), N status (cN0–cN2: 71–77%), and modalities (70–79%). • **Conclusions:** Neoadjuvant therapy adoption increased, equalizing short-term outcomes for cN1/N2 with cN0 disease. Longer follow-up is needed.

Notable Presentations At IASLC 2025
Patient Outcomes and Real-World Studies (2/2)

Date	Title	Author	Summary
09 Sep 2025	Real-World Effectiveness of First-Line Osimertinib in EGFR-Mutated NSCLC: Interim Results From the French POSITHES Study	F. Guisier	• **Introduction:** Osimertinib is standard 1L therapy for EGFRm NSCLC. POSITHES assessed its real-world (RW) effectiveness in France. • **Methodology**: Multicenter ambispective study (N=233; 47 sites; 2021–2022) included newly diagnosed EGFR Ex19del/L858R NSCLC patients treated with 1L osimertinib. Outcomes included PFS, response, and safety with 24-month follow-up. • **Results:** Patients were predominantly female (66%), never-smokers (60%), ECOG ≤1 (82%), median age 73; 32% had brain metastases (BM). Best responses: CR 9.1%, PR 62.5%, SD 22.6%. Median PFS was 16.6m overall, 12.9m with BM vs 18.8m without. Age ≥70 showed no PFS difference. Safety was consistent. • **Conclusions:** RW outcomes matched FLAURA trials, confirming osimertinib's robust 1L utility in broader populations.
09 Sep 2025	Patterns of Care and Outcomes in Patients With Advanced Lung Cancer in a Hospital Palliative Care Unit: A Single-Center Retrospective Study	R. Leporati	• **Introduction:** End-of-life care data in advanced lung cancer are limited. This study examined real-world outcomes in a hospital-based palliative unit. • **Methodology**: Retrospective review of 144 stage IV thoracic cancer patients (2022–2024) at Modena University Hospital, assessing demographics, prior therapies, PaP, ESAS, and outcomes. • **Results:** Median age 75; 68% NSCLC, 15% SCLC. Fifty-five percent received no oncologic therapy in the prior 30 days. Median stay 14 days; 66% died in-unit. Dyspnea (50%) and pain (24%) were common. Palliative sedation was needed in 39%. • **Conclusions:** Late referrals limited impact; earlier integration improved symptom control and dignity.

Notable Presentations At IASLC 2025
Other Research and Studies (1/7)

Date	Title	Author	Summary
08 Sep 2025	Preliminary Results on Feasibility of Virtual Delivery of Exercise Therapy for Mitigation of Lung Cancer Decline	L. Curry	• **Introduction:** This study aims to assess the feasibility of a 12-week virtual exercise intervention and evaluate its efficacy in mitigating declines in physical and psychosocial function. • **Methodology:** This ongoing, single-arm study plans to recruit 4 cohorts of 12 patients each. Participants on systemic therapy for advanced lung cancer will engage in a twice-weekly, one-hour, supervised virtual exercise program. Feasibility measures include attendance (≥80%), adherence (≥80% intensity), and safety. Efficacy will be assessed using patient-reported outcomes and physical function. • **Results:** Preliminary data from cohort 1 show 80% recruitment, with 10 out of 12 participants completing the program (83% retention). Average attendance was 75%, with treatment-related symptoms (39%) and conflicting appointments (37%) as the main causes for missed sessions. Exercise adherence was 99%, with no safety events. • **Conclusions:** The virtual exercise program is mostly feasible, though cohort 1 did not meet the target attendance (80%) due to one participant's poor attendance. Excluding this participant, attendance reached 81%. This intervention can help address health equity gaps for older lung cancer patients in British Columbia by leveraging virtual healthcare.
08 Sep 2025	A Comparative Study of the Significance of GPT-Enabled Counseling and Management of Pulmonary Nodules	D. Yang	• **Introduction:** This study compares BAIMGPT's performance with general AI models in improving doctor-patient communication and diagnostic accuracy. • **Methodology:** The study has three phases: (1) Literature review on GPT in nodule management; (2) BAIMGPT development optimizing key metrics; (3) Multicenter evaluation using user ratings and expert reviews of response accuracy. The goal is to compare BAIMGPT's performance with general models, focusing on efficacy and user experience. • **Results:** In 109 patients, BAIMGPT outperformed DeepSeek GPT across key metrics. BAIMGPT had 92.7% friendliness and 89.0% safety perception, compared to 41.3% and 38.5% for DeepSeek GPT ($p<0.001$). BAIMGPT's voice interaction (90.8%) and visual interface (87.2%) were praised, while DeepSeek GPT lacked these features. BAIMGPT also surpassed the control in comprehension (88.1% vs 82.6%) and accuracy (85.3% vs 80.7%). Additionally, 84.4% of patients rated BAIMGPT as "urgently needed," compared to 52.3% for DeepSeek GPT. • **Conclusions:** BAIMGPT excels in emotional interaction, functionality, and accuracy, offering a new paradigm by combining specialized medical knowledge with digital human technology

Notable Presentations At IASLC 2025
Other Research and Studies (2/7)

Date	Title	Author	Summary
08 Sep 2025	First Assessment of IASLC Inclusive Practices and Challenges: Results From the Diversity, Equity, and Inclusion Survey	N. Florez	• **Introduction:** This study presents the first survey evaluating inclusive practices and challenges within IASLC. • **Methodology:** An anonymous online survey was administered via QualtricsXM and promoted through social media and WhatsApp™, available in multiple languages to both members and non-members. Statistical analyses were conducted using R 4.4.0 with Pearson's Chi-squared and Fisher's exact tests for subgroup comparisons. • **Results:** Of 1234 participants, 707 (57.3%) completed the survey. Most viewed IASLC as inclusive regarding race/ethnicity (51.5%) and gender (58.8%). Latin Americans reported more language non-inclusivity (43.3% vs 27.5%; p=0.011). Few reported discrimination, but East/Southeast Asians faced more language-related discrimination (13.3% vs 4.4%; p<0.001). Barriers to resources reported by 12.1%, especially by Latin Americans (23.1% vs 10.8%; p=0.004) and mid-career faculty (17.4% vs 10.0%; p=0.007). Suggestions for improvement included support, resources, and diversity. 78.8% supported embedding DEI principles in IASLC. • **Conclusions:** Survey respondents reported favorable views on IASLC inclusivity. Improving language inclusivity and addressing resource barriers could enhance the member experience.
09 Sep 2025	The Journey to a Lung Cancer Diagnosis: Reports From the LEAD Study	L. Kiel	• **Introduction:** This study evaluates how sex, age, and cancer stage affect the time from LC symptom presentation to diagnosis. • **Methodology:** Patients aged ≥18, diagnosed with LC stages I-IV within 6 months, were enrolled at Dana-Farber Cancer Institute and Massachusetts General Hospital (1/2024-5/2024). They completed a questionnaire on LC risk factors and diagnostic timeliness, and timepoints were abstracted from EMR. Wilcoxon tests compared results by age, sex, and stage. • **Results:** Of 112 patients, 63% were tobacco users, with 76% of non-users being female. Younger patients had shorter times to biopsy (3 vs 60 days; p=0.009), oncology visit (12 vs 58 days; p=0.007), and treatment (38 vs 98 days; p=0.005). Stage IV patients had quicker plasma biomarker testing (62 vs 155 days; p=0.035) and biopsy-to-treatment (26 vs 36 days; p=0.040). 12% of women (vs 0% men) reported symptoms attributed to anxiety (p=0.538). 33% of patients reported delays, with younger patients more likely to report delays (50% vs 30%; p=0.220). • **Conclusions:** Younger patients and stage IV LC patients experienced faster diagnostic timelines. Anxiety was more often misattributed to women

Notable Presentations At IASLC 2025
Other Research and Studies (3/7)

Date	Title	Author	Summary
09 Sep 2025	Effect of Smoking Cessation Duration on Lung Cancer Incidence: A Nationwide Retrospective Cohort Study in Korea	M.G. Choi	• **Introduction:** This study analyzes the relationship between smoking cessation duration and reduced lung cancer incidence using large-scale health data from South Korea. • **Methodology:** In this retrospective cohort study, we used data from the Korea National Health Insurance Corporation, sampling adults aged ≥50 who underwent health examinations from 2009-2013. Participants were categorized as never-smokers, former smokers, and current smokers. The quit date was estimated by the midpoint of the interval between the examination reporting quitting and the prior exam. Lung cancer incidence was compared across groups. • **Results:** 165,512 individuals (82,756 never-smokers, 41,378 former smokers, and 41,378 current smokers) were analysed. Lung cancer risk significantly decreased after two years of cessation (hazard ratio 0.760, p<0.001), but remained higher than never-smokers for up to 10 years. Among males, the trend was consistent, while no consistent patterns were observed in females. Light smokers (<20 pack-years) had lung cancer risk comparable to never-smokers after seven years of cessation, while heavy smokers (≥20 pack-years) took nine years. • **Conclusions:** This study underscores the significant reduction in lung cancer risk with smoking cessation, highlighting the substantial benefits of even short-term cessation, regardless of prior smoking history.
09 Sep 2025	Feasibility of Engaging Latino Individuals in a Lung Cancer Screening Study Through Mychart	A. Chavez Iniguez	• **Introduction:** This study evaluates the feasibility of engaging Latino individuals in a lung cancer screening study using MyChart. • **Methodology:** Using the electronic health record (EHR) at the University of Rochester Medical Center, individuals who (1) self-identified as Hispanic/Latino, (2) were aged 50-80, and (3) currently smoked were identified. Those with MyChart accounts were invited to participate in a lung cancer screening study tailored for Latinos. Eligible individuals were assessed and enrolled based on U.S. Preventive Services Task Force guidelines. Interest and enrollment rates were calculated. • **Results:** Of 1,745 identified individuals, 668 had MyChart accounts and were invited. Forty-six expressed interest (6.8%), and 33 were contacted. Fifteen were ineligible, primarily due to smoking histories of less than 20 pack-years. Nine eligible participants qualified, and seven enrolled (77.7% enrollment rate). • **Conclusions:** Engaging Latino individuals in a lung cancer screening study through MyChart is feasible, offering a promising approach to improving early detection in this population.

Notable Presentations At IASLC 2025
Other Research and Studies (4/7)

Date	Title	Author	Summary
09 Sep 2025	A Study of Testing Knowledge Regarding Lung Cancer Screening Among General Population and Caregivers	N. Mandal	• **Introduction:** This study compares awareness of lung cancer sources and screening between the general population and caregivers of lung cancer patients. • **Methodology:** Caregivers and the general population were interviewed in-person and online based on smoking history and work-related exposures. A questionnaire assessed demographics, knowledge, and attitudes towards lung cancer. • **Results:** Most general population respondents were employed males, and most caregivers were female homemakers. Over 65% of the general population smoked. More caregivers (70%) engaged in risk-reduction activities, compared to 35% of the general population. 95% of caregivers believed lung cancer is preventable, vs 30% of the general population. All caregivers knew about lung cancer screening methods, while over half of the general population did not. Many were unaware of risks like second-hand smoke and asbestos. Both groups were interested in awareness programs. • **Conclusions:** Caregivers are more knowledgeable about lung cancer sources and screening than the general population. Raising awareness, especially about early detection, is crucial, with caregivers playing a key role.
09 Sep 2025	Sociodemographic and Healthcare Factors Associated With Enrollment in a Clinical Trial Integrating Tobacco Cessation and Lung Cancer Screening	E.J. Flores	• **Introduction:** This study explores sociodemographic and healthcare factors associated with enrollment. • **Methodology:** This retrospective study used Screen ASSIST data from 2019-2023. Eligible participants were smokers scheduled for LCS. Recruitment occurred after LCS was ordered, during, and after the procedure. Sociodemographic and healthcare factors were extracted, and logistic regression identified factors linked to enrollment. • **Results:** Of 4,090 eligible participants, 642 (15.7%) enrolled. Higher enrollment was seen in females ($p=0.019$), non-Hispanic Blacks ($p=0.002$), college graduates ($p<0.001$), and those with no PCP visits ($p=0.005$). Logistic regression showed that age 70+ (aOR: 1.29), female gender (aOR: 1.26), non-Hispanic Black race (aOR: 1.87), college education (aOR: 1.47), and no PCP visits (aOR: 1.43) were associated with higher enrollment. • **Conclusions:** Factors linked to lower trial participation were associated with higher enrollment in this tobacco cessation trial within LCS, highlighting opportunities to improve diversity and address disparities.

Notable Presentations At IASLC 2025
Other Research and Studies (5/7)

Date	Title	Author	Summary
09 Sep 2025	A Real-World Study of Resectable NSCLC Following Neoadjuvant Immunotherapy: Should Postoperative Adjuvant Immunotherapy Be Recommended?	M. Li	• **Introduction:** This study assess the impact of postoperative adjuvant immunotherapy in resectable NSCLC pts who received neoadjuvant chemotherapy with immune checkpoint inhibitors, focusing on whether extending immune checkpoint inhibition improves survival. • **Methodology:** A retrospective cohort study was conducted on resectable NSCLC patients treated with neoadjuvant chemotherapy and ICIs at Zhongshan Hospital, Fudan University, from 2019 to 2024. Pathological responses (pCR, MPR, partial response) were assessed, and event-free survival (EFS) and overall survival (OS) were compared between those receiving postoperative adjuvant ICI therapy and those who did not. • **Results:** Of 186 patients, 106 received adjuvant ICI therapy. No significant differences in EFS or OS were seen in patients with pCR or MPR (EFS: p=0.282, OS: p=0.330). However, patients without pCR or MPR showed improved EFS with adjuvant ICI therapy (p=0.004), but no clear OS benefit (p=0.108). An AI-based decision tree model predicted that incomplete responses (non-pCR/MPR) benefit more from adjuvant ICI therapy, especially in younger patients. • **Conclusions:** Postoperative adjuvant ICI therapy improves EFS in patients without pCR or MPR but has uncertain effects on OS. Personalized treatment strategies are needed, with adjuvant ICI offering more benefit to patients with incomplete responses.
09 Sep 2025	Impact of Bone Metastases on the Efficacy of First-Line Immunotherapy in Advanced NSCLC: An Analysis From a Prospective Real-World Study	J. Zheng	• **Introduction:** Bone metastases in NSCLC may create an immunologically "cold" tumor microenvironment, potentially reducing the efficacy of immune checkpoint inhibitors. However, clinical evidence is limited, and prospective data with consistent treatment lines are needed. • **Methodology:** This prospective study enrolled advanced NSCLC patients who had not received prior systemic therapy. Patients received PD-1 inhibitor-based treatment every 21 days. • **Results:** 177 patients were analyzed (median age 66). Median PFS and OS were 10.4 months (95% CI: 7.121-13.746) and 38.4 months (95% CI: 31.710-45.023), respectively. Patients with bone metastases had shorter median PFS (9.8 vs. 13.7 months, P=0.048), but OS was not significantly different (26.6 vs. 39.5 months, P=0.065). Denosumab was linked to longer PFS in bone metastasis patients (P=0.031), while bisphosphonates showed no benefit (P=0.964). Prolonged denosumab use (≥5 doses) significantly improved OS (P<0.001). • **Conclusions:** Bone metastases may negatively affect survival in advanced NSCLC patients on first-line immunotherapy. Denosumab combined with immunotherapy may improve outcomes, with prolonged use further enhancing efficacy.

Notable Presentations At IASLC 2025
Other Research and Studies (6/7)

Date	Title	Author	Summary
09 Sep 2025	Trial of Chemotherapy in Patients With Relapsed Small Cell Lung Cancer Combined With Allopurinol and Mycophenolate (CLAMP)	B.J. Knapp	• **Introduction:** This phase I trial evaluates irinotecan combined with mycophenolate mofetil (MMF) and allopurinol in relapsed SCLC. • **Methodology:** Patients with ES-SCLC progressing on prior therapy received irinotecan (days 1 and 8) with daily MMF and allopurinol. Doses: DL1 (100 mg/m², 1 g TID, 300 mg/day), DL0 (80 mg/m², 0.5 g TID, 200 mg/day), DL-1 (60 mg/m², 0.5 g BID, 100 mg/day). Primary outcomes: dose-limiting toxicities (DLTs), safety, and efficacy. • **Results:** Seventeen patients were enrolled. Most were female (71%) and 76% had a platinum-free interval <180 days. All had treatment-related AEs, mainly anemia and diarrhea (70%). Grade 3+ AEs occurred in 70%. Five patients discontinued treatment. Two DLTs occurred at DL0 (G3 hypokalemia, diarrhea), leading to study discontinuation without identifying an MTD. One patient had a complete response, and 6 had partial responses (41% overall response). Disease control rate was 71%, with median progression-free survival of 2.7 months (95% CI 1.3–4.4). • **Conclusions:** Irinotecan, MMF, and allopurinol showed activity in relapsed ES-SCLC but caused significant toxicity, especially diarrhea. Future trials should test less toxic combinations.
09 Sep 2025	Virtual Personalized Exercise Program for Subjects With Lung Cancer: A Feasibility Study	M. Neumann	• **Introduction:** While exercise is widely recommended for diseases like heart disease and diabetes, it has lagged in cancer care. Exercise can improve outcomes, treatment tolerance, and delay progression in cancer survivors, yet programs remain underutilized, especially in lung cancer treatment. • **Methodology:** This feasibility study evaluates a virtual exercise platform for non-small cell lung cancer (NSCLC) patients undergoing surgery, radiation, or systemic treatment. Primary objective: assess feasibility with 50% program completion at 12 months. Secondary outcomes include satisfaction, pulmonary function, walk tests, and QOL (FACT-L). • **Results:** Of 21 patients, 10 remained active. Retention was 80% among those seen by PM&R. Compliance increased from 10% to 40% after a study navigator joined. Usability was rated fair, with SUS scores of 100%, 80%, and 75%. TAM scores were 4.39, 5.57, and 4.32, and NPS was 75 at month 3. • .**Conclusions:** The virtual exercise platform is feasible for lung cancer patients. Larger studies are needed to assess impacts on QOL and treatment outcomes. Clinicaltrials.gov ID: NCT06540495.

Notable Presentations At IASLC 2025
Other Research and Studies (7/7)

Date	Title	Author	Summary
09 Sep 2025	Pilot Study of Exercise Program and Monitoring by a Lung Cancer Patient Navigator During Chemoradiotherapy for Stage III Lung Cancer	P.L. Chia	• **Introduction:** This study evaluates a supervised exercise program with navigator support during chemoRT. • **Methodology:** Patients ≥21 with stage III NSCLC starting chemoRT at Tan Tock Seng Hospital (June 2023-August 2024) were eligible. The 8-week program included assessments by physiotherapists and rehabilitation physicians, with weekly care navigator check-ins. • **Results:** Of 28 patients, 5 (17.9%) enrolled. Reasons for exclusion included high dyspnoea and comorbidities. Two withdrew due to medical issues. The 6MWT improved, though not significantly. Patients experienced fatigue but continued exercise, reporting improved well-being. • **Conclusions:** Low participation in Singapore contrasts with studies in Caucasian populations. Barriers for Asian patients highlight challenges in rehab programs during chemoRT, informing future trial designs.
09 Sep 2025	Lived Experiences and Needs of People Living Long-Term With Metastatic Non-Small Cell Cancer: A Qualitative Study	R. Urquhart	• **Introduction:** Metastatic non-small-cell lung cancer (mNSCLC) has historically had a poor prognosis, but targeted therapies for ALK-translocations have improved outcomes. However, the ongoing care needs of patients on long-term targeted or immunotherapies remain understudied. • **Methodology:** Semi-structured interviews were conducted with mNSCLC patients on long-term targeted therapy or immunotherapy. Participants were recruited through community-based methods. Interviews explored physical, emotional, and practical needs, and views on support services. Data were analyzed using comparative analysis. • **Results:** Nine participants identified gaps in care, including delays in biomarker testing, lack of information, and access to second-line treatments. Physical issues included fatigue, cognitive problems, and pain. Emotional needs focused on anxiety, stigma, and uncertainty. Practical barriers included financial strain and insurance. Participants called for better communication, automated referrals, and multidisciplinary care. • **Conclusions:** Current survivorship services are inadequate for metastatic cancer patients. This study informs the development of tailored services for mNSCLC patients on targeted therapies and immunotherapies.

Key Industry Sponsored Sessions Information

IASLC 2025 Key Industry Sponsored Sessions Information (1/3)

Date	Sponsor	Title
06 Sep 2025	Johnson & Johnson	Advancing EGFR-mutant NSCLC Care
06 Sep 2025	Eli Lillly	Precision Starts Early: The Evolving Role of Biomarker Testing in Early-Stage NSCLC
06 Sep 2025	Daiichi Sankyo	Reshaping the Management of Metastatic NSCLC: Tackling HER2 Overexpression to Elevate Outcomes
06 Sep 2025	Daiichi Sankyo and MSD	Empowering Clinicians in SCLC Management: Key Insights on Diagnosis, Treatment, and Emerging Strategies
06 Sep 2025	Abbvie	What SEZ6 Says About Small Cell Lung Cancer (SCLC) and Neuroendocrine Neoplasms (NENs)
06 Sep 2025	Pfizer	Sustained Clinical Benefit in 1L ALK+ aNSCLC: How to Optimise Outcomes for Our Patients
06 Sep 2025	Bayer	Pioneering Precision: A Real-World Roadmap to Optimal Outcomes in NTRK Fusion-Positive and HER2-Mutant Advanced NSCLC

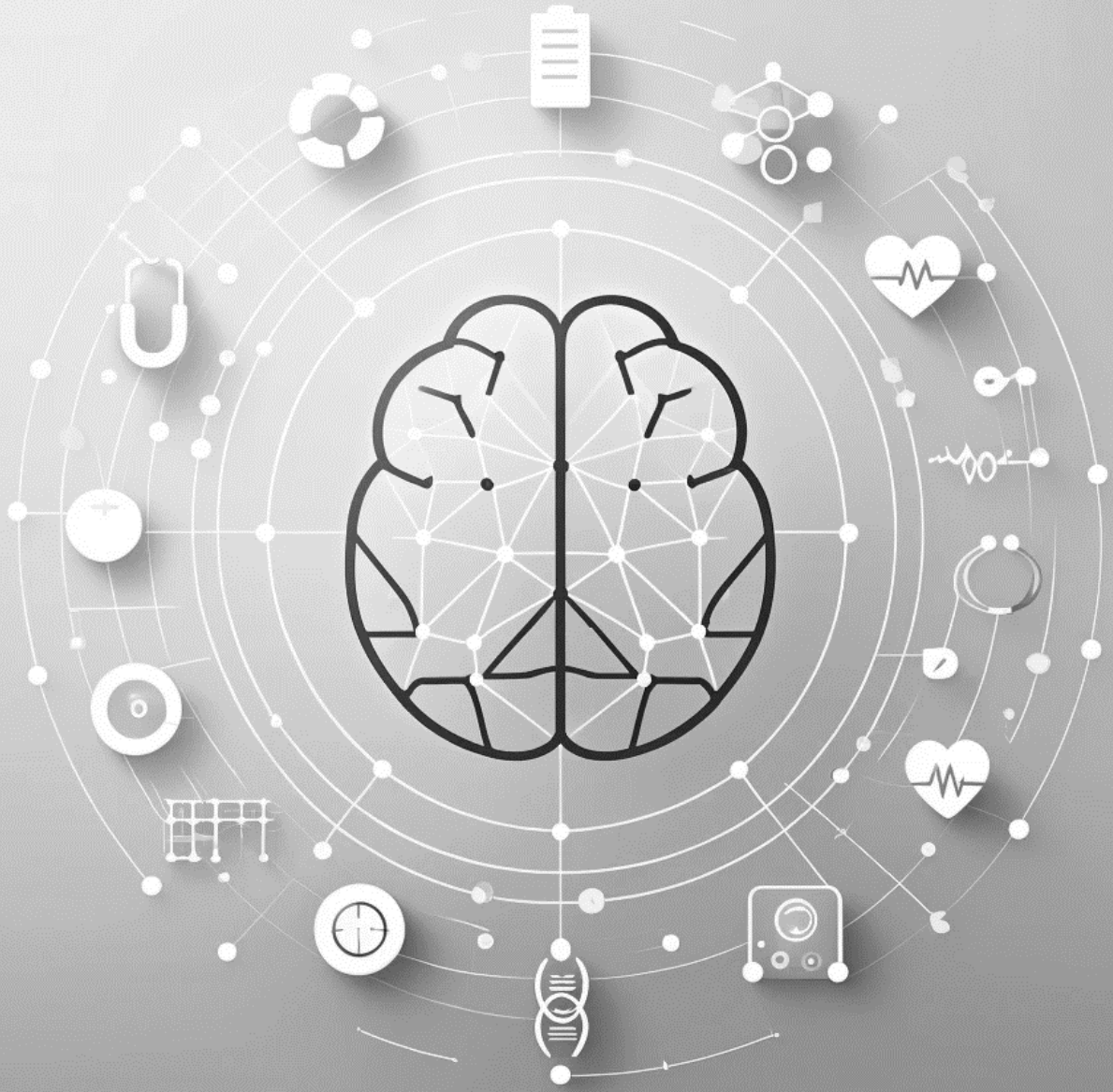
IASLC 2025 Key Industry Sponsored Sessions Information (2/2)

Date	Sponsor	Title
06 Sep 2025	Accord Healthcare	Recent Developments in the First-Line Treatment of Extensive-Stage Small Cell Lung Cancer
06 Sep 2025	Summit Therapeutics	Satellite CME Symposium by Physicians' Education Resource
07 Sep 2025	AstraZeneca	Maximising a Multidisciplinary Approach: Shaping the Future of Lung Cancer Care with Immunotherapy
07 Sep 2025	Nuvation Bio	Under the MicROScope: Focusing on ROS1+ NSCLC
07 Sep 2025	Regeneron	NSCLC Reimagined: Novel Treatment Strategies in Advanced NSCLC
07 Sep 2025	AstraZeneca	Tumor Board: Advances in Managing EGFR-Mutant NSCLC – Applying Evidence Across the Disease Continuum
07 Sep 2025	Natera	Signatera Ultrasensitive MRD Testing for Lung Cancer

IASLC 2025 Key Industry Sponsored Sessions Information (3/3)

Date	Sponsor	Title
08 Sep 2025	Daiichi Sankyo	Multidisciplinary Care for Patients with Brain Metastases in EGFRm NSCLC or SCLC
08 Sep 2025	Boehringer Ingelheim	Targeted Therapies, Personalized Care: Patient-Centered Advances for the Treatment of NSCLC and SCLC
08 Sep 2025	MSD	A Decade of Progress: Advances in Immunotherapy for NSCLC?
08 Sep 2025	AstraZeneca	Metastatic EGFRm NSCLC: Adapting to Patients, Grounded in Evidence

Noteworthy AI / ML presentations at IASLC 2025



Themes from key AI / ML presentations at IASLC 2025 (1/4)

- **AI/ML at IASLC 2025 will demonstrate clinical maturity, with multi-trial validation (e.g., 4-IN-THE-LUNG-RUN, APOLLO11, LANTERN1) and will show that AI improves early detection, segmentation accuracy, prognostic prediction, and screening efficiency, while consistently reducing radiologist workload by 70%+**
- Check out the key AI / ML themes at IASLC 2025 below:
- **AI vs. Radiologists in 4-IN-THE-LUNG-RUN Trial:**
  - AI analyzed 2,219 LDCT scans, reducing radiologist workload by 73.2%, with similar NPV (97.8% vs. 97.2%). Trial confirmed AI's safety as a first reader
- **Deep Learning for Sub-Cm Nodules (PanCan + ILST):**
  - In the Pan-Canadian Screening Study (N=6,944) validated on ILST, an AI-radiomics model achieved AUC 0.97, identifying nodules up to 24 months before clinical confirmation
- **TabPFN in Stage IA LUAD Subtyping:**
  - Transformer model TabPFN outperformed ML (AUC 0.721) and frozen section (43.1%), achieving 70–79% accuracy, supporting better surgery planning in Stage IA LUAD

Themes from key AI / ML presentations at IASLC 2025 (2/4)

- **Ground-Glass Opacity Malignancy Prediction:**
  - Deep learning achieved 100% sensitivity and 80% specificity vs. regression's 91%/67%, showing superior accuracy in GGO malignancy detection in a 72-patient proof-of-concept study
- **Breathomics with CNN for Early LC Detection:**
  - From 195 patients (114 LC, 81 controls), CNN achieved AUC >0.90, validating exhaled VOC analysis as a non-invasive, scalable diagnostic tool
- **Multi-Institutional Mediastinal Tumor Segmentation:**
  - On 711 CTs from 123 hospitals, a 3D U-Net achieved Dice scores of 0.86 (internal) and 0.82 (external), demonstrating robust generalization across rare thoracic tumors
- **AI in BioMILD LungRADS Screening:**
  - In 4,104 volunteers, AI matched radiologists (agreement 83.5%), with 91.2% sensitivity, reducing radiologist workload by 74.7%, supporting AI as first reader in screening
- **AI Workflow Recognition in Surgery:**
  - On 134 lung resection cases (cVATS/hVATS), an AI Swin Transformer achieved F1 scores of 0.78–0.84, confirming feasibility for intraoperative workflow tracking

Themes from key AI / ML presentations at IASLC 2025 (3/4)

- **LANTERN1 Postoperative Complications Model:**
  - In 170 NSCLC surgical patients, AI predicted complications with AUC of 0.82. Pre-op FEV1 emerged as the strongest predictor, validated in an external dataset
- **Meta-Analysis of AI Tumor Segmentation:**
  - Across 16 studies and 17,389 images, pooled Dice similarity confirmed high accuracy (effect size 1.25, CI 1.00–1.50). Supports AI use in early NSCLC surgical planning
- **Organ-Specific Survival in 4,332 NSCLC Patients:**
  - At MD Anderson, machine learning linked liver metastasis to worst outcomes (PFS 5.07m, OS 11.8m). ExtraTrees achieved AUC 0.935–0.995 for progression/mortality prediction
- **HE2PDL1 Histopathology Model:**
  - Deep learning predicted PD-L1 from H&E slides with F1 score 0.92. External validation AUCs were 0.75–0.67, correlating with immunotherapy survival outcomes
- **APOLLO11 Immunotherapy Prognostics:**
  - In 1,130 NSCLC patients, ML models predicted survival with AUC 0.72–0.80. ECOG, NLR, and lymphocyte count were key predictors of poor prognosis

Themes from key AI / ML presentations at IASLC 2025 (4/4)

- **nnU-Net for Tumor Segmentation:**
  - Automatic segmentation of GTVs in 3 datasets performed comparably to experts. Dice scores were superior to Primakov, with survival predictions showing no statistical differences
- **Pembro-Real 5Y Registry AI Insights:**
  - In 161 PD-L1 ≥50% NSCLC patients with poor PS, median OS was 5.4 months; 13% survived 5 years. AI identified TMB, KRAS, BRAF as key prognostic markers
- **ILUMINATE IPN Program (Memorial Cancer Institute):**
  - From 205,022 reports, AI flagged 6,685 individuals, detecting 127 cancers (1.9%) vs. 10 (0.4%) y LDCT. Demonstrated strong real-world screening advantage

Noteworthy AI / ML presentations at IASLC 2025

Notable Presentations At IASLC 2025
AI / ML (1/20)

Date	Title	Author	Summary
7 Sep 2025	Performance of AI Vs. Radiologists in the 4-IN-THE-LUNG-RUN Lung Cancer Screening Trial: Annual Follow-Up Results	M. Heuvelmans	• **Introduction**: Lung cancer screening (LCS) with LDCT reduces mortality in high-risk individuals. AI's potential as a first reader in LCS could reduce radiologists' workload. This study evaluates AI's performance as a first reader in the 4ITLR trial, comparing negative and positive misclassifications to experienced radiologists. • **Methodology**: 2,219 LDCT scans were assessed by AI and radiologists. Discrepancies were resolved by an expert panel. Negative misclassifications (NM) and positive misclassifications (PM) were evaluated based on volume-doubling time and nodule size. • **Results:** AI had 35 NMs (1.6%) and 492 PMs (22.2%) with an NPV of 97.8%. Radiologists had 59 NMs (2.7%) and 15 PMs (0.7%) with an NPV of 97.2%. • **Conclusions:** AI showed similar NPV with fewer NMs and could reduce radiologist workload by 73.2%.
7 Sep 2025	Diagnosis of Sub-Cm Lung Nodules With Deep Learning Segmentation and Radiomics-Based Machine Learning Classifiers	I. Janzen	• **Introduction**: Lung cancer is the leading cause of cancer deaths in Canada. Early detection via LDCT screening can reduce mortality. Developing CADx tools for detecting small, difficult-to-classify nodules is essential for cost-effective screening and early cancer treatment. • **Methodology**: Using a discovery dataset from the Pan Canadian Screening Study (N=6944), nodules were segmented with a self-attention UNet. Radiomic features were extracted and a logistic regression (LR) model was trained to classify nodules as malignant or benign. The model's generalizability was tested on an external cohort from the International Lung Screening Trial (ILST). • **Results:** The LR model achieved an AUC of 0.970 with high sensitivity (0.911) and specificity (0.951). It identified cancerous nodules that would have been missed by traditional methods. • **Conclusions:** The deep learning and machine learning-based model effectively identifies sub-cm cancerous nodules up to 24 months before clinical confirmation, showing promise for enhancing early detection in LDCT screening.

Notable Presentations At IASLC 2025
AI / ML (2/20)

Date	Title	Author	Summary
7 Sep 2025	TabPFN Empowered the Ternary Classification of Histological Subtypes in Stage IA LUADs Based on AI Analyzed Histogram Features	G. Pei	• **Introduction**: Differentiating preinvasive, minimally invasive, and invasive adenocarcinoma subtypes in stage IA LUAD is crucial for surgical decisions. Overlapping imaging features and interobserver variability complicate classification. This study develops and validates a transformer-based model, TabPFN, for ternary classification of LUAD subtypes, comparing it with traditional ML algorithms and frozen section analysis. • **Methodology**: The study used preoperative CT scans from three institutions (September 2014–October 2023). Histogram features were extracted and fed into TabPFN and five ML models for training and validation. Performance metrics included accuracy, macro-AUC, sensitivity, specificity, and Cohen's Kappa. • **Results:** TabPFN outperformed ML models (e.g., XGBoost: AUC 0.721), with accuracy of 70.7%-79.4% across test sets. It surpassed frozen section analysis (43.1%) in accuracy (p=0.003). Subgroup analysis showed superior performance for male patients and mixed ground-glass nodules. • **Conclusions:** TabPFN provides superior ternary classification of LUAD subtypes, with computational efficiency and clinical utility for personalized surgery strategies.
7 Sep 2025	Predicting Malignancy in Ground-Glass Opacity Using Multivariate Regression and Deep Learning Models: A Proof-Of-Concept	A. Agbarya	• **Introduction**: Ground-glass opacification (GGO) on CT scans presents a challenge in distinguishing malignant from benign lesions. This study compares the performance of a multivariate statistical regression model and a deep learning model in predicting malignancy using pixel features extracted from CT scans. • **Methodology**: The study included 72 patients with GGOs. Pixel features were extracted from manually segmented GGOs using MaZda software, which analyzed six textural features. These features were used in a multivariate regression model. Additionally, a deep learning model was applied using CT images. • **Results:** The multivariate model identified two significant variables, achieving 91% sensitivity and 67% specificity. The deep learning model performed better with 100% sensitivity and 80% specificity. • **Conclusions:** The deep learning model outperformed the regression model, showing superior sensitivity and specificity. Larger patient cohorts may further improve these results.

Notable Presentations At IASLC 2025
AI / ML (3/20)

Date	Title	Author	Summary
7 Sep 2025	Breathomics Meets Deep Learning: A Novel Approach for Early Detection of Lung Cancer	A. Catino	• **Introduction**: Lung cancer (LC) remains a leading cause of death globally, with diagnosis often occurring at advanced stages. Early detection is essential, and breathomics—analyzing volatile organic compounds (VOCs) in exhaled breath—has shown promise for non-invasive LC diagnosis. This study aims to use deep learning to detect and characterize the breath fingerprint of LC patients. • **Methodology**: 195 participants (114 LC patients, 81 healthy controls) provided breath samples, which were analyzed using Gas Chromatography/Mass Spectrometry (GC-MS). Data were preprocessed and converted into 2D images, which were then classified using Decision Tree, Random Forest, and Convolutional Neural Network (CNN) models. • **Results:** CNNs outperformed other methods, achieving a mean AUC and balanced accuracy over 0.90, based on 10-fold repeated 5-fold cross-validation. • **Conclusions:** The deep learning models demonstrated superior performance compared to traditional methods, indicating breathomics' potential for scalable, cost-effective LC diagnosis in clinical practice.
7 Sep 2025	A Clinically Applicable and Generalizable Deep Learning Model for Segmenting Anterior Mediastinal Tumors Across Multiple Institutions	H. Watanabe	• **Introduction**: Anterior mediastinal tumors, such as thymoma, are rare and challenging to diagnose. Accurate pre-treatment diagnosis is crucial for treatment and prognosis. While CT is the primary imaging method, interpretation requires significant expertise. Deep learning (DL) models show potential for improving diagnostic accuracy but face challenges due to limited datasets. • **Methodology**: 711 CT images from 123 hospitals were analyzed. A 3D U-Net-based segmentation model was trained on 485 images and validated on internal and external datasets. • **Results:** The model achieved a Dice score of 0.864 (internal) and 0.823 (external), with precision and recall of ~0.86. • **Conclusions:** The model demonstrated robust performance across institutions, addressing the data scarcity challenge in rare diseases.

Notable Presentations At IASLC 2025
AI / ML (4/20)

Date	Title	Author	Summary
7 Sep 2025	Potential for AI as First Reader in Lung Cancer Screening	G. Leuzzi	• **Introduction**: This study evaluates the agreement between human and AI readings for LDCT outcomes according to LungRADS, and tests AI's safety as a first reader in lung cancer screening (LCS). • **Methodology**: The study involved 4,104 volunteers from the BioMILD trial. Baseline LDCTs, initially read by a radiologist and classified per LungRADS, were analyzed by AI for LungRADS category assignment. The performance of human and AI readings was compared against a reference standard of lung cancer diagnosis at 2 years. • **Results:** Agreement between human and AI readings was 83.5% (Kw 0.47). AI sensitivity was 91.2%, specificity 75.7%, while human readings had sensitivity 89.7% and specificity 90.0%. • **Conclusions:** AI demonstrated moderate agreement with human readings and can safely be used as a first reader in LCS, potentially reducing workload by 74.7%.
7 Sep 2025	Effectiveness of a Generalizable AI Based Automated Workflow Recognition Model in Multiple Approaches to Lung Resection	S. Ohtani	• **Introduction**: AI is increasingly used in surgical video analysis, particularly for workflow recognition. This study evaluates the accuracy of an AI-based model for lung resection surgery, validating its performance across cVATS and hVATS approaches. • **Methodology**: The study included 134 patients who underwent lung resection in 2023. Surgical workflows were annotated into five phases. An AI model based on Swin Transformer was trained and validated on surgical videos from cVATS and hVATS approaches. • **Results:** The F1 scores for cVATS, hVATS, and the entire dataset were 0.78, 0.84, and 0.83, respectively. Phase-specific positive predictive values ranged from 0.77 to 0.93. • **Conclusions:** AI workflow recognition accuracy varied by surgical approach and case volume, with better performance for hVATS. Future research should focus on data augmentation and model adaptation for broader generalizability.

Notable Presentations At IASLC 2025
AI / ML (5/20)

Date	Title	Author	Summary
7 Sep 2025	LANTERN1: AI Model for Postoperative Complications Prediction for NSCLC Lung Resection: Prospective Multicentric Study and Extern Validation	F. Lococo	• **Introduction**: AI has the potential to combine omics and clinical data to predict post-operative complications after lung resection for NSCLC. The LANTERN project aims to develop an AI-based model to predict these complications. • **Methodology**: Data from 170 patients undergoing curative surgery for Stage I-III NSCLC were analyzed, including 59 clinical features and 52 spirometric variables. Prediction models were developed using feature selection algorithms and machine-learning models. The models were validated with a separate external dataset. • **Results:** The combination of Charlson comorbidity index and pre-op FEV1 showed the best predictive performance (AUC 0.82). Pre-op FEV1 alone was confirmed as the most relevant predictor in external validation. • **Conclusions:** Pre-op FEV1 is a strong predictor of post-operative complications, aiding in perioperative management and patient counseling.
7 Sep 2025	Applicability of Artificial Intelligence Based Tumor Segmentation in Planning for Sublobar Resection in Lung Cancer: A Meta-Analysis	P. DAS	• **Introduction**: Accurate tumor demarcation is crucial for successful sublobar resection in early-stage NSCLC. AI-based deep learning segmentation techniques are emerging as valuable tools for tumor delineation, potentially improving treatment planning. This meta-analysis evaluates the effectiveness of AI algorithms in pulmonary tumor segmentation. • **Methodology**: A meta-analysis of studies assessing AI-based segmentation of pulmonary tumors was conducted. Dice Similarity Coefficients (DSC) were used as the primary performance metric. A total of 16 studies, including 17,389 images, were included. Pooled DSC scores were calculated, with heterogeneity assessed using the I^2 statistic. • **Results:** The pooled effect size for AI segmentation performance was 1.25 (95% CI: 1.00-1.50), indicating strong overall accuracy. High heterogeneity (I^2 = 98%) was observed, but no significant publication bias was detected. • **Conclusions:** AI segmentation shows high accuracy in pulmonary tumor delineation, suggesting its potential for improving surgical precision in early-stage NSCLC. Further studies are needed to assess its direct impact on surgical outcomes and recovery.

Notable Presentations At IASLC 2025
AI / ML (6/20)

Date	Title	Author	Summary
7 Sep 2025	Organ-Specific Survival in Metastatic NSCLC Patients Treated With Chemo-Immunotherapy: A Machine Learning-Based Retrospective Analysis	K. Qin	• **Introduction**: This study explores organ-specific progression patterns and survival outcomes in metastatic NSCLC patients treated with chemo-immunotherapy, aiming to develop machine learning models to predict prognosis. • **Methodology**: Data from 4,332 stage IV NSCLC patients treated at MD Anderson Cancer Center were analyzed. Kaplan-Meier analysis assessed progression-free survival (PFS) and overall survival (OS) across progression sites. Machine learning models, including ExtraTrees and others, were trained to predict disease progression and mortality, with performance evaluated using various metrics. • **Results:** Liver progression was associated with the shortest PFS (5.07 months) and OS (11.80 months). The ExtraTrees model achieved the best performance (AUC 0.935 for progression, 0.995 for mortality). • **Conclusions:** Organ-specific progression impacts survival, with liver metastasis linked to worse outcomes. Machine learning models, particularly ExtraTrees, offer accurate predictions, aiding personalized treatment in advanced NSCLC.
7 Sep 2025	Deep Learning Histopathology Model for PD-L1 (TPS) and Immunotherapy Outcome Prediction in Non-Small Cell Lung Cancer	M. Tafavvoghi	• **Introduction**: PD-L1 expression is a key biomarker for immunotherapy in advanced lung cancer. This study develops an AI-based model, HE2PDL1, for predicting PD-L1 status from H&E images and evaluating its association with ICI outcomes. • **Methodology**: The model uses three stages: tumor detection, feature extraction with Conch_v1, and PD-L1 classification with a transformer-based model. It was trained on NSCLC patients and validated in external advanced-stage NSCLC cohorts treated with ICI. • **Results:** HE2PDL1 achieved a macro F1 score of 0.92 for tumor classification. External validation yielded AUCs of 0.75 and 0.67 for PD-L1 prediction. The model correlated with improved progression-free survival in ICI-treated patients. • **Conclusions:** HE2PDL1 provides a rapid, cost-effective alternative to PD-L1 IHC testing, supporting treatment decisions in routine diagnostics.

Notable Presentations At IASLC 2025
AI / ML (7/20)

Date	Title	Author	Summary
7 Sep 2025	Cost-Effective Machine Learning for Predicting Survival in NSCLC Patients on Immunotherapy: Insights From the APOLLO11 Study	V. Miskovic	• **Introduction**: Predicting immunotherapy efficacy in NSCLC remains challenging. Reliable prognostic tools are essential for personalized care, especially as immunotherapy offers improved quality of life over chemotherapy. Recent advancements in machine learning (ML) using real-world data show promise in predicting IO outcomes. • **Methodology**: Data from 1,130 stage IIIB-IV NSCLC patients in the APOLLO11 study were analyzed using ML-based survival analysis and classification models to predict overall survival (OS) and identify poor prognosis cases. The models were trained, tested, and validated across multiple centers. • **Results:** The best classification model achieved an AUC of 0.72 (test) and 0.80 (external validation). Key predictors of poor prognosis included ECOG status, neutrophil-to-lymphocyte ratio, and lymphocyte count. • **Conclusions:** ML models, leveraging clinical and laboratory data, offer valuable predictive tools for immunotherapy decision-making, showing high generalizability and practical application in real-world settings.
7 Sep 2025	Deep Learning-Based Lung Tumor Segmentation for Survival Prediction in NSCLC Patients	B. Guirges	• **Introduction**: Predicting treatment outcomes in NSCLC remains a challenge. AI-based models, particularly for accurate gross tumor volume (GTV) segmentation, can enhance survival predictions. This study evaluates the performance of nnU-Net for automatic GTV segmentation using baseline CT scans, comparing it to expert-provided segmentation. • **Methodology**: Three NSCLC datasets with expert-delineated GTVs were used. nnU-Net and Primakov methods were assessed for automatic segmentation, with survival analysis models trained on radiomic features extracted from both segmentation methods. Performance was evaluated using Cox regression and concordance index (C-index). • **Results:** nnU-Net outperformed Primakov in Dice score, with no statistically significant performance differences in survival models ($p > 0.05$). • **Conclusions:** Automatic segmentation methods perform comparably to expert-driven methods in survival models, offering potential for reduced human effort and improved data-driven analysis, though further validation is needed.

Notable Presentations At IASLC 2025
AI / ML (8/20)

Date	Title	Author	Summary
7 Sep 2025	Long-Term Outcomes From Pembrolizumab in Patients With Advanced PD-L1 =50% NSCLC and Poor PS: A Transformer-Based AI Approach	A. Cortellini	• **Introduction**: The use of first-line single-agent immunotherapy in advanced NSCLC patients with ECOG PS ≥2 remains controversial, as this population has been excluded from pivotal trials. Real-world evidence suggests some may benefit long-term despite poor median survival. • **Methodology**: Data from the Pembro-Real 5Y registry, with over 5 years of follow-up, were analyzed for patients with advanced NSCLC, PD-L1 TPS ≥50%, treated with pembrolizumab. Elastic Net regression and a transformer-based AI model (NAIM) were used to identify prognostic factors for overall survival (OS) and 5-year survival rates. • **Results:** Of 161 patients, the median OS was 5.4 months, and 5-year survival was 13%. TMB, KRAS, and BRAF mutations were identified as significant, but NAIM struggled with overfitting. • **Conclusions:** Some patients with ECOG PS ≥2 may achieve long-term survival with pembrolizumab. However, predicting long-term benefit remains challenging, and future models should refine hybrid strategies and include prospective validation.
7 Sep 2025	Incidental Pulmonary Nodule Programs (IPN) Working Together With LDCT Scans and Artificial Intelligence (AI) Increase Lung Cancer Detection	L.E. Raez	• **Introduction**: Low-dose CT (LDCT) is standard for lung cancer screening (LCS), but barriers like eligibility criteria and low screening rates hinder its effectiveness. Incidental Pulmonary Nodule (IPN) programs, utilizing AI-driven tools, can identify, classify, and manage pulmonary nodules, potentially improving detection rates. • **Methodology**: An IPN program was developed at Memorial Cancer Institute in Florida, using the ILUMINATE AI tool integrated with the electronic medical records (EMR) system to detect lung nodules. The AI reviewed CT scans from various body parts to identify high, intermediate, or low-risk nodules. Results were compared with the LDCT program over 20 months. • **Results:** The IPN program reviewed 205,022 radiology reports and identified 6,685 individuals for follow-up, diagnosing 127 lung cancers (1.9%), compared to 10 diagnoses (0.4%) in the LDCT group. • **Conclusions:** The IPN program detected significantly more lung cancers than the LDCT program, demonstrating the potential of AI in addressing lung cancer disparities and improving detection.

Notable Presentations At IASLC 2025
AI / ML (9/20)

Date	Title	Author	Summary
7 Sep 2025	Development of an AI Image Analysis System for Malignancy Classification in Rapid On-Site Cytologic Evaluation of Lung Cancer	T. Sakai	• **Introduction**: Rapid on-site cytologic evaluation (ROSE) during EBUS-TBNA helps reduce the need for repeated procedures and complications but is limited by staff availability for classifying cells. This study aims to develop an AI-based system to classify cells as malignant or benign during ROSE. • **Methodology**: Patients with suspected lymph node metastasis from lung cancer underwent EBUS-TBNA, and cytotechnologists classified cells into benign or malignant types. A deep learning AI system was developed and evaluated using 8,184 cells from 108 patients, divided into training, validation, and test sets. • **Results:** The AI achieved a sensitivity of 0.73, specificity of 0.97, and a positive predictive value of 0.99 for diagnosing malignancy. • **Conclusions:** The AI system demonstrated high specificity in classifying cells, enhancing diagnostic efficiency during ROSE and supporting faster decision-making in lung cancer diagnosis.
7 Sep 2025	Enhancing Spread Through Air Spaces Diagnosis Using AI Diagnostician: A Multi-Center Study	H. Wu	• **Introduction**: Spread Through Air Spaces (STAS) is crucial for assessing lung cancer prognosis and guiding treatment. However, accurate diagnosis is challenging due to diverse STAS forms, limited pathologist training, and a global shortage of pathologists. • **Methodology**: The largest STAS dataset was created from seven medical centers, and an AI solution, AI Diagnostician for STAS (ADS), was developed to address these challenges. • **Results:** ADS, utilizing 210 million pathological tiles from 1,586 WSIs, outperformed conventional methods, improving AUC by 13.96% to 21.51%. It enhanced diagnosis sensitivity for junior pathologists by 10.44% and reduced review time by 50.66%. • **Conclusions:** ADS improves diagnostic accuracy and efficiency, promising better lung cancer diagnosis and treatment, thus improving patient outcomes.

Notable Presentations At IASLC 2025
AI / ML (10/20)

Date	Title	Author	Summary
8 Sep 2025	Artificial Intelligence-Led Characterisation of Lethal Morphologies in Lung Adenocarcinoma	K. Rakovic	• **Introduction**: Histopathological grading in lung adenocarcinoma (LUAD) is essential for prognosis but overlooks critical tumor microenvironment information. Self-supervised AI offers the potential to identify novel morphological markers without predefined hypotheses or human annotation. • **Methodology**: We applied a self-supervised learning pipeline to 4,427 WSIs from 1,007 LUAD patients. The pipeline discovered morphological clusters linked to clinical outcomes. Clusters were analyzed for regional molecular signatures, adding biological insights. • **Results:** We identified 71 clusters, some of which recapitulated known grading patterns and highlighted new epithelial and stromal features. A Cox regression model using supercluster frequency achieved c-indices of 0.6-0.65 internally and 0.61-0.62 externally. Immune-cold discohesive patterns were linked to poor prognosis. • **Conclusions:** AI-driven analysis uncovered new histopathological features in LUAD, offering refined prognostic tools that could enhance current grading standards.
8 Sep 2025	Development of a Proteomics-Based Machine Learning Model for Diagnosing and Predicting Lung Cancer: Insights From the UK Biobank	X. Chen	• **Introduction**: Lung cancer is the leading cause of morbidity and mortality in China. Early detection is key to improving prognosis, and proteomics can offer molecular insights and identify novel biomarkers. This study aims to develop a proteomics-based machine learning model for diagnosing lung cancer. • **Methodology**: Plasma proteomic analyses were conducted on data from the UK Biobank, including 52,580 healthy individuals and 431 lung cancer patients. Ten differentially expressed proteins were selected, and five machine learning models were built to predict lung cancer. SHAP was used to interpret model predictions. • **Results:** Significant proteomic differences were observed. The random forest model achieved an AUC of 0.771. SHAP analysis identified CCN3, NUDT10, and APOA1 as key proteins. • **Conclusions:** This model demonstrates the potential of proteomics-based machine learning for lung cancer diagnosis and provides a foundation for discovering diagnostic biomarkers and therapeutic targets

Notable Presentations At IASLC 2025
AI / ML (11/20)

Date	Title	Author	Summary
8 Sep 2025	Deep Learning-Based Prediction of Immunotherapy Efficacy in Non-Small Cell Lung Cancer: Automated Tumor and Muscle Evaluation	T. Miyawaki	• **Introduction**: AI integration of imaging and clinical data is promising for predicting ICI efficacy in advanced NSCLC. This study develops a deep learning model combining tumor radiomics and muscle volume to predict treatment outcomes. • **Methodology**: Patients receiving first-line ICI ± platinum-based chemotherapy were included. An ensemble model integrated clinical data with deep learning for tumor segmentation and muscle volume extraction from CT and MRI to predict 12-month overall survival (OS), progression-free survival (PFS), and treatment response. • **Results:** The model achieved AUCs of 0.77 for OS and 0.66 for PFS. High-risk groups had shorter OS (20.3 vs. 30.7 months, $p < 0.05$) and shorter PFS (7.2 vs. 8.9 months, $p = 0.06$). • **Conclusions:** The model effectively predicts survival outcomes, aiding personalized treatment in advanced NSCLC.
8 Sep 2025	Deep Learning-Based 18F-FDG PET/CT Radiomics Model for Predicting Pathological Response to Chemoimmunotherapy in NSCLC	a. li	• **Introduction**: Immune checkpoint inhibitors (ICIs) like PD-1/PD-L1 have advanced lung cancer treatment, but current biomarkers for predicting ICI efficacy are insufficient. This study explores the predictive value of radiomics-based biomarkers in NSCLC patients undergoing chemoimmunotherapy. • **Methodology**: 132 NSCLC patients treated with chemoimmunotherapy had 18F-FDG PET/CT images analyzed. 1,834 radiomic features from CT and 179 from PET were extracted, integrating clinical data, PD-L1, TMB, metabolic characteristics, and blood biomarkers. A Mask-MLP model was developed to predict pathological complete response (PCR) • **Results:** The model achieved an AUC of 0.72 in the training cohort and 0.86 in the external validation cohort, with sensitivity of 92.86% and specificity of 82.35%. • **Conclusions:** The multimodal deep learning model accurately predicts treatment responses, enabling pre-therapeutic identification of potential responders.

Notable Presentations At IASLC 2025
AI / ML (12/20)

Date	Title	Author	Summary
8 Sep 2025	Current Patient, Caregiver and Provider Attitudes Toward Use of AI in Lung Cancer Patient Navigation	C.A. Granville	• **Introduction**: Lung cancer care requires personalized strategies, but fragmented resources hinder patient access. AI-based approaches using machine learning and natural language processing can enhance patient education and navigation. This study surveys attitudes toward AI-powered navigation tools for lung cancer patients. • **Methodology**: A cross-sectional survey was conducted from January 27 to February 7, 2025, targeting healthcare professionals (HCPs) and patients/caregivers involved in lung cancer care. The survey assessed feasibility, acceptability, and AI integration preferences, informed by the Consolidated Framework for Implementation Research (CFIR). • **Results:** Of 98 responses, 95% of HCPs believed AI could improve efficiency. 67% of patients/caregivers relied on online resources, with 62% open to AI-driven support. • **Conclusions:** AI in lung cancer care shows promise, but addressing concerns about mistrust and usability is essential for broader adoption.
8 Sep 2025	Machine Learning Assessment of Pathologic Response in Lung Resections After Neoadjuvant Therapy - IASLC MPR Project	S. Dacic	• **Introduction**: This study aimed to develop machine learning algorithms to quantify tumor bed (TB) area and residual viable tumor (VT) in surgically resected lung specimens after neoadjuvant therapy and compare the results to pathologists' assessments from the IASLC reproducibility study. • **Methodology**: 72 NSCLC patients from five clinical trials were included. Pathologists' manual annotations of TB and VT areas were used to train convolutional neural network (CNN) models. Digital pathologic response (PR) was computed using these models, and correlations with pathologists' assessments were evaluated. • **Results:** Strong correlations were found between pathologist and machine learning approaches (APR vs. Digital PR: 0.97, APR vs. CHA: 0.97). Agreement for major pathologic response (MPR) was high, with a kappa statistic of 0.82. • **Conclusions:** Machine learning models showed high concordance with expert pathologists, demonstrating their potential for standardized PR evaluation in lung cancer clinical trials.

Notable Presentations At IASLC 2025
AI / ML (13/20)

Date	Title	Author	Summary
9 Sep 2025	Exhaled Breath Analysis Using Infrared Spectroscopy Combined With Machine Learning Algorithms for Lung Cancer Diagnosis	K.S. Emri	• **Introduction**: Lung cancer (LC) is the leading cause of cancer-related mortality, with early diagnosis being critical. This study explores the potential of Fourier transform infrared (FTIR) spectroscopy combined with machine learning algorithms for early LC detection through breath analysis. • **Methodology**: Breath samples from 64 LC patients and 47 healthy controls were analyzed using FTIR spectroscopy. The spectra were classified using unsupervised multivariate analysis and machine learning models (PNN, SVM, LDA). • **Results:** Distinct spectral bands were identified, particularly in the 1300-800 cm-1 region. SVM and PNN achieved over 70% accuracy, while LDA achieved 83.8% accuracy in the 885-870 cm-1 region. • **Conclusions:** FTIR spectroscopy with machine learning shows promise as a non-invasive method for LC diagnosis through breath analysis, offering a potential decision support tool for early detection.
9 Sep 2025	Chest X-Ray Analysis With Artificial Intelligence Software Aids in the Early Diagnosis of Lung Cancer- a Case Series	D. Koksal	• **Introduction**: Lung cancer is the leading cause of cancer-related deaths globally. While LDCT screening is effective, its adoption is limited. Chest X-ray, a common imaging tool, often misses pulmonary nodules, leading to missed diagnoses. AI-based tools, such as qXR, may improve nodule detection but the real-world impact on outcomes remains underreported. • **Methodology**: qXR, an AI-based deep learning tool, was used on all chest X-rays in our center from February to November 2024. High-risk nodules flagged by qXR were reviewed by radiologists and chest physicians, followed by thoracic CT if necessary. • **Results:** AI flagged suspicious nodules in three patients (for non-respiratory conditions), leading to early-stage lung cancer diagnosis confirmed by imaging and biopsy. All patients underwent successful curative surgery. • **Conclusions:** AI-powered chest X-ray analysis can aid in early lung cancer detection, especially in settings with limited radiologist availability, offering a screening opportunity regardless of patient history.

Notable Presentations At IASLC 2025
AI / ML (14/20)

Date	Title	Author	Summary
9 Sep 2025	Survival Determinants and Socio-Demographic Disparities in Early Onset Lung Cancer in Young Adults: Insights From AI Modeling	M. Bou Zerdan	• **Introduction**: Early onset NSCLC, affecting 5-10% of patients, is increasingly common. This study uses machine learning to identify survival determinants for young adults diagnosed with NSCLC. • **Methodology**: Data from the SEER database (2010-2021) for patients aged 18-50 were analyzed. Kaplan-Meier curves and SHAP values were used to identify survival factors. A random survival model and C-index were also applied. • **Results:** Among 18,595 patients, median OS was 16 months. Factors such as age, gender, income, stage, and time-to-treatment influenced survival. Patients who started treatment within 2 weeks of diagnosis had better survival, especially in stages I and II. • **Conclusions:** Machine learning models provide comprehensive insights, highlighting stage, income, and treatment timing as key survival factors in early onset NSCLC. SHAP modeling identified critical survival predictors.
9 Sep 2025	Deep Learning-Based CT Analysis Enhances Lung Cancer Risk Prediction in Never Smoking Women	A.P. Chidi	• **Introduction**: Lung cancer incidence is rising among never-smoking women, but risk assessment tools for this population are limited. Sybil, a deep learning model designed for smokers, has shown potential in lung cancer risk prediction but lacks data on its performance in never-smokers. • **Methodology**: A retrospective analysis was conducted on 216 never-smoking women treated for lung adenocarcinoma. Lung cancer risk was assessed using the PLCOALL2014 model and Sybil, with data on exposure to risk factors like asbestos, family history, and secondhand smoke collected. • **Results:** Sybil predicted higher lung cancer risks than the PLCOALL2014 model, with one-year risk at 3.9% and six-year risk at 16.5%. Sybil's predictions were significantly higher in never-smokers compared to the PLCOALL2014 model. • **Conclusions:** Sybil effectively identifies higher lung cancer risk in never-smokers, offering a promising tool for personalized screening. Further work is needed to refine risk models and develop scalable screening protocols.

Notable Presentations At IASLC 2025
AI / ML (15/20)

Date	Title	Author	Summary
9 Sep 2025	Deep Learning Based Multiplex Imaging Platform for High Throughput ADC Targets Expression Quantification and Biomarker Discovery in NSCLC	K. Bloom	• **Introduction**: Recent cancer therapies like immunotherapy and ADCs require better patient stratification. Current methods fail to capture intra-tumor heterogeneity. This study uses multiplex immunofluorescence (mIF) and AI-driven analysis to evaluate drug targets in NSCLC. • **Methodology**: 87 tumor microarray cores from NSCLC patients were stained with a 23-marker mIF panel. Deep learning quantified protein expression, classified cell types, and predicted intensity thresholds for target proteins. • **Results:** The model achieved near 100% accuracy for CD56 and EGFR, and 80-90% for MSLN and HER2. CEACAM5 had lower accuracy due to background staining. Single-cell classification showed over 90% accuracy for most markers. • **Conclusions:** This AI-based mIF platform enhances patient stratification, enabling better treatment eligibility and improving ADC target screening.
9 Sep 2025	Predicting Osimertinib-Induced Pneumonitis in EGFR-Mutated NSCLC Using Multi-Modal Machine Learning Model	K. Nibuya	• **Introduction**: Osimertinib improves survival in EGFR-mutated NSCLC, but drug-induced interstitial lung disease (DILD) is a significant concern, especially in Asian patients. This study develops a machine learning model integrating clinical and CT imaging features to predict DILD risk. • **Methodology**: We analyzed EGFR-mutated NSCLC patients treated with osimertinib, using clinical and imaging features extracted from CT scans with a 3D ResNet. Models like Random Forest, SVM, and XGBoost were trained and validated for DILD prediction, with AUC-ROC as the performance metric. • **Results:** Random Forest achieved the highest AUC of 0.865. The optimal risk threshold (0.3) stratified patients, showing a higher pneumonitis incidence in the high-risk group (p=0.0075). • **Conclusions:** The Random Forest model accurately predicts pneumonitis risk, with further multicenter validation required.

Notable Presentations At IASLC 2025
AI / ML (16/20)

Date	Title	Author	Summary
9 Sep 2025	Lab Data-Based Prediction for Clinical Efficacy of Immunochemotherapy in ES-SCLC Using Statistical and Machine Learning Models	S. Hara	• **Introduction**: Immunochemotherapy is the standard treatment for extensive-stage small cell lung cancer (ES-SCLC), but existing biomarkers like PD-L1 expression and tumor mutational burden fail to predict clinical efficacy. This study aims to develop a machine learning model to predict immunochemotherapy efficacy using lab data. • **Methodology**: The study analyzed data from 213 ES-SCLC patients, classifying those with prolonged progression-free survival (PFS ≥5 months) and overall survival (OS ≥12 months). A non-linear logistic regression model using lab data (NLR, LDH, albumin, CRP) was developed to predict prolonged PFS and OS. • **Results:** The model showed significant PFS (5.7 vs 4.3 months, HR 0.53) and OS (24.9 vs 10.3 months, HR 0.45) benefits in both test and validation sets. • **Conclusions:** The lab data-based prediction model effectively identifies ES-SCLC patients likely to benefit from immunochemotherapy, supporting clinical decision-making.
9 Sep 2025	High Throughput Drug Screening for Small Cell Lung Cancer Based on Machine Learning and Organoid Platforms	X. Feng	• **Introduction**: Small cell lung cancer (SCLC) presents significant treatment challenges. This study combines machine learning (ML) models and patient-derived organoids (PDOs) to identify novel therapeutic agents and targets for SCLC. • **Methodology**: Drug response predictions were made using ML models trained on databases like CTRP v2 and GDSC v1&v2. A total of 270 compounds, including clinical trial drugs and compounds from cancer stem cell and anti-tumor metabolism libraries, were screened on SCLC-LCOs. Drugs inhibiting organoid viability by >30% were further tested. • **Results:** Acriflavine showed potent inhibitory effects on both sensitive and resistant organoids. RNA-seq revealed upregulation of stress-related genes (ATF3, EIF2AK4), confirming the activation of the EIF2AK4-mediated stress response pathway. • **Conclusions:** Acriflavine activates endoplasmic reticulum stress and apoptosis in SCLC, showing promise for therapy. The ML-PDOs platform identifies agents and pathways critical for SCLC treatment.

Notable Presentations At IASLC 2025
AI / ML (17/20)

Date	Title	Author	Summary
9 Sep 2025	Morphological Implication of Invasive Lung Adenocarcinoma - Analysis Employing AI Method Based on Noguchi's Classification-	H. Kawaii	• **Introduction**: In lung adenocarcinoma (LUAD), invasion size correlates with prognosis, but interobserver variability in diagnosing invasion areas remains a challenge. This study develops an AI tool to reduce variability in diagnosing LUAD invasion and improve prognostic accuracy. • **Methodology**: Two LUAD cohorts were collected. Pathologists diagnosed tumor invasion areas, distinguishing non-lepidic tumor cells and fibrosis with alveolar collapse. AI was trained on annotated histological slides using ResNet50 models to analyze the heterogeneous invasion areas and assess prognostic value. • **Results:** AI achieved 86.2% accuracy for non-lepidic tumor cells and 92.2% for fibrosis areas. High non-lepidic tumor cell ratios predicted poor 5-year disease-free survival in pT1 cases. • **Conclusions:** AI analysis of histological slides effectively distinguishes invasion areas and identifies prognostic factors, offering a tool for consistent and accurate LUAD prognosis.
9 Sep 2025	A Causal Machine Learning Approach for the Prediction of Immune-Related Adverse Events in Lung Cancer Patients Receiving Immunotherapy	F. Reid	• **Introduction**: Immune-related adverse events (irAEs) from immunotherapy are challenging to predict. Clinical trials often exclude real-world patient factors, limiting generalizability. This study uses machine learning to identify causal factors for irAEs in lung cancer patients receiving immunotherapy. • **Methodology**: We applied causal discovery methods to a retrospective dataset, analyzing variables like treatment history, demographics, and comorbidities, to identify causal relationships with irAEs. • **Results:** The model found combination chemotherapy and patient gender as causal factors for irAEs. Secondary effects on biomarkers like hemoglobin and glucose were also identified. • **Conclusions:** This causal discovery approach provides valuable insights into irAE risks, though further analysis with a larger dataset is needed for more robust conclusions.

Notable Presentations At IASLC 2025
AI / ML (18/20)

Date	Title	Author	Summary
9 Sep 2025	Using Artificial Intelligence to Leverage Phenotypic, Genomic and Proteomic Correlations in Lung Carcinoma Patients With MET Alterations	S. Hernandez	• **Introduction**: Oncogenic MET activation in NSCLC can occur through various mechanisms, with MET exon 14 skipping mutations (M14M) and high-level MET copy number gain (MCNG) being established biomarkers. The predictive role of MET overexpression via IHC remains unclear. This study explores AI's role in enhancing MET IHC's utility as a predictive biomarker. • **Methodology**: We analyzed 2,170 NSCLC patients with M14M and MCNG using NGS and automated IHC scanning. MET IHC was also evaluated by three pathologists. AI algorithms were employed to confirm high tumor content in MCNG cases. • **Results:** AI scoring showed higher agreement with MET alterations, with 66.7% of M14M cases and 45.2% of MCNG cases showing 3+ scores. • **Conclusions:** AI-enhanced MET IHC scoring improves identification of MET alterations, offering potential for refining predictive biomarker use in NSCLC.
9 Sep 2025	Lung Cancer: Artificial Intelligence, Biometrics and Modeling of Alive Supersystems for Best Management	O. Kshivets	• **Introduction**: Lung cancer prognosis and survival are complex, requiring advanced analysis methods. This study explores how AI, neural networks, and multiple modeling techniques can predict the 5-year survival (5YS) of patients with non-small cell lung cancer (NSCLC) after radical surgery. • **Methodology**: Data from 786 NSCLC patients were analyzed using regression modeling, neural networks, and Monte Carlo simulations to identify survival predictors, including clinical features, blood parameters, and treatment types. • **Results:** 5YS was 73.4%, with significant survival differences based on surgery type and adjuvant therapy (AT). Neural networks predicted 5YS with 100% accuracy, identifying key factors like early-invasive cancer and N0-N12 stage. • **Conclusions:** AI-based models effectively predict 5YS in NSCLC patients, emphasizing early detection, radical surgery, and tailored adjuvant therapy for better survival outcomes.

Notable Presentations At IASLC 2025
AI / ML (19/20)

Date	Title	Author	Summary
9 Sep 2025	Machine Learning Prediction of Overall Survival in Stage III Unresectable NSCLC: Data Analysis From a Single Center Prospective Cohort	E. Ippolito	• **Introduction**: Concurrent chemo-radiotherapy (cCRT) followed by Durvalumab immunotherapy (IT) is the standard treatment for stage III unresectable NSCLC. Radiotherapy can induce lymphopenia and affect immune response. This study evaluates treatment outcomes and uses a random forest (RF) model to predict overall survival (OS), considering the negative immunologic impact of radiotherapy. • **Methodology**: 45 stage III NSCLC patients treated with cCRT followed by Durvalumab were analyzed. The RF model was used to predict OS based on treatment plan data. Patients were divided into training and validation groups. • **Results:** Median OS was 53.5 months. The RF model achieved an AUC of 0.8667, with predictors like mean heart dose (MHD) and dose to mediastinal nodal stations influencing survival. • **Conclusions:** cCRT followed by Durvalumab shows promising results. The RF model effectively predicts OS, emphasizing the role of radiotherapy planning in treatment efficacy.
9 Sep 2025	Dual Target Drug Discovery for EGFR and PIK3CA in Lung Adenocarcinoma Using Machine Learning and Molecular Simulation Techniques	S. Lu	• **Introduction**: Multi-target drug development is crucial for complex diseases like lung adenocarcinoma. This study identifies potential dual-target inhibitors for EGFR and PIK3CA, both key drivers of tumor growth and resistance to EGFR therapies. • **Methodology**: IC50 values for EGFR and PIK3CA inhibitors were collected from BindingDB and converted to PIC50 values. Molecular descriptors (ECFPs) were computed, and machine learning models (SVM, decision tree, random forest, etc.) were trained to predict activity. The best model, SVM, was used to screen 479 inhibitors from the Coconut database. • **Results:** Molecular docking and dynamics simulations identified two natural compounds, CNP0456830 and CNP0467494, as promising dual-target inhibitors. • **Conclusions:** These compounds show potential for overcoming resistance in lung adenocarcinoma by targeting both EGFR and PIK3CA.

Notable Presentations At IASLC 2025
AI / ML (20/20)

Date	Title	Author	Summary
9 Sep 2025	Prognostic-Predictive Modeling in Advanced Non-Small Cell Lung Cancer: A Review of Biomarkers Using AI, ML and DL	S.R. Khan	• **Introduction**: Lung cancer, particularly advanced NSCLC, remains a leading cause of cancer-related mortality, with prognosis often poor due to late-stage diagnosis. The advent of AI, particularly machine learning (ML) and deep learning (DL), offers a promising approach to improving prognostic models and treatment decisions. • **Methodology**: This review explores AI, ML, and DL applications in advanced NSCLC, focusing on biomarkers such as NLR, PLR, TMB, ctDNA, and radiomic signatures. It examines how AI can integrate these biomarkers into predictive models to enhance clinical decision-making. • **Results:** AI-driven models outperformed traditional prognostic methods, improving risk stratification and treatment personalization. Radiomics and ctDNA emerged as key biomarkers for accurate predictions. • **Conclusions:** AI-driven prognostic models can significantly improve NSCLC management, though challenges remain in dataset consistency, algorithm transparency, and clinical integration. Further validation and standardization are needed.
9 Sep 2025	Empowering Lung Cancer Care: The Role of AI Chatbots to Promote Exercise Oncology	T. Franchina	• **Introduction**: Exercise oncology improves physical and psychological well-being in lung cancer patients, enhancing quality of life, resilience, and treatment outcomes. However, awareness and adherence to exercise programs remain limited. AI chatbots, offering instant information and monitoring, could support exercise adherence in cancer care. • **Methodology**: We evaluated four popular free AI chatbots (ChatGPT, Google Gemini, Microsoft Copilot, and Claude) by posing five questions about exercise's role in lung cancer care, including benefits and methods. • **Results:** Responses highlighted limited information on tailored exercise regimens and the role of kinesiologists in creating individualized plans. • **Conclusions:** AI chatbots could better support exercise oncology by incorporating more specific, evidence-based recommendations to align with cancer care practices. Further evaluations are needed to ensure reliability and precision.

Strategic Insights and Strategy Development is our focus