ELCC 2025 Clinical and AI / ML Preview

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ELCC 2025 Preview – Table of Contents

ELCC 2025 – General Overview

- **Transformative Lung Cancer Science & Multinational RW Insights:** Landmark studies on EGFR, KRAS, ALK, and ADCs reshaped targeted therapy; global datasets validated treatment patterns and outcomes in real-world settings
- **Breakthroughs in Early-Stage NSCLC:** Focus on perioperative strategies, neoadjuvant immunotherapy, and MRD monitoring, integrated with immunotherapy, radiotherapy, and targeted agents
- **Global Stakeholder Collaboration:** Oncologists, regulators, and biopharma united to drive consensus on treatment optimization, ensuring consistent global guidelines
- **Technological Innovation & Personalized Care:** AI-driven diagnostics, liquid biopsies, and ctDNA-guided therapies advanced personalized, dynamic treatment strategies for lung cancer
- **Quality of Life & Patient-Centered Outcomes:** Increased integration of patient-reported metrics and health economics in trial endpoints, emphasizing the holistic approach to treatment
- **Precision Medicine in Action:** Expanding the use of biomarkers and personalized therapies, fostering tailored treatments and improved patient outcomes across diverse lung cancer subtypes

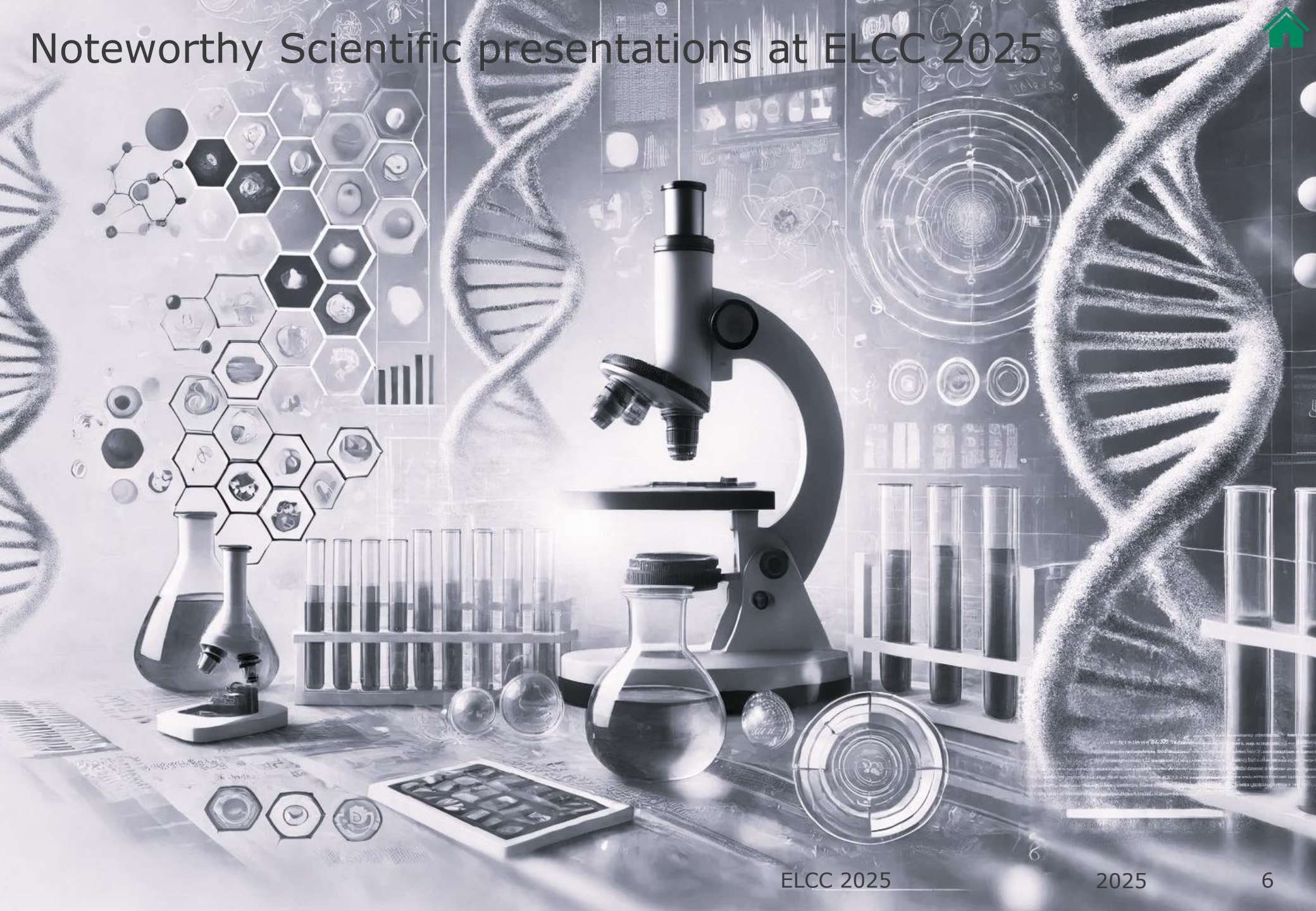
ELCC 2025– Conference Themes (1/2)

- **Immunotherapy Combinations:** Efficacy of PD-(L)1 inhibitors, TIGIT, CTLA-4 combinations, and emerging immunotherapies, enhancing the first-line and adjuvant treatment options
- **Liquid Biopsy and Biomarkers:** Integration of liquid biopsies (ctDNA) for MRD detection, patient selection, and monitoring treatment efficacy in real-time
- **Early-Stage Disease Management:** Expanding focus on neoadjuvant and adjuvant treatments, including immunotherapy and precision-driven perioperative strategies
- **Advancements in Targeted Therapy:** Focus on novel therapies targeting EGFR, KRAS, ALK, MET, RET, and novel antibody-drug conjugates (ADCs) for both early and resistant-stage NSCLC
- **Radiotherapy in Combination Therapies:** Exploring the synergy of stereotactic radiotherapy, reirradiation, and systemic therapies to improve local control and survival outcomes.

ELCC 2025– Conference Themes (2/2)

- **Real-World Evidence (RWE):** Utilization of real-world data from multicenter registries and observational studies to complement clinical trial findings and guide therapeutic decisions
- **Global Health Equity & Access:** Addressing the global disparities in access to lung cancer treatments, including diagnostics, therapies, and patient care, especially in low-income countries
- **Patient-centered care & Quality of Life:** Prioritizing patient-reported outcomes (PROs), mental health, and survival quality in lung cancer treatment, alongside traditional efficacy endpoints

Noteworthy Scientific presentations at ELCC 2025



Key Topics From Notable Presentations (1/8)

- **Targeted Therapy:** Sessions will highlight the future of targeted therapy in NSCLC lies in combining precision medicine with novel therapies, including ADCs and immunotherapy, to overcome resistance and improve long-term patient outcomes.
  - EGFR and ALK Inhibitors in NSCLC: Presentations will focus on the evolving role of EGFR and ALK inhibitors, particularly in overcoming resistance and extending progression-free survival in advanced NSCLC
  - Advancements in Antibody-Drug Conjugates (ADCs): Sessions will highlight the latest research on ADCs in NSCLC, emphasizing their potential to target specific mutations and improving treatment efficacy
  - Personalized Immunotherapy Approaches: Discussions will explore combining immunotherapy with targeted treatments, focusing on optimizing clinical outcomes in both first-line and second-line therapies for NSCLC

Key Topics From Notable Presentations (2/8)

- **Chemotherapy / Combination Therapy:** Spotlight will be on how combination therapies, including immunotherapy and chemotherapy, are advancing NSCLC treatment, with promising results from novel strategies like subcutaneous pembrolizumab and metabolic-targeted treatments like metformin and FMD.
  - Subcutaneous vs Intravenous Pembrolizumab: The MK-3475A-D77 Phase III trial compares subcutaneous (SC) and intravenous (IV) pembrolizumab with chemotherapy in metastatic NSCLC. Both showed similar efficacy, with SC offering a viable alternative
  - Camrelizumab Plus Chemotherapy in Squamous NSCLC: The Phase III Camel-sq trial shows that camrelizumab plus chemotherapy in advanced squamous NSCLC leads to improved overall survival (OS) and progression-free survival (PFS), supporting its long-term use
  - Metformin and Chemotherapy in LKB1-Inactive NSCLC: The FAME trial explores metabolic targeting using metformin and a fasting-mimicking diet (FMD) alongside first-line chemotherapy, showing potential benefits for OS in patients with LKB1-negative NSCLC

Key Topics From Notable Presentations (3/8)

- **Biomarkers / Diagnostics Screening:** The presentations are set to showcase innovative biomarker testing methods, such as liquid biopsies and NLP-driven analysis, which are showing strong promise for improving lung cancer detection and patient outcomes in real-world settings
  - European Results from the IASLC Global Survey on Biomarker Testing: The survey found 97% of European respondents recognize the importance of biomarker testing, though barriers like cost and time remain, with Europe showing better practices than global averages
  - Natural Language Processing (NLP)-Driven Analysis of mNSCLC Outcomes in Israel: Real-world analysis of immune checkpoint inhibitor use in mNSCLC patients without actionable genomic alterations showed ICI monotherapy yielded better outcomes than combination therapy, influenced by PD-L1 levels
  - Innovative Liquid Biopsy for Early Detection of Lung Cancer: A new blood test achieved 93.1% sensitivity and 87.5% specificity, using epigenetic markers to differentiate cancer types, showing promise for early lung cancer detection

Key Topics From Notable Presentations (4/8)

- **Early-stage / Resectable / Adjuvant / Neoadjuvant:** Discussions will be on emerging data for neoadjuvant therapies in resectable NSCLC, including EGFR-targeted therapies and immune checkpoint inhibitors, demonstrates improved outcomes, signaling a shift in early-stage treatment paradigms
- Neoadjuvant Lazertinib Therapy for EGFR Mutation-Positive Resectable Lung Cancer: This study explored using ExoBAL for detecting EGFR mutations in resectable NSCLC, followed by neoadjuvant therapy with Lazertinib. It showed promising response rates and high EGFR mutation detection accuracy
- Perioperative Immunotherapy in Resectable KRAS-Mutant NSCLC: Peri-R-01 study analyzed the effect of perioperative immune checkpoint inhibitors (ICI) in KRAS-mutated NSCLC, showing promising efficacy, with long-term follow-up needed to assess survival outcomes fully
- Comparative Effectiveness of Neo-adjuvant Chemotherapy and Immune Therapy in Resectable NSCLC: This research compared the survival benefits of neoadjuvant chemotherapy vs immune therapy, highlighting better survival outcomes for patients receiving perioperative immune treatment

Key Topics From Notable Presentations (5/8)

- **Immunotherapy:** Studies will highlight how Immunotherapy combined with chemotherapy continues to show promising benefits in NSCLC, especially in the context of brain metastases, with ongoing trials refining optimal regimens and safety profiles
  - Tobemtomig + Chemotherapy in NSCLC: A phase II trial evaluating Tobemtomig (PD-1/LAG-3 bispecific) with chemotherapy showed no improvement in objective response rates (ORR) or progression-free survival (PFS) over chemotherapy + pembrolizumab
  - Durvalumab + Tremelimumab in NSCLC: The POSEIDON trial demonstrated improved PFS for durvalumab plus tremelimumab (D+T+CT) compared to chemotherapy (HR 0.56) but OS did not reach statistical significance
  - Camrelizumab + Chemotherapy for NSCLC with Brain Metastases: The CAP-BRAIN trial showed that camrelizumab plus pemetrexed and carboplatin provided a median overall survival (OS) of 18.4 months with manageable safety

Key Topics From Notable Presentations (6/8)

- **Radiotherapy:** Emerging radiotherapy approaches like consolidative SRT and hypofractionated radiotherapy showing promising results for improving survival outcomes in NSCLC, with ongoing studies needed to confirm their long-term benefits will be discussed
  - Impact of Cardiac Substructure Dose on Cardiotoxicity and OS in Early-Stage NSCLC with SABR: LUNG HEART Study found that pre-existing heart conditions and high doses to the left anterior descending coronary artery elevated the risk of significant cardiac events and worsened OS in SABR-treated patients
  - Consolidative Stereotactic Radiotherapy for Oligo-Residual Non-Small Cell Lung Cancer (NSCLC) after First-Line Chemotherapy: This study demonstrated significant improvement in PFS and OS in patients with oligo-residual NSCLC after first-line chemotherapy with consolidative stereotactic radiotherapy (SRT)
  - Exploring Hypofractionated Thoracic Radiotherapy in Stage IV NSCLC: The study showed that higher biologically effective doses (BED) of hypofractionated radiotherapy significantly improved OS and PFS for metastatic NSCLC, highlighting the importance of personalized treatment approaches

Key Topics From Notable Presentations (7/8)

- **Real-world / Observational / Registry:** Real-world studies will emphasize the need for improved diagnostic and treatment strategies, especially in regions with emerging data gaps, highlighting the global variation in lung cancer care and outcomes.
  - Anlotinib in ICI-resistant NSCLC: A retrospective analysis of 539 NSCLC patients showed anlotinib provided a median PFS of 8.8 months, with favorable anti-tumor activity and manageable toxicity compared to other therapies
  - PD-1 Inhibitors in Advanced NSCLC: A study comparing camrelizumab, pembrolizumab, tislelizumab, and sintilimab showed no significant differences in efficacy or safety. All four PD-1 inhibitors demonstrated similar ORR and PFS in real-world practice
  - EGFR Mutation Landscape in Finland: Data from Finnish hospitals (2017-2023) revealed an 8% EGFR mutation incidence, with Del19 and L858R mutations being the most common. Median survival for advanced-stage patients was 23 months, indicating treatment needs.

Key Topics From Notable Presentations (8/8)

- **Small Cell Lung Cancer:** Experts will discuss how consolidation therapy with durvalumab significantly reduces extrathoracic metastases and improves progression-free survival, particularly in brain/CNS metastases, supporting its clinical benefit in SCLC management
  - Patterns of Disease Progression in SCLC: Research focused on durvalumab consolidation therapy improving progression-free survival and reducing extrathoracic metastases in patients with limited-stage small-cell lung cancer (SCLC)
  - Real-world Outcomes of Serplulimab: Results from the ASTROM-005R study showed that serplulimab combined with chemotherapy improves real-world efficacy and safety outcomes for extensive-stage small cell lung cancer (ES-SCLC)
  - Durvalumab and Brain Metastasis in SCLC: The ARSENAL study demonstrates that durvalumab in combination with platinum-based therapy offers real-world survival benefits in first-line ES-SCLC patients, with brain metastasis outcomes highlighted

Focus of Key Industry Sponsored Symposia at ELCC 2025 (1/3)

- **MSD :**
  - Focus Areas: Immunotherapy & Early-Stage NSCLC Treatment
  - Sessions will focus on advancements in thoracic oncology, exploring novel therapeutic pathways, and the evolving role of immunotherapy in treating advanced NSCLC
- **AstraZeneca & Thermo Fisher Scientific :**
  - Focus Areas: Emerging Biomarkers & NSCLC Diagnostics
  - Discussions are planned to emphasis integrating emerging biomarkers into NSCLC clinical practice, focusing on diagnostic tools, treatment personalization, and enhancing clinical integration of biomarkers
- **AbbVie:**
  - Focus Areas: Antibody-Drug Conjugates (ADCs) in NSCLC
  - Presentations will highlight the role of ADCs targeting c-Met and discuss different MET aberrations, focusing on their clinical impact and therapeutic potential in NSCLC treatment

Focus of Key Industry Sponsored Symposia at ELCC 2025 (2/3)

- **Regeneron Pharmaceuticals:**
  - Focus Areas: Immunotherapy & Non-Oncogene-Driven NSCLC
  - Sessions will explore reshaping immunotherapy's role in NSCLC, identifying novel treatment targets, and sequencing immune checkpoint inhibitors (ICIs) with chemotherapy post-progression.
- **AstraZeneca:**
  - Focus Areas: EGFR Mutation & NSCLC Treatment
  - Experts are set to discuss treatments for EGFRm NSCLC, standards of care for stage III unresectable EGFRm NSCLC, and balancing efficacy and safety for metastatic patients
- **Pfizer:**
  - Focus Areas: HER2 Mutations & ADCs in NSCLC
  - Discussions are set to explore the latest updates on ADCs for HER2 mutations in NSCLC, presenting new targets, developments in late-stage NSCLC, and ADC innovations

Focus of Key Industry-Sponsored Symposia at ELCC 2025 (3/3)

- **Accord Healthcare:**
  - Focus Areas: Immunotherapy & Chemotherapy in Extensive-Stage Small Cell Lung Cancer (ES-SCLC)
  - Presentations will focus on emerging chemo-immunotherapy data for ES-SCLC and strategies for second-line treatment options after initial therapy progression
- **Johnson & Johnson (JNJ):**
  - Focus Areas: EGFR Mutations & Treatment Strategies
  - Sessions will explore transforming clinical practice in EGFR-mutant NSCLC, guiding treatment options, and optimizing management for patients with common EGFR mutations
- **touchIME:**
  - Focus Areas: TROP2 in NSCLC
  - Sessions will focus on the clinical impact of targeting TROP2 in NSCLC, its utility in expression analysis, managing ADC toxicities, and future directions for TROP2 therapies in NSCLC

Notable Presentations at ELCC 2025

Notable Presentations at ELCC 2025 Targeted Therapy (1/14)

Date	Title	Author	Summary
26 Mar 2025	Amivantamab plus lazertinib vs osimertinib in first-line (1L) EGFR-mutant (EGFRm) advanced NSCLC: Final overall survival (OS) from the phase III MARIPOSA study	James Chih-Hsin Yang	• **Introduction:** First-line osimertinib has extended OS to ~3 years in EGFR-mutant (EGFRm) NSCLC, though 25–40% of patients never receive second-line therapy. MARIPOSA explores amivantamab+lazertinib (ami+laz) as a potentially superior alternative. • **Methodology**: In a randomized, phase III trial (NCT04487080), 1074 untreated EGFRm NSCLC patients received ami+laz, osimertinib, or lazertinib alone. OS was a key secondary endpoint; final analysis triggered at ~390 deaths. • **Results:** At 37.8 months' follow-up, ami+laz significantly improved OS vs osimertinib (HR 0.75; P<0.005). Median OS not reached for ami+laz vs 36.7 months for osimertinib; 60% vs 51% alive at 36 months. • **Conclusions:** Ami+laz is the first regimen to significantly reduce death risk vs osimertinib, supporting its adoption as a new 1L standard in EGFRm advanced NSCLC
26 Mar 2025	Phase I/II SOHO-01 study of BAY 2927088 in patients with previously treated HER2-mutant NSCLC: Safety and efficacy results from 2 expansion cohorts	Nicolas Girard	• **Introduction:** BAY 2927088 is an oral HER2 TKI showing early promise in HER2-mutant advanced NSCLC. This report covers two expansion cohorts from the ongoing Phase I/II SOHO-01 trial. • **Methodology**: Patients with HER2-activating mutations, post ≥1 systemic therapies, were enrolled: Cohort D (HER2 therapy-naïve) and Cohort E (prior HER2-ADC exposure). All received 20 mg BAY 2927088 twice daily. Primary endpoint was safety; secondary endpoints included ORR and DCR per RECIST v1.1. • **Results:** Among 78 patients, ORR was 70.5% in D and 35.3% in E; median response duration was 8.7 and 9.5 months, respectively. DCR reached 81.8% (D) and 52.9% (E). Diarrhea was the most frequent TRAE. • **Conclusions:** BAY 2927088 showed durable efficacy and manageable safety across HER2-targeted therapy–naïve and pretreated NSCLC patients.

Notable Presentations at ELCC 2025 Targeted Therapy (2/14)

Date	Title	Author	Summary
27 Mar 2025	First-line adagrasib (ADA) with pembrolizumab (PEMBRO) in patients (pts) with advanced/metastatic KRASG12C-mutated non-small cell lung cancer (NSCLC) and PD-L1 ≥50% from the phase II portion of KRYSTAL-7	Marina C. Garassino	• **Introduction:** ADA (adagrasib) + PEMBRO (pembrolizumab) showed early promise in PD-L1 ≥50% KRASG12C-mutant NSCLC in KRYSTAL-7. This update provides longer follow-up data. • **Methodology**:149 patients received ADA 400 mg BID + PEMBRO 200 mg Q3W as first-line therapy. Efficacy endpoints included ORR, DOR, PFS, OS; safety was comprehensively assessed. • **Results:** In 54 PD-L1 ≥50% patients, ORR was 59.3%, median DOR 26.3 months, PFS 27.7 months, and 18-month OS rate 62.4%. TRAEs occurred in 94.6% (Grade 3–4 in 68.4%); diarrhea, nausea, and ALT increase were most common. • **Conclusions:** ADA+PEMBRO demonstrated durable efficacy with manageable toxicity. The phase III trial vs PEMBRO alone is ongoing.
27 Mar 2025	Amivantamab, lazertinib and bevacizumab in EGFR-mutant advanced NSCLC with acquired resistance to 3rd generation EGFR-TKI: Final results from the phase II ETOP AMAZE-lung trial	Ross A. Soo	• **Introduction:** MET and angiogenesis activation are resistance mechanisms post-osimertinib in EGFR-mutant NSCLC. AMAZE-lung explores a chemo-sparing regimen using amivantamab, lazertinib, and bevacizumab. • **Methodology**: In this single-arm Phase II trial (NCT05601973), 61 chemonaïve, post-osimertinib patients received amivantamab + lazertinib + bevacizumab. The primary endpoint was 12-week ORR; ≥19/60 responders indicated success. • **Results:** ORR at 12 weeks was 33% (n=20); confirmed PR in 36%, DCR 79%. Median DoR was 13.9 months, PFS 10.9 months, and OS 15.5 months. Common TRAEs included infusion reactions (58%) and rash (50%). No fatal TRAEs reported. • **Conclusions:** The triplet demonstrated durable efficacy with a favorable safety profile, supporting it as a promising chemo-sparing option after osimertinib resistance.

Notable Presentations at ELCC 2025 Targeted Therapy (3/14)

Date	Title	Author	Summary
28 Mar 2025	Evaluation of tusamitamab ravtansine, a CEACAM5-targeting antibody drug conjugate, in non-squamous NSCLC participants with negative or moderate CEACAM5 expression and high circulating CEA: Results from phase II CARMEN-LC06 trial	Herve Lena	• **Introduction:** This Phase II study assessed tusamitamab ravtansine in non-squamous NSCLC patients with high cCEA (≥100 ng/mL) but low/moderate archival CEACAM5 expression, hypothesizing elevated CEACAM5 at treatment start. • **Methodology**: Twenty-two patients received tusamitamab ravtansine 100 mg/m² IV Q2W. Primary endpoint: ORR; secondary endpoints included PFS, DCR, DOR, and safety. Study ended early due to program discontinuation. • **Results:** ORR was 9.1%; DCR 36.4%; median PFS 1.9 months. Common AEs: appetite loss (40.9%), fatigue (27.3%), and keratopathy (13.6%). Grade ≥3 TRAEs occurred in 4.5%. No new safety signals emerged. • **Conclusions:** Modest efficacy was observed in a limited cohort. Safety profile remained manageable and consistent with prior studies; development was discontinued.
28 Mar 2025	Efficacy and safety of firmonertinib 160 mg combined with intrathecal injection pemetrexed in NSCLC patients with EGFR mutations and leptomeningeal metastases	Xiaoyan Li	• **Introduction:** Leptomeningeal metastases (LM) are increasingly observed in EGFR-TKI–resistant NSCLC, with limited treatment options. • **Methodology**: In cohort 4 of a prospective trial (ChiCTR2300071395), 40 EGFR-mutant NSCLC patients with LM received firmonertinib 160 mg QD plus intrathecal pemetrexed 40 mg Q3W. Primary endpoint: intracranial PFS; secondary endpoints: PFS, OS, LM response (RANO), safety. • **Results:** Median PFS was 10.2 mo; intracranial PFS not reached. LM response rate was 14%, with 89% achieving response/stable disease. Median OS was 15.4 mo. TRAEs occurred in 67.5%; Grade ≥3 in 5%. • **Conclusions:** Firmonertinib plus intrathecal pemetrexed demonstrated promising efficacy and tolerability in EGFR-mutant NSCLC with LM.

Notable Presentations at ELCC 2025
Targeted Therapy (4/14)

Date	Title	Author	Summary
28 Mar 2025	Safety and efficacy of aumolertinib treatment in patients with advanced NSCLC harboring 20ins and uncommon EGFR mutations (AIM)	Wen Feng Fang	• **Introduction:** Uncommon EGFR mutations in NSCLC remain challenging to treat, particularly EGFR exon 20 insertions (20ins), which are resistant to most TKIs. • **Methodology**: In this phase II trial (NCT04785742), 41 advanced NSCLC patients with uncommon EGFR mutations received high-dose aumolertinib (165 mg QD). Patients were stratified into two cohorts: Cohort 1 (20ins) and Cohort 2 (non-20ins). • **Results:** ORR was 12.5% (20ins) vs 47.1% (non-20ins); DCR was 100% in both. Median PFS was 6.5 vs 11.8 months; OS was 20.6 vs 29.4 months. No new safety signals were identified. • **Conclusions:** High-dose aumolertinib showed manageable toxicity and promising efficacy, particularly in non-20ins EGFR mutation subsets.
28 Mar 2025	Firmonertinib (formerly furmonertinib) combined with anlotinib in patients with treatment-naive EGFR-mutant non-small-cell lung cancer: updated results from FOCUS-A study	Baohui Han	• **Introduction:** Combining VEGF and EGFR blockade may enhance efficacy and delay resistance in EGFR-mutant NSCLC. • **Methodology**: FOCUS-A, a phase II trial (NCT04895930), enrolled 40 treatment-naïve EGFR-mutant NSCLC patients to receive firmonertinib 80 mg QD plus anlotinib 10 mg (days 1–14, Q3W). • **Results:** ORR and DCR were 87.5% and 100%, respectively. Median PFS was 25.1 months. In patients with baseline CNS metastases (n=16), CNS PFS reached 33.2 months. Grade ≥3 TRAEs occurred in 32.5% of patients, mainly hypertension and proteinuria. • **Conclusions:** Firmonertinib plus anlotinib demonstrated promising intracranial and systemic efficacy with a manageable safety profile.

Notable Presentations at ELCC 2025
Targeted Therapy (5/14)

Date	Title	Author	Summary
28 Mar 2025	Osimertinib for patients with EGFRm non-small cell lung cancer: Analysis of the locally advanced/metastatic cohort (OSIREAL study)	Delvys Rodriguez Abreu	• **Introduction:** Osimertinib is standard first-line therapy for EGFR-mutant NSCLC per FLAURA trial; real-world validation in broader patient populations is needed. • **Methodology**: This ambispective, multicenter study included 326 Spanish patients with EGFRm NSCLC treated with 1L osimertinib (2018–2023). PFS was assessed via Kaplan-Meier. • **Results:** Median PFS was 16.4 months (95% CI, 13.9–18.5) in a cohort with 67% females, 30% ≥75 years, and 21% ECOG PS ≥2. Six-, 12-, and 18-month PFS rates were 80.2%, 59.7%, and 38.0%, respectively. • **Conclusions:** Despite poorer baseline characteristics, real-world osimertinib effectiveness was comparable to FLAURA, supporting its use in broader clinical settings.
28 Mar 2025	A real-world study of furmonertinib in uncommon EGFR mutated non-small cell lung cancer with central nervous system metastasis	Shen Cun Fang	• **Introduction:** Furmonertinib's efficacy in CNS metastatic NSCLC patients with uncommon EGFR mutations (excluding Ex20ins) was evaluated in this study. • **Methodology**:A retrospective analysis of 31 patients with CNS metastases and uncommon EGFR mutations treated with furmonertinib at Nanjing Medical University. ctDNA from CSF was analyzed using NGS. • **Results:** The CNS ORR was 38.7%, with a DCR of 64.5%. Median iPFS was 6.97 months, and OS was not reached. Solitary mutations had better outcomes with a median iPFS of 13.90 months. • **Conclusions:** Furmonertinib showed promising efficacy and manageable toxicity, supporting its potential for treating CNS metastasis in uncommon EGFR-mutant NSCLC patients.

Notable Presentations at ELCC 2025
Targeted Therapy (6/14)

Date	Title	Author	Summary
28 Mar 2025	Long-term follow-up of limertinib (ASK120067) in patients with locally advanced or metastatic EGFR T790M NSCLC: A multicentre, single-arm, phase IIb study	Lin Wu	• **Introduction:** Limertinib (ASK120067) is a third-generation EGFR TKI targeting both sensitizing EGFR and EGFR T790M mutations. This study presents mature OS data and a post-hoc analysis evaluating reduced-dose limertinib's efficacy and safety. • **Methodology**: In the phase IIb study, patients received limertinib 160 mg twice daily until progression or toxicity. A post-hoc analysis compared efficacy and survival between those on reduced-dose and standard-dose limertinib. • **Results:** 301 patients were enrolled with a median follow-up of 28.5 months. The reduced-dose group had improved PFS (13.7 months) and OS (42.5 months) compared to the standard-dose group (10.2 months and 25.0 months, respectively). • **Conclusions:** Reduced-dose limertinib showed promising survival outcomes in EGFR T790M-mutated NSCLC, supporting further investigation.
28 Mar 2025	A phase II study of sunvozertinib combined with anlotinib in EGFR-TKIs resistant EGFRm advanced NSCLC patients (WUKONG9)	Jie Hu	• **Introduction:** Sunvozertinib is a selective EGFR TKI that targets various EGFR mutations, showing promising anti-tumor activity in EGFRm-positive NSCLC after standard EGFR-TKI failure. This study evaluates its combination with the anti-angiogenic drug Anlotinib, exploring its safety and efficacy. • **Methodology**: This phase II study enrolled patients with EGFRm who failed prior EGFR-TKI treatments. The study had two parts: Part A focused on a dose-reduction safety run-in to determine tolerability, while Part B expanded to assess efficacy at the recommended combination dose (RCD). • **Results:** By Dec 25, 2024, 10 patients had successfully completed Part A, and 3 entered Part B. The combination was well tolerated, with an overall response rate (ORR) of 33.3% and disease control rate (DCR) of 100%. Common adverse events (TEAEs) included diarrhea, rash, proteinuria, and fatigue. • **Conclusions:** Sunvozertinib combined with Anlotinib showed promising antitumor activity and a manageable safety profile in EGFRm-positive NSCLC patients. Further enrollment is ongoing for updated results.

Notable Presentations at ELCC 2025
Targeted Therapy (7/14)

Date	Title	Author	Summary
28 Mar 2025	Amivantamab monotherapy in patients with pre-treated NSCLC with EGFR Exon 20 insertion mutations: Real-world data on efficacy and safety from the Italian biomarker ATLAS database	Antonio Passaro	• **Introduction:** This study evaluates the real-world effectiveness and safety of amivantamab in patients with EGFR exon 20 insertion (Ex20ins)-mutated metastatic non-small cell lung cancer (NSCLC), following at least one prior treatment line. • **Methodology**: Data were collected from the Italian ATLAS registry, involving 64 patients treated with amivantamab across 33 centers. Clinical features, treatment outcomes, and safety were retrospectively analyzed. • **Results:** The overall response rate (ORR) was 37.5%, with a disease control rate (DCR) of 66.2%. Median progression-free survival (PFS) was 9.6 months, and median overall survival (OS) was 16.9 months. Patients with brain metastases had an intracranial PFS of 11.6 months. Common adverse events (AEs) included cutaneous toxicity (53.1%), asthenia, and liver toxicity. • **Conclusions:** These real-world findings confirm the efficacy of amivantamab in heavily pretreated patients, including those with brain metastases, and demonstrate its manageable safety profile.
28 Mar 2025	FIN-EGFRprint: A retrospective observational study to investigate treatments and outcomes in patients with epidermal growth factor receptor-mutated (EGFRm) advanced non-small cell lung cancer (aNSCLC) in Finland	Aija Knuuttila	• **Introduction:** This study assesses changes in the clinical characteristics, treatment pathways, and outcomes of advanced non-small cell lung cancer (aNSCLC) patients with common EGFR mutations (cEGFRm) from 2010 to 2023, focusing on the impact of evolving treatment strategies, especially EGFR tyrosine kinase inhibitors (TKIs). • **Methodology**: A retrospective observational study analyzed national registry and hospital data from two Finnish university hospitals, covering 379 patients. The study examined outcomes over three periods based on the availability of first-, second-, and third-generation TKIs. • **Results:** The study found that first-line TKI use increased from 68% (2010–2016) to 94% (2020–2023), with 80% using third-generation TKIs in 2023. Median overall survival (OS) improved from 19 months (2010–2016) to 29 months (2020–2023), and median time to next treatment (TTNT) increased from 10 months to 21 months. • **Conclusions:** OS and TTNT improved with the introduction of second- and third-generation TKIs, but outcomes remain suboptimal, highlighting the need for ongoing innovation in treatment strategies.

Notable Presentations at ELCC 2025
Targeted Therapy (8/14)

Date	Title	Author	Summary
28 Mar 2025	Optimizing treatment strategies for EGFR 21L858R mutation non-small cell lung cancer with brain metastases: A real-world analysis of first-line EGFR-TKI efficacy	Likun Chen	• **Introduction:** This study aims to evaluate the efficacy of first-line EGFR-tyrosine kinase inhibitors (TKIs) in non-small cell lung cancer (NSCLC) patients harboring the 21L858R mutation and brain metastases (BM), providing insights into treatment outcomes and resistance mechanisms. • **Methodology**: Clinical data from 331 patients treated at Sun Yat-sen University Cancer Center between April 2014 and June 2023 were analyzed. The efficacy was assessed using intracranial progression-free survival (iPFS), progression-free survival (PFS), and overall survival (OS). • **Results:** The third-generation EGFR-TKI cohort showed significant improvements in iPFS (20.6 months), PFS (18.6 months), and OS (41.2 months). The third-generation TKI combined with chemotherapy yielded the best outcomes, especially in patients with TP53 mutations, who showed substantial benefits (iPFS, PFS, OS all improved, $p < 0.001$). • **Conclusions:** Third-generation EGFR-TKIs combined with chemotherapy demonstrate enhanced efficacy in this patient population, with a notable impact on iPFS, PFS, and OS. Further prospective trials are needed to confirm these findings.
28 Mar 2025	Real-world post-progression analysis of first-line osimertinib for EGFR-mutated advanced NSCLC in China (FLOURISH study)	Jianya Zhou	• **Introduction:** The FLOURISH study assesses the real-world outcomes of osimertinib (osi) as first-line (1L) treatment in Chinese patients with EGFR-mutated advanced non-small cell lung cancer (aNSCLC), specifically focusing on post-progression clinical outcomes. • **Methodology**: Treatment-naïve patients with locally advanced or metastatic EGFR-mutated NSCLC were enrolled. Post-progression outcomes, including progression sites, subsequent treatments, time to discontinuation of subsequent treatment (TTD2), and progression-free survival after subsequent treatment (PFS2) were evaluated. • **Results:** Among 481 patients, 197 experienced progression, with lung being the most common progression site (66.9%). Only 16.9% had CNS progression. Of the 142 patients with progression, 64.1% received subsequent treatment. The median TTD2 was 29.8 months, and the median PFS2 was 25.7 months. • **Conclusions:** The FLOURISH study highlights that 1L osimertinib provided clinical benefits beyond initial progression, with lung being the primary site of progression and less frequent CNS progression. These findings are consistent with previous studies, demonstrating the real-world effectiveness of osimertinib.

Notable Presentations at ELCC 2025
Targeted Therapy (9/14)

Date	Title	Author	Summary
28 Mar 2025	First-line treatment in epidermal growth factor receptor (EGFR)-mutated non-small cell lung cancer (NSCLC): A review and individual patient data (IPD) comparison of phase III clinical trials	Andrea Torchia	• **Introduction:** This systematic review and IPD meta-analysis compares the efficacy and safety of investigational first-line treatments for advanced EGFR-mutated NSCLC to osimertinib monotherapy. • **Methodology**: The analysis includes data from two phase III trials: FLAURA2 (osimertinib-chemotherapy combination) and MARIPOSA (amivantamab-lazertinib combination). The primary endpoints of progression-free survival (PFS) and intracranial progression-free survival (icPFS) were assessed. • **Results:** FLAURA2 showed significant PFS improvements in various subgroups, including patients with CNS metastases and EGFR L858R mutation. However, no significant differences were found in patients with exon 19 deletions or liver metastases. Safety profiles varied, with FLAURA2 showing more anemia and diarrhea, while MARIPOSA had more cutaneous rash and paronychia. • **Conclusions:** Osimertinib combined with chemotherapy showed superior efficacy in specific subgroups, particularly those with EGFR L858R mutations and CNS metastases. However, the interpretation of results must account for indirect data, and factors such as patient characteristics and safety profiles should guide treatment choice.
28 Mar 2025	Long-term survival outcomes with first-line (1L) osimertinib monotherapy and subsequent treatment (tx) patterns: Final analysis of a real-world (rw) study in US patients (pts) with epidermal growth factor receptor-mutated (EGFRm) advanced non-small cell lung cancer (NSCLC)	Frank Griesinger	• **Introduction:** Osimertinib is the standard first-line treatment for advanced EGFR-mutated (EGFRm) non-small cell lung cancer (NSCLC). This study presents long-term survival outcomes and subsequent treatment patterns from a real-world observational study in the US cohort of EGFRm NSCLC patients who received first-line osimertinib. • **Methodology**: The study conducted a retrospective chart review across five US oncology centers for patients initiating first-line osimertinib from April 2018 to March 2020. Primary endpoints included real-world overall survival (rwOS), time to next treatment or death (TTNTD), and second-line (2L) treatment patterns. Secondary endpoints assessed baseline characteristics and time to treatment discontinuation (TTD). • **Results:** The median follow-up was 52.6 months, with median rwOS of 34.1 months in the overall cohort and 37.2 months in the FLAURA-like cohort. The most common second-line treatment was platinum-based chemotherapy (40%). • **Conclusions:** First-line osimertinib provided long-term durable outcomes for patients with EGFRm advanced NSCLC, with survival outcomes consistent with the FLAURA trial. The study supports osimertinib as the preferred first-line therapy option.

Notable Presentations at ELCC 2025
Targeted Therapy (10/14)

Date	Title	Author	Summary
28 Mar 2025	Balancing Efficacy and Safety: Systematic Review of Osimertinib Plus Chemotherapy in advanced EGFR-Mutated NSCLC	Omar Daas	• **Introduction:** This systematic review investigates the efficacy and safety of combining chemotherapy with osimertinib in patients with EGFR-mutated advanced non-small cell lung cancer (NSCLC), focusing on outcomes such as progression-free survival (PFS) and adverse AEs • **Methodology**: A comprehensive literature search was conducted across PubMed, Scopus, Cochrane Library, and Web of Science up to November 2024. The review included eight studies with 1,838 patients, and assessed the incidence of AEs as an additional outcome. • **Results:** Combining osimertinib with chemotherapy showed superior efficacy compared to osimertinib alone, particularly in patients with CNS, liver, bone, or extrathoracic metastases. The PFS was 25.5 months, with significant benefits observed in the Chinese (PFS = 27.4 months) and Japanese (PFS = 14.5 months) populations. Safety analyses revealed severe AEs in 20%–83.8% of cases, primarily due to pneumonia and interstitial lung disease. • **Conclusions:** The combination of osimertinib and chemotherapy improves efficacy in advanced EGFR-mutated NSCLC, though the increased incidence of severe AEs requires careful patient selection. Further research is needed to optimize treatment strategies.
28 Mar 2025	Final overall survival and long-term safety outcomes of savolitinib in patients with locally advanced or metastatic NSCLC harboring METexon 14 (METex14) mutation: An update from a phase IIIb study	Yongfeng Yu	• **Introduction:** Savolitinib (Savo) is a potent and highly selective MET inhibitor. This abstract presents the final overall survival (OS) and long-term safety outcomes from a phase IIIb confirmatory study involving treatment-naïve and previously treated patients (pts) with METex14-mutated advanced non-small cell lung cancer (NSCLC). • **Methodology**: Treatment-naïve (1L) or previously treated (≥2L) pts with METex14 NSCLC were enrolled. Eligible pts received savolitinib at 600 mg (body weight ≥50 kg) or 400 mg (<50 kg) daily. OS analysis was conducted using the Kaplan-Meier method. • **Results:** Among 166 pts, the median follow-ups for treatment-naïve and previously treated pts were 34.5 and 25.1 months, respectively. The median OS was 28.3 months in treatment-naïve pts and 25.3 months in previously treated pts. The 36-month OS rate for treatment-naïve pts was 44.7%. For previously treated pts, the 24-month OS rate was 51.7%. Subgroup analysis indicated pts with baseline brain metastases may also benefit. Treatment-related Grade ≥3 adverse events occurred in 62.0% of pts, with hepatic abnormalities being the most common. • **Conclusions:** The final OS results further demonstrate the survival benefit of savolitinib in advanced METex14 NSCLC, particularly in treatment-naïve pts. No new safety signals were observed.

Notable Presentations at ELCC 2025 Targeted Therapy (11/14)

Date	Title	Author	Summary
28 Mar 2025	Tepotinib in patients (pts) with METexon 14 (METex14) skipping non-small cell lung cancer (NSCLC) from the VISION study: ≥3-year follow-up outcomes	Julien Mazieres	• **Introduction:** Tepotinib, a potent MET inhibitor, has demonstrated robust efficacy and safety in patients with METex14 skipping or MET amplification (METamp) NSCLC. This study reports long-term outcomes from the Phase II VISION study, focusing on patients with ≥3 years of follow-up. • **Methodology**: Patients with advanced METex14 skipping or METamp NSCLC were treated with tepotinib 500 mg daily. The primary endpoint was objective response rate (ORR), with secondary endpoints including duration of response (DOR), progression-free survival (PFS), overall survival (OS), and safety. • **Results:** In 313 patients, ORR was 51.8%, with median DOR of 18.0 months. First-line patients had a higher ORR (57.9%) and longer DOR (31.7 months) compared to second-or-later line patients (45.0% ORR, 12.6 months DOR). The median OS was 19.7 months. Safety analyses showed 36.1% of patients experienced grade ≥3 treatment-related adverse events. • **Conclusions:** Tepotinib demonstrates durable activity and favorable survival outcomes in METex14 skipping and METamp NSCLC, supporting its use as a meaningful treatment option in this setting.
28 Mar 2025	Efficacy and safety of lorlatinib in patients with ALK+ metastatic non-small cell lung cancer (mNSCLC) previously treated with an ALK inhibitor: Results from a phase IV study	Alessandra Bearz	• **Introduction:** Lorlatinib, a highly selective ALK inhibitor, was approved for ALK-positive metastatic non-small cell lung cancer (mNSCLC) patients after progression on prior ALK tyrosine kinase inhibitors (TKIs). This Phase IV study confirms lorlatinib's efficacy and safety in patients progressing on 1st-line alectinib or ceritinib. • **Methodology**: In this open-label, Phase IV study, adult patients with ALK+ mNSCLC, progressing on alectinib or ceritinib, received lorlatinib 100 mg daily. Primary endpoint: confirmed objective response rate (ORR) by independent review. Secondary endpoints: duration of response (DOR), progression-free survival (PFS), intracranial ORR, and safety. • **Results:** The confirmed ORR was 42%. Median DOR was not reached, with a 65% chance of maintaining response for ≥12 months. Median PFS was 12.2 months. In patients with CNS metastases, the intracranial ORR was 47%. TEAEs occurred in 97% of patients, with 39% experiencing grade ≥3 AEs. • **Conclusions:** Lorlatinib continued to show clinically meaningful efficacy and safety in ALK+ mNSCLC patients previously treated with 2nd-line ALK TKIs, with outcomes consistent with prior studies.

Notable Presentations at ELCC 2025
Targeted Therapy (12/14)

Date	Title	Author	Summary
28 Mar 2025	Clinical Characteristics, Treatment Patterns, and Outcomes of First-line Brigatinib in Patients with Advanced ALK+ NSCLC: A Multinational Real-World Study	Sharmistha Ghosh	• **Introduction:** This study describes real-world outcomes in patients with ALK-positive advanced non-small cell lung cancer (aNSCLC) treated with first-line brigatinib (BRG) in Germany, the UK, and the US, assessing treatment patterns and efficacy. • **Methodology**: Data were collected from the Adelphi NSCLC Disease Specific Programme™, an observational study involving 104 physicians. The study evaluated clinical characteristics, treatment outcomes, time to treatment discontinuation (rwTTD), and time to progression (rwTTP) following first-line BRG. • **Results:** Among 331 patients, the overall response rate was 83%, with a disease control rate of 91%. The median rwTTD and rwTTP were 26.0 months and 29.0 months, respectively. The most common treatment-related adverse events were gastrointestinal toxicities, including nausea (77%) and diarrhea (56%). • **Conclusions:** Real-world outcomes with 1L BRG in ALK+ aNSCLC patients showed significant efficacy and tolerability, supporting findings from the phase III ALTA-1L trial.
28 Mar 2025	Efficacy of subsequent therapy following the progression of crizotinib in advanced ROS1+ NSCLC in real word setting	Zihua Zou	• **Introduction:** This study evaluates the efficacy of subsequent therapies after crizotinib progression in advanced ROS1-positive non-small cell lung cancer (NSCLC) patients in a real-world setting. • **Methodology**: Medical records of 140 patients treated at multiple tertiary hospitals in China were retrospectively analyzed. Radiological evaluations were conducted based on RECIST 1.1 criteria, including intracranial efficacy. • **Results:** Patients receiving next-generation ROS1-TKIs (repotrectinib, taletrectinib, TL-139) showed significantly better progression-free survival (PFS) and objective response rates (ORR) compared to those receiving non-next-generation TKIs. Chemo+IO therapy did not show improved outcomes over traditional platinum-based chemotherapy. • **Conclusions:** Next-generation ROS1-TKIs should be the preferred therapy after crizotinib resistance, particularly for patients with secondary ROS1 mutations. Lorlatinib is recommended for patients with CNS metastases, while IO-based combinations were not superior to standard chemotherapy.

Notable Presentations at ELCC 2025
Targeted Therapy (13/14)

Date	Title	Author	Summary
28 Mar 2025	Intracranial efficacy of crizotinib in advanced ROS1+NSCLC in real-world setting	Zihua Zou	• **Introduction:** This study investigates the intracranial efficacy of crizotinib in advanced ROS1-positive non-small cell lung cancer (NSCLC) patients with CNS metastases, with a focus on the impact of brain radiotherapy (RT). • **Methodology**: The research retrospectively analyzes data from 78 patients diagnosed with advanced ROS1+NSCLC and CNS metastases, evaluating CNS progression-free survival (CNS-PFS) and objective response rate (CNS-ORR) according to RECIST 1.1. • **Results:** Crizotinib demonstrated a CNS-ORR of 66.7% and a median CNS-PFS of 22.2 months. No significant difference in CNS-PFS was observed between patients receiving brain-RT and those who did not, especially in those with multiple or larger CNS lesions. However, a numerical improvement in CNS-PFS was noted in patients with smaller CNS lesions treated with RT. • **Conclusions:** Crizotinib shows favorable CNS efficacy in ROS1+NSCLC patients, with no substantial benefit from brain-RT in patients with multiple or larger CNS metastases. A potential benefit of RT was observed in patients with smaller CNS lesions.
28 Mar 2025	Long-term efficacy of lorlatinib vs alectinib in patients with and without brain/central nervous system metastases: Matching-adjusted indirect comparisons	Julien Mazieres	• **Introduction:** This study addresses the lack of direct comparisons between lorlatinib and alectinib for treating ALK-positive metastatic non-small cell lung cancer (mNSCLC), particularly in patients with or without baseline brain metastases (BM). The research utilizes matching-adjusted indirect comparisons (MAICs) from the CROWN and ALEX trials to compare progression-free survival (PFS) outcomes. • **Methodology**: An anchored MAIC was used to adjust for baseline differences in factors such as ECOG performance status, BM, and race. Data from the long-term CROWN and ALEX trials were analyzed to compare PFS in patients with and without baseline BM. • **Results:** Lorlatinib showed improved PFS compared to alectinib in patients without baseline BM (HR: 0.51). In patients with BM, although the sample size was small, lorlatinib also showed a numerically favorable benefit (HR: 0.47). The PFS probability difference at year 1 was greater in patients with BM (0.30) compared to those without (0.19), with continued improvement over time for patients without BM. • **Conclusions:** Lorlatinib demonstrates superior PFS compared to alectinib in both patients with and without baseline BM, supporting its efficacy as a first-line treatment for ALK+ mNSCLC.

Notable Presentations at ELCC 2025
Targeted Therapy (14/14)

Date	Title	Author	Summary
28 Mar 2025	Phase I study of patritumab deruxtecan (HER3-DXd) in patients (pts) with advanced KRAS G12C non-small cell lung cancer (NSCLC): Study U102 cohort 5	Luis Paz-Ares	• **Introduction:** The study evaluates the efficacy of HER3-DXd, a novel antibody-drug conjugate, in patients with KRAS G12C-mutated non-small cell lung cancer (NSCLC) who have progressed after receiving KRAS G12C inhibitors. HER3 is overexpressed in NSCLC and has been linked to poor clinical outcomes, making HER3-DXd a promising treatment option. • **Methodology**: A multicenter, open-label, dose-escalation/expansion study (NCT03260491) is being conducted with patients who have advanced KRAS G12C NSCLC and have received at least two prior systemic therapies, including one KRAS G12C inhibitor. HER3-DXd is administered at 5.6 mg/kg IV Q3W until disease progression or unacceptable toxicity. • **Results:** Previous studies in patients with EGFR mutations showed a promising efficacy (41% objective response rate, 6.4 months progression-free survival, and 16.2 months overall survival). Cohort 5 will explore HER3-DXd in KRAS G12C patients post-targeted therapy, focusing on antitumor activity, safety, and efficacy, especially in intracranial tumors. • **Conclusions:** HER3-DXd shows potential in treating KRAS G12C-mutated NSCLC after progression on targeted therapy. Further exploration is needed to confirm its efficacy in this setting.

Notable Presentations at ELCC 2025
Chemotherapy / Combination Therapy (1/3)

Date	Title	Author	Summary
27 Mar 2025	Subcutaneous (SC) versus intravenous (IV) pembrolizumab (Pembro) plus chemotherapy (CT) in metastatic non-small cell lung cancer (mNSCLC): Phase III MK-3475A-D77 trial	Enriqueta Felip	• **Introduction:** The MK-3475A-D77 Phase III trial evaluated subcutaneous pembrolizumab (pembro SC) co-formulated with berahyaluronidase alfa, versus standard intravenous pembrolizumab (pembro IV), both with chemotherapy, in metastatic NSCLC (mNSCLC). • **Methodology**: 377 treatment-naïve mNSCLC patients were randomized 2:1 to pembro SC 790 mg Q6W or pembro IV 400 mg Q6W plus platinum doublet chemotherapy. Co-primary endpoints were pharmacokinetic noninferiority (AUC and Ctrough). • **Results:** Pembro SC achieved noninferior exposure (AUC GMR 1.14; Ctrough GMR 1.67, both p<0.0001). Efficacy was comparable (ORR 45.4% vs 42.1%; PFS 8.1 vs 7.8 months). Grade ≥3 AEs were similar (~47%); injection-site events were infrequent (2.4%). • **Conclusions:** Pembro SC demonstrated equivalent pharmacokinetics, similar efficacy, and a manageable safety profile vs pembro IV, supporting SC administration as a viable alternative.
28 Mar 2025	Camrelizumab plus chemotherapy (Cam-chemo) as first-line (1L) therapy for advanced squamous non-small cell lung cancer (sqNSCLC): 5y update from the phase III CameL-sq trial	Caicun Zhou	• **Introduction:** The Phase III CameL-sq trial previously demonstrated improved PFS with camrelizumab (Cam) plus chemotherapy in advanced squamous NSCLC. This update provides 5-year overall survival (OS) outcomes. • **Methodology**: 389 untreated advanced sqNSCLC patients were randomized 1:1 to receive Cam-chemo or placebo-chemo. Crossover to Cam was allowed. Max Cam duration: 2 years. • **Results:** Median OS was 27.4 vs 15.5 months (HR 0.57; p<0.0001). Five-year OS: 27.8% vs 12.5%. Adjusted HR (RPSFT): 0.38. PD-L1 subgroups showed sustained benefit. Patients completing 2 years of Cam had 84.0% 5-year OS. • **Conclusions:** Cam-chemo yields durable survival benefit with no new safety signals, supporting its long-term role as 1L standard-of-care in advanced sqNSCLC.

Notable Presentations at ELCC 2025
Chemotherapy / Combination Therapy (2/3)

Date	Title	Author	Summary
28 Mar 2025	Tislelizumab (TIS) combined with chemotherapy (CT) as first-line (1L) therapy for locally advanced or metastatic nonsquamous non-small cell lung cancer (LA/M nsq-NSCLC): Programmed death-ligand 1 (PD-L1) expression ≥50% subgroup analysis of the randomized, phase III RATIONALE-304 trial	Yan Yu	• **Introduction:** RATIONALE-304 evaluated first-line tislelizumab (TIS) plus chemotherapy (CT) vs CT in advanced non-squamous NSCLC. This analysis focused on patients with PD-L1 ≥50%. • **Methodology**: In this randomized (2:1), open-label Phase III trial, 110 patients received TIS+CT (n=74) or CT (n=36). Primary endpoint: PFS (IRC-assessed); secondary endpoints: OS, ORR, DoR, safety. • **Results:** TIS+CT significantly improved median PFS (14.6 vs 4.6 mo; HR 0.31) and OS (43.4 vs 13.1 mo; HR 0.34). ORR was 70.3% vs 30.6%. Four-year OS reached 90.5% in long-term responders. Safety remained manageable. • **Conclusions:** TIS+CT provided durable, clinically meaningful benefit across all efficacy endpoints with tolerable safety, supporting its use in PD-L1 ≥50% advanced nsq-NSCLC.
28 Mar 2025	Two years of follow-up data of a phase II clinical trial of atezolizumab with bevacizumab for patients with PD-L1 high expression non-squamous non-small cell lung cancer (WJOG10718L/@ Be Study)	Takashi Seto	• **Introduction:** Bevacizumab may enhance immune checkpoint inhibitor activity. This Phase II WJOG10718L/@Be study evaluated atezolizumab + bevacizumab in PD-L1 ≥50% non-squamous NSCLC. • **Methodology**: Forty untreated patients without EGFR/ALK/ROS1 alterations received atezolizumab 1200 mg + bevacizumab 15 mg/kg Q3W. Primary endpoint: ORR; secondary endpoints included PFS, DOR, OS, and safety. • **Results:** After 29.3-month median follow-up, ORR was 64.1%. Median PFS was 15.7 months, DOR 15.9 months, and OS 36.1 months. No new safety signals emerged over two years. • **Conclusions:** Atezolizumab + bevacizumab showed durable efficacy and favorable safety, supporting its use in PD-L1 high non-squamous NSCLC.

Notable Presentations at ELCC 2025
Chemotherapy / Combination Therapy (3/3)

Date	Title	Author	Summary
28 Mar 2025	Metformin plus/minus cyclic fasting mimicking diet to improve the efficacy of first-line chemo-immunotherapy in advanced LKB1-inactive NSCLC: Results of the phase II trial FAME	Mario Occhipinti	• **Introduction:** LKB1-inactive (LKB1neg) NSCLC is associated with poor outcomes. This trial explored metabolic targeting using metformin ± fasting-mimicking diet (FMD) alongside first-line therapy. • **Methodology**: Patients with LKB1neg NSCLC were enrolled in three cohorts (FAME, MERCY, BORN) receiving chemotherapy ± immunotherapy with metformin ± FMD. Primary endpoint: PFS; secondary endpoints: OS, ORR, safety. • **Results:** In patients receiving CT-IO, median PFS ranged 4.4–4.7 months across cohorts; ORR was higher in FAME (57.1%) vs BORN (20.6%). In Stk11-mutated patients, FAME showed mOS of 19 months vs 8.4 months in BORN. • **Conclusions:** Despite early termination, metformin ± FMD showed potential OS benefit in LKB1neg NSCLC, supporting further investigation into metabolic-targeted strategies.
28 Mar 2025	First-line chemo-immunotherapy prognostic factors predicting non-small cell lung cancer (NSCLC) overall survival: Multicentric observational study	Riccardo Ronga	• **Introduction:** In PD-L1 <50% metastatic NSCLC, chemo-immunotherapy with pembrolizumab or nivolumab + ipilimumab is standard, but comparative prognostic insights are limited. • **Methodology**: Retrospective multicenter analysis of 363 patients stratified by treatment regimen, PD-L1 status, histology, metastatic sites, NLR, KRAS mutations, age, and sex; Kaplan-Meier and Cox regression used. • **Results:** No OS difference between regimens. Bone (6.4 vs 13.2 mo; p=0.0002) and liver metastases (4.9 vs 11.4 mo; p=0.011) worsened OS. High NLR (≥3.8) predicted poor outcomes. KRAS mutations had no prognostic effect. • **Conclusions:** Bone/liver metastases and elevated NLR are strong negative prognostic factors in PD-L1 <50% NSCLC treated with chemo-immunotherapy.

Notable Presentations at ELCC 2025
Biomarkers / Diagnostics Screening (1/2)

Date	Title	Author	Summary
28 Mar 2025	European results from the 2024 International Association for the Study of Lung Cancer (IASLC) global survey on biomarker testing	Matthew P. Smeltzer	• **Introduction:** Biomarker testing is critical for optimizing lung cancer treatment, but uptake remains suboptimal. This study explores current practices and barriers to biomarker testing in Europe. • **Methodology**: A global survey, including quantitative, qualitative, and in-depth interview methods, was conducted with lung cancer providers across 31 European countries, analyzed using chi-square tests. • **Results:** 97% of European respondents recognize the significant impact of biomarker testing on outcomes. Barriers include cost (23%), time (13%), and sample quality (13%). 56% report reflex testing as standard, higher than other regions (32%). • **Conclusions:** European practices are more favorable than global averages, but challenges persist in optimizing biomarker testing. Data will guide best practice implementation and global policy**.**
28 Mar 2025	Natural language processing (NLP)-driven analysis of metastatic non-small cell lung cancer (mNSCLC) outcomes: A real-world (RW) study within Israel's universal healthcare	Renana Barak	• **Introduction:** Immune checkpoint inhibitors (ICI) have transformed mNSCLC treatment. This study evaluates real-world outcomes in patients without actionable genomic alterations in Israel. • **Methodology**: Data from mNSCLC patients treated with first-line ICI (2019–2024) was analyzed using NLP tools and survival data from the Ministry of Interior • **Results:** Median overall survival (mOS) was 11 months. ICI monotherapy had better mOS than combination therapy (14 vs 10 months, $p < 0.05$), with PD-L1 levels influencing outcomes • **Conclusions:** Real-world ICI outcomes are less favorable than clinical trials. Monotherapy shows better survival, warranting further research to enhance outcomes.

Notable Presentations at ELCC 2025
Biomarkers / Diagnostics Screening (2/2)

Date	Title	Author	Summary
28 Mar 2025	Innovative liquid biopsy for lung cancer early detection: A proof-of-concept study	Abed Agbarya	• **Introduction:** Low-dose CT screening improves lung cancer mortality but faces challenges like low specificity and poor adherence. Liquid biopsy offers a promising non-invasive alternative for diagnosis and monitoring. • **Methodology**: A sensitive blood test was developed, utilizing cell-free DNA extraction, fluorescent labeling of epigenetic marks, and hybridization on a custom microarray to identify cancer-specific signatures. • **Results:** In 103 individuals, the test achieved 93.1% sensitivity, 93.5% specificity, and an AUC of 0.943. It differentiated adenocarcinoma from squamous cell carcinoma with 82.5% sensitivity and 87.5% specificity. • **Conclusions:** This epigenetic-based blood test shows promise for lung cancer detection and classification. Prospective trials will validate these findings.
28 Mar 2025	Molecular diagnosis of lung cancer via ctDNA and ctRNA detection on bronchoscopic fluid: A bicenter prospective study (BiLiBro)	Gabrielle Danino	• **Introduction:** ctDNA is used for targeted therapy in metastatic lung cancer. This study evaluates ctDNA and ctRNA accuracy in bronchoscopic fluid for NSCLC mutation detection. • **Methodology**: A bicenter study in France analyzed ctDNA and ctRNA using next-generation sequencing on bronchoscopic fluid, with histology as the reference. • **Results:** ctDNA sensitivity was 81.3% with 100% specificity. Sensitivity was higher in advanced stages, larger tumors, and bronchus sign presence. • **Conclusions:** Bronchoscopic liquid biopsy is a promising, minimally invasive diagnostic tool for NSCLC, especially in advanced disease.

Notable Presentations at ELCC 2025
Early-stage / Resectable / Adjuvant / Neoadjuvant (1/3)

Date	Title	Author	Summary
28 Mar 2025	Neoadjuvant lazertinib therapy guided by EGFR mutation detection in BALF for resectable lung cancer: Prospective real-world phase II study	In Ae Kim	• **Introduction:** Exosome-based bronchoalveolar lavage fluid (ExoBAL) liquid biopsy has shown high sensitivity for EGFR genotyping in advanced NSCLC. This study evaluates ExoBAL's performance in detecting EGFR mutations and therapeutic response to neoadjuvant lazertinib in resectable NSCLC. • **Methodology**: A phase II study enrolled patients with ExoBAL-confirmed EGFR mutations, receiving 9 weeks of neoadjuvant lazertinib, followed by surgery and adjuvant treatment for stage II or higher. • **Results:** The objective response rate (ORR) was 67.6%, with a 97.1% R0 resection rate. The EGFR genotyping concordance rate was 97.0%, and the downstaging rate was 55.8%. • **Conclusions:** ExoBAL is a promising non-invasive method for detecting EGFR-mutant NSCLC and expanding the use of neoadjuvant EGFR-TKIs.
28 Mar 2025	Perioperative immunotherapy treatment in resectable non-small cell lung cancer with KRAS mutation: A real-world study (Peri-R-01)	Hua Zhong	• **Introduction:** Perioperative immunotherapy has shown efficacy in resectable NSCLC, but its benefits for KRAS-mutant NSCLC remain unclear. This study examines the role of perioperative immunotherapy in KRAS-mutated NSCLC patients. • **Methodology**: The Peri-R study (NCT06610240) analyzed clinical characteristics and outcomes in KRAS-mutant NSCLC patients who received neoadjuvant immune checkpoint inhibitors (ICIs) and underwent radical surgery between 2020-2024. • **Results:** 52 patients were analyzed, with 38.4% achieving pathological complete response (pCR). The 2-year event-free survival rate was 70.7%. PD-L1 expression ≥50% correlated with better outcomes. • **Conclusions:** Perioperative immunotherapy in KRAS-mutant NSCLC shows promising efficacy, with ongoing follow-up to assess long-term outcomes.

Notable Presentations at ELCC 2025
Early-stage / Resectable / Adjuvant / Neoadjuvant (2/3)

Date	Title	Author	Summary
28 Mar 2025	Comparative investigation of neoadjuvant chemoimmunotherapy versus perioperative (chemo)immunotherapy in resectable non-small cell lung cancer: A real-world retrospective study	Yun Fan	• **Introduction:** Recent trials have shown chemoimmunotherapy benefits for resectable NSCLC in neoadjuvant and perioperative settings, but direct comparisons are lacking. This study compares the efficacy of neoadjuvant chemoimmunotherapy (NT) versus perioperative chemoimmunotherapy (PT). • **Methodology**: A retrospective study at Zhejiang Cancer Hospital included 341 patients with stages IB-IIIB NSCLC, receiving NT or PT from 2019-2021. Propensity score matching adjusted for confounding variables, with Kaplan-Meier and Cox regression models assessing treatment effects on survival. • **Results:** PT showed superior event-free survival (EFS) and overall survival (OS) compared to NT. Notably, PT was more effective in patients without pathological complete response (pCR). • **Conclusions:** PT significantly improves survival prognosis for resectable NSCLC, especially in patients without pCR.
28 Mar 2025	Adjuvant aumolertinib for resected EGFR-mutated stage IA2-IIIA non-small cell lung cancer: Updated results from a multiple-center real-world experience	Qingyi Zhang	• **Introduction:** Aumolertinib, a third-generation EGFR-TKI, shows strong efficacy in EGFR-mutated NSCLC. This study assesses its long-term efficacy and safety as adjuvant therapy in postoperative patients. • **Methodology**: Patients with stage IA2-IIIA EGFR-mutated NSCLC received aumolertinib for 1-3 years post-surgery. Disease-free survival (DFS), safety, and tolerability were evaluated. • **Results:** The 4-year DFS rate was 74.1%, with stage I patients at 82.7%. High-risk recurrence factors increased recurrence risk. No grade ≥3 adverse events were reported. • **Conclusions:** Aumolertinib is effective and safe as adjuvant therapy, with ongoing follow-up for additional survival data.

Notable Presentations at ELCC 2025
Early-stage / Resectable / Adjuvant / Neoadjuvant (3/3)

Date	Title	Author	Summary
28 Mar 2025	Adjuvant platinum-based chemotherapy role in stage II-IIIa EGFR-mutated lung cancer: An IPD meta-analysis of phase III randomized controlled trial	Rome, Italy	• **Introduction:** Adjuvant chemotherapy's survival benefits in EGFR-mutated lung cancer patients undergoing Osimertinib are underexplored. This study evaluates its role through an IPD meta-analysis. • **Methodology**: Data from phase III trials comparing chemotherapy to placebo in EGFR-mutated lung cancer patients were analyzed, focusing on disease-free survival (DFS) and overall survival (OS). • **Results:** The 3-year DFS was 37% with chemotherapy versus 32.2% with placebo (HR 0.9, p = 0.377). The 3-year OS was 82.8% versus 81.2% (HR 0.85, p = 0.421). • **Conclusions:** Adjuvant chemotherapy has limited impact on recurrence in EGFR-mutated lung cancer
28 Mar 2025	Adjuvant novel tyrosine kinase inhibitors with or without platinum-based chemotherapy for resectable oncogene-addicted NSCLC: An IPD meta-analysis of phase III randomized clinical trials	Rome, Italy	• **Introduction:** This study examines whether combining platinum-based chemotherapy (PCT) with novel tyrosine-kinase inhibitors (TKIs) improves survival in EGFR-mutated (EGFRm) and ALK-rearranged (ALKr) completely resected NSCLC compared to TKI monotherapy. • **Methodology**: An IPD meta-analysis of phase III trials was conducted, comparing disease-free survival (DFS) in patients treated with TKI alone or TKI plus PCT. • **Results:** The 2-year DFS was 91.9% for TKI alone and 89% for TKI plus PCT (HR 1.52, p = 0.145). PCT improved DFS in stage IIIA patients compared to placebo. • **Conclusions:** Combining PCT with novel TKIs does not offer a survival advantage over TKI monotherapy in the adjuvant setting.

Notable Presentations at ELCC 2025 Immunotherapy (1/3)

Date	Title	Author	Summary
27 Mar 2025	A phase II trial of tobemstomig (tobe) + platinum-based chemotherapy (chemo) vs pembrolizumab (pembro) + chemo in patients (pts) with untreated locally advanced or metastatic non-small cell lung cancer (NSCLC)	Ernest Nadal	• **Introduction:** Tobemstomig (tobe) is a novel bispecific antibody targeting PD-1 and LAG-3, evaluated against pembrolizumab (pembro) in combination with chemotherapy in patients with locally advanced or metastatic NSCLC ineligible for surgery or definitive chemoradiotherapy. • **Methodology**: The phase II BO44178 trial randomized patients to receive either tobe + chemo or pembro + chemo for four cycles, followed by maintenance therapy until progression. • **Results:** No improvement in confirmed objective response rate (ORR) or progression-free survival (PFS) was observed with tobe + chemo compared to pembro + chemo. Safety profiles showed higher rates of adverse events with tobe. • **Conclusions:** Tobe + chemo did not show superior efficacy over pembro + chemo in this setting.
28 Mar 2025	Durvalumab with or without tremelimumab plus chemotherapy as first-line treatment for metastatic NSCLC: Results from the phase III POSEIDON extended China cohort	Jie Hu	• **Introduction:** The POSEIDON study (NCT03164616) evaluates the combination of durvalumab (D) and tremelimumab (T) with chemotherapy (CT) versus chemotherapy alone in metastatic NSCLC (mNSCLC). This analysis focuses on patients in China. • **Methodology**: 175 patients with EGFR/ALK wild-type mNSCLC were randomized to D+T+CT, D+CT, or CT alone. Primary endpoints were progression-free survival (PFS) and overall survival (OS). • **Results:** D+T+CT and D+CT showed improved PFS compared to CT (HR 0.56, HR 0.61). OS was numerically better for D+CT, though not statistically significant. Treatment-related adverse events were higher in the combination arms. • **Conclusions:** Efficacy and safety of D+T+CT and D+CT in China are consistent with global POSEIDON results.

Notable Presentations at ELCC 2025
Immunotherapy (2/3)

Date	Title	Author	Summary
28 Mar 2025	Camrelizumab plus chemotherapy as first-line treatment for advanced non-squamous NSCLC with brain metastases: Final overall survival results from the CAP-BRAIN trial	Xue Hou	• **Introduction:** The CAP-BRAIN trial evaluated the combination of camrelizumab, pemetrexed, and carboplatin in patients with advanced non-squamous NSCLC and brain metastases (BMs). This report presents the final overall survival (OS) results. • **Methodology**: Patients with asymptomatic or controlled BMs received four cycles of camrelizumab plus pemetrexed and carboplatin, followed by maintenance therapy with camrelizumab and pemetrexed until progression or unacceptable toxicity. • **Results:** The median OS was 18.4 months. The 2- and 3-year OS rates were 39.2% and 33.4%, respectively. No new safety signals were identified. • **Conclusions:** The final OS results support the use of camrelizumab in combination with pemetrexed and carboplatin for advanced non-squamous NSCLC with BMs
28 Mar 2025	Extended Follow-Up Confirmed Real-World Efficacy and Safety of Cemiplimab Monotherapy in Advanced Non-Small Cell Lung Cancer (NSCLC) with High PD-L1 Expression	Silvia Masini	• **Introduction:** Cemiplimab monotherapy shows favorable safety and efficacy in NSCLC with high PD-L1 expression. This study presents extended follow-up data on its use in advanced NSCLC patients. • **Methodology**: Advanced NSCLC patients (PD-L1 TPS ≥50%) were treated with first-line cemiplimab across 21 centers in Spain. Safety and efficacy were analyzed using log-rank tests and Cox regression models. • **Results:** The median progression-free survival (PFS) was 7.9 months, and median overall survival (OS) was 12.6 months. The overall response rate (ORR) was 56.9%, with 28.7% experiencing immune-related adverse events. • **Conclusions:** Cemiplimab demonstrates a manageable safety profile and efficacy in advanced NSCLC, with poor performance status, stage IV disease, and squamous histology associated with reduced survival.

Notable Presentations at ELCC 2025
Immunotherapy (3/3)

Date	Title	Author	Summary
28 Mar 2025	Efficacy and safety of cadonilimab-based therapies in non-small cell lung cancer patients with progression after immunotherapy	Shaorong Yu	• **Introduction:** Immunotherapy has improved outcomes in NSCLC, but progression after treatment remains a challenge. This study evaluates the efficacy and safety of cadonilimab in patients with advanced or unresectable NSCLC who have progressed after prior immunotherapy. • **Methodology**: A retrospective study of 70 patients treated with cadonilimab alone or in combination with chemotherapy/anti-angiogenic therapy. Adverse events and responses were assessed using standard criteria. • **Results:** The objective response rate (ORR) was 21.43%, with a disease control rate of 74.29%. The median progression-free survival (mPFS) was 2.23 months. Combination with anti-angiogenic therapy improved ORR and mPFS. • **Conclusions:** Cadonilimab combined with anti-angiogenic therapy enhances efficacy, particularly in patients with prior immunotherapy benefit.
28 Mar 2025	Immunotherapy improves clinical outcome in KRAS mutated patients with unresectable NSCLC stage III: A subcohort analysis of the Austrian radio-oncological lung cancer study association regristry (ALLSTAR)	Franz Zehentmayr	• **Introduction:** KRAS mutations (KRASmt) in unresectable NSCLC may present an exception to the general lack of benefit from immune checkpoint inhibition (ICI) in driver mutation-positive patients. This study compares the outcomes of KRASmt patients treated with or without ICI. • **Methodology**: The ALLSTAR registry included 32 KRASmt patients with non-operable NSCLC, treated with chemoradiotherapy (CRT) followed by ICI or not. Clinical outcomes, including overall survival (OS) and progression-free survival (PFS), were compared. • **Results:** The 2-year OS and PFS rates were significantly higher in KRASmt patients who received ICI (84% vs 20%, $p < 0.001$; 75% vs 20%, $p < 0.001$). • **Conclusions:** KRASmt patients benefit from ICI, and radiation doses >66 Gy may improve locoregional control. Immunotherapy should be considered for these patients.

Notable Presentations at ELCC 2025 Radiotherapy (1/3)

Date	Title	Author	Summary
28 Mar 2025	Impact of cardiac substructure dose on cardiotoxicity and overall survival (OS) in early-stage non-small cell lung cancer (ES-NSCLC) patients receiving stereotactic ablative body radiotherapy (SABR): Data from the interim analysis of the LUNG HEART study	Marzia Cerrato	• **Introduction:** The LUNG HEART study investigates the link between radiation doses to heart substructures and cardiotoxicity, as well as overall survival (OS) in ES-NSCLC patients treated with SABR. • **Methodology**: 14 heart substructures and 7 vessels were contoured for dosimetric data. Cardiac events (CEs) were evaluated using CTCAE 5.0, and the Fine and Gray model assessed competing risks of G≥3 CEs. Cox regression analyzed OS associations. • **Results:** Pre-existing heart conditions and higher doses to the left anterior descending coronary artery (LAD) increased G≥3 CEs risk, and higher doses to the coronary trunk correlated with poorer OS. • **Conclusions:** Pre-existing heart disease and higher LAD doses elevate G≥3 CEs and worsen OS in SABR-treated ES-NSCLC patients.
28 Mar 2025	Consolidative stereotactic radiotherapy for oligo-residual non-small cell lung cancer after first-line chemoimmunotherapy: a single-arm, phase 2 trial	ZHENGFEI ZHU	• **Introduction:** This study investigates the efficacy of consolidative stereotactic radiotherapy (SRT) in metastatic, driver mutation-negative NSCLC patients with oligo-residual disease (ORD) after first-line chemoimmunotherapy. • **Methodology**: A single-arm, phase II trial (NCT04767009) enrolled 59 patients who received SRT targeting extracranial and cranial lesions, with ongoing maintenance therapy. The primary endpoint was progression-free survival (PFS), and secondary endpoints included overall survival (OS) and treatment-related adverse events (TRAEs). • **Results:** The median PFS was 29.0 months, and the 2-year OS rate was 88.9%. SRT significantly improved PFS and OS compared to a propensity score-matched cohort. • **Conclusions:** Consolidative SRT shows promising efficacy with manageable toxicities, warranting confirmatory studies.

Notable Presentations at ELCC 2025 Radiotherapy (2/3)

Date	Title	Author	Summary
28 Mar 2025	Exploring hypofractionated thoracic radiotherapy in stage IV NSCLC: Insights from a real-world retrospective study	Sina Mansoorian	• **Introduction:** Hypofractionated radiotherapy (Hypo-RT) has shown promise in metastatic NSCLC, but its integration with immunotherapy and tyrosine kinase inhibitors (TKIs) remains underexplored. This retrospective study examines its impact on survival outcomes in stage IV NSCLC. • **Methodology**: The study analyzed 104 stage IV NSCLC patients treated with Hypo-RT targeting the primary tumor. The primary endpoints were overall survival (OS) and progression-free survival (PFS), with secondary endpoints including local failure-free survival (LFFS) and regional failure-free survival (RFFS). • **Results:** Median OS and PFS were 15.4 and 3.9 months, respectively. Higher biologically effective doses (BED ≥ 58.5 Gy) significantly improved survival. • **Conclusions:** Hypo-RT is effective for metastatic NSCLC, with higher BEDs linked to improved OS and PFS. This emphasizes the need for personalized treatment approaches.
28 Mar 2025	Real-world study of patients with unresectable stage III non-small cell lung cancer treated with chemoradiotherapy followed by durvalumab: Ra-pacific	Luis Basbus	• **Introduction:** Durvalumab's effectiveness in treating stage III unresectable NSCLC in real-world clinical settings is underexplored. This study evaluates durvalumab treatment outcomes post-chemoradiotherapy at Hospital Italiano de Buenos Aires. • **Methodology**: A retrospective cohort study of 42 patients with stage III NSCLC treated with durvalumab from 2020 to 2023. Key outcomes included progression-free survival (PFS) and overall survival (OS). • **Results:** Median PFS was not reached, but 66% remained progression-free at 12 months. PD-L1 <1% and PS ≥2 were associated with worse PFS. Pneumonitis and neurological symptoms caused treatment discontinuation in 10%. • **Conclusions:** Real-world data support durvalumab's effectiveness, aligning with PACIFIC trial results, but highlight toxicity challenges in diverse clinical cohorts.

Notable Presentations at ELCC 2025 Radiotherapy (3/3)

Date	Title	Author	Summary
28 Mar 2025	Four-year outcomes with perioperative toripalimab plus chemotherapy in resectable stage III non-small cell lung cancer (NeoTAP01 study)	Yuheng Zhou	• **Introduction:** The NeoTAP01 trial evaluated the efficacy and safety of perioperative toripalimab plus chemotherapy in resectable stage III NSCLC. This analysis presents 4-year follow-up outcomes to assess the stability of treatment benefits. • **Methodology**: Patients with resectable stage IIIA and IIIB NSCLC received neoadjuvant toripalimab plus chemotherapy, followed by adjuvant toripalimab. The per-protocol (PP) population, consisting of patients who completed at least 2 cycles of neoadjuvant treatment and surgery, was analyzed. • **Results:** The 4-year event-free survival (EFS) and overall survival (OS) rates were 66.7% and 83.3%, respectively. Pathologic complete response (pCR) trended towards better EFS. • **Conclusions:** Toripalimab plus chemotherapy showed sustained long-term benefits, but the adjuvant treatment's effectiveness remains unclear, limited by cohort size.
28 Mar 2025	Pulsed high-dose fractionated radiotherapy combined with enhanced immunotherapy in the treatment of driver gene-negative advanced non-small cell lung cancer: A clinical study	Chuanwang Miao	• **Introduction:** Patients with driver gene-negative advanced NSCLC have limited treatment options after failure of first-line therapies. This study evaluates the efficacy and safety of pulsed high-dose fractionated radiotherapy combined with GM-CSF and tislelizumab. • **Methodology**: 15 patients with stage IV, driver gene-negative NSCLC received radiotherapy, GM-CSF, and tislelizumab. The primary endpoint was objective response rate (ORR), and secondary endpoints included overall survival (OS) and progression-free survival (PFS). • **Results:** The ORR was 40%, and the disease control rate (DCR) was 66.7%. Median PFS was 5.7 months, and median OS was 22.9 months. Mild leukopenia and pneumonia were the most common adverse events • **Conclusions:** This combination therapy demonstrated substantial efficacy and favorable safety in advanced NSCLC, warranting further investigation in larger studies**.**

Notable Presentations at ELCC 2025
Real-world / Observational / Registry (1/3)

Date	Title	Author	Summary
28 Mar 2025	Real-world efficacy and safety of anlotinib in NSCLC previously treated with immune checkpoint inhibitors	Yuchao Dong	• **Introduction:** This study evaluates anlotinib's efficacy and safety in NSCLC patients with ICI resistance. • **Methodology**: A retrospective analysis of 539 NSCLC patients treated with anlotinib or other therapies after prior ICI treatment. Propensity score matching (PSM) compared progression-free survival (PFS) between the groups. • **Results:** Anlotinib-treated patients had a median PFS of 8.8 months, compared to 8.3 months in the other treatments group (HR 0.70, p = 0.041). The objective response rate was 12.6% vs 17.9% (p = 0.200). The disease control rate was similar between groups. • **Conclusions:** Anlotinib shows favorable anti-tumor activity and manageable toxicity in ICI-resistant NSCLC patients.
28 Mar 2025	Comparison of camrelizumab, pembrolizumab, tislelizumab, and sintilimab as first-line treatment in patients with non-small cell lung cancer: A retrospective study	Shaorong Yu	• **Introduction:** This study compares the efficacy and safety of different PD-1 inhibitors (camrelizumab, pembrolizumab, tislelizumab, and sintilimab) as first-line treatments for advanced NSCLC in Chinese real-world clinical practice. • **Methodology**: A retrospective analysis of 452 NSCLC patients treated between January 2019 and June 2023. Progression-free survival (PFS) and adverse events were assessed. • **Results:** No significant differences in objective response rate (ORR) or median PFS were observed among the four PD-1 inhibitors. The ORR ranged from 40.5% to 51%, and the median PFS ranged from 8.51 to 10.97 months. Incidence of immune-related adverse events (irAEs) was similar across treatments. • **Conclusions:** Camrelizumab, pembrolizumab, tislelizumab, and sintilimab show similar efficacy and safety profiles as first-line treatments for advanced NSCLC in Chinese patients.

Notable Presentations at ELCC 2025
Real-world / Observational / Registry (2/3)

Date	Title	Author	Summary
28 Mar 2025	The FIN-EGFR study: A retrospective observational study to investigate the treatment landscape and outcomes of early and advanced stage patients with EGFR mutated non-small cell lung cancer (NSCLC)	Aija Knuuttila	• **Introduction:** This study leverages Finnish hospital data lakes to analyze EGFR-mutated NSCLC patients' demographics, clinical characteristics, treatment paths, and outcomes in Finland. • **Methodology**: A retrospective observational study was conducted using data from two Finnish university hospitals (2017–2023), representing approximately 55% of diagnosed cases in Finland. Kaplan-Meier and Cox regression analyses assessed EGFR mutation incidence, clinical features, and treatment outcomes. • **Results:** The EGFR mutation incidence was 8%, with common mutations being Del19 (40.4%) and L858R (33.0%). Median overall survival for advanced stage patients was 23 months, with survival differences based on mutation type. • **Conclusions:** Survival differences based on EGFR mutations highlight the need for improved therapeutic strategies, especially for ex20ins mutations.
28 Mar 2025	Real-world biomarker testing and treatment patterns in Belgian lung cancer patients: Insights from the AIBED study	Lore Decoster	• **Introduction:** This study analyzes the real-world implementation of lung cancer treatments in Belgium, utilizing electronic health record (EHR) data to understand patient demographics, biomarker testing, and treatment patterns. • **Methodology**: A multicenter secondary data study was conducted using data from five Belgian hospitals (2019–2021), combining structured and unstructured data processed with Natural Language Processing (NLP) to analyze patient cohorts. • **Results:** Data from 1952 patients showed that 87% had NSCLC, with stage IV NSCLC being the largest group (45%). Biomarker testing revealed PD-L1 positivity in 45.6–56.1% and EGFR mutations in 4.8–11.0%. • **Conclusions:** The study highlights gaps in biomarker testing and treatment uptake, providing insights to improve care delivery in lung cancer.

Notable Presentations at ELCC 2025
Real-world / Observational / Registry (3/3)

Date	Title	Author	Summary
28 Mar 2025	Demographics, clinical characteristics and treatment of lung cancer in a developing country: A pilot study in Malaysia	Wen Xuan Lee	• **Introduction:** Lung cancer is the third most common cancer in Malaysia, with a low 5-year survival rate of 11%. This pilot study examines the demographic, clinical, and treatment characteristics of lung cancer (LC) patients in a single tertiary care hospital in Malaysia. • **Methodology**: A retrospective study of 330 LC patients (aged 56–75) at Sunway Medical Centre (2019–2023) was conducted. Data on demographics, clinical features, genomic profiles, and treatments were analyzed. • **Results:** 93% of patients had NSCLC, predominantly adenocarcinoma. Genomic testing identified actionable mutations in 65%, with a high prevalence of EGFR mutations (57%). Immunotherapy use increased from 15% in 2019 to 35% in 2023. • **Conclusions:** This study provides valuable insights into the LC landscape in Malaysia and highlights the need for further research into molecular pathogenesis and treatment strategies.

Notable Presentations at ELCC 2025
Small Cell Lung Cancer (SCLC) (1/3)

Date	Title	Author	Summary
28 Mar 2025	Patterns of disease progression with durvalumab (D) after concurrent chemoradiotherapy (cCRT) in limited-stage small-cell lung cancer (LS-SCLC): Results from ADRIATIC	Suresh Senan	• **Introduction:** The ADRIATIC study's interim analysis revealed that D consolidation improved survival in limited-stage small-cell lung cancer (LS-SCLC) patients. This report explores patterns of disease progression. • **Methodology**: Patients with stage I–III LS-SCLC and no progression post-cCRT were randomized to D, D + tremelimumab, or placebo. Disease progression was categorized as intrathoracic (IT) or extrathoracic (ET). • **Results:** D significantly reduced ET progression, with lower brain/CNS metastasis rates. Time to IT and ET progression was longer in D compared to placebo. • **Conclusions:** D consolidation reduced the rate of ET metastases and prolonged progression-free survival, especially in brain/CNS metastases.
28 Mar 2025	Real-world outcomes in extensive-stage small cell lung cancer treated with first-line serplulimab: The nationwide observational ASTRUM-005R study	Lin Wu	• **Introduction:** This study evaluates the real-world outcomes of serplulimab, an anti-PD-1 mAb, combined with chemotherapy in extensive-stage small cell lung cancer (ES-SCLC). • **Methodology**: A nationwide observational study in China included 635 patients with pathologically confirmed ES-SCLC who received serplulimab as first-line treatment • **Results:** The overall response rate (ORR) was 69.0%, with median progression-free survival (rwPFS) of 8.2 months and median overall survival (OS) of 17.2 months. Liver metastases were associated with worse rwPFS. Adverse events (AEs) occurred in 36.7% of patients, with 12.8% experiencing grade ≥3 AEs. • **Conclusions:** Serplulimab demonstrates real-world efficacy and favorable safety in ES-SCLC, supporting its broader application.

Notable Presentations at ELCC 2025 Small Cell Lung Cancer (SCLC) (2/3)

Date	Title	Author	Summary
28 Mar 2025	Evaluation of durvalumab real-world use and effectiveness in first line extensive-stage small-cell lung cancer: Primary results of the ARSENAL study	Jean Bernard Auliac	• **Introduction:** This study evaluates the real-world effectiveness of durvalumab (D) combined with platinum-etoposide (PE) in patients with extensive-stage small cell lung cancer (ES-SCLC). • **Methodology**: A prospective observational study across 33 French sites analyzed 213 patients treated with D+PE. Primary outcomes included Time to Discontinuation (TTD) and progression-free survival (PFS). • **Results:** The median TTD was 5.6 months, with 6-month TTD and PFS rates of 40.6% and 45.4%, respectively. Grade ≥3 adverse events occurred in 11.6% of patients. Treatment-related discontinuations were primarily due to progression (59.5%). • **Conclusions:** The results align with the CASPIAN trial, confirming the effectiveness of D in clinical practice for ES-SCLC.
28 Mar 2025	Small extracellular vesicle miRNAs as predictive biomarkers for immunochemotherapy efficacy in extensive-stage small cell lung cancer	Wei Zhang	• **Introduction:** This study investigates whether small extracellular vesicle (sEV)-derived microRNAs (miRNAs) could predict immunochemotherapy efficacy in extensive-stage small cell lung cancer (ES-SCLC) patients. • **Methodology**: Serum samples were collected from chemotherapy-naïve ES-SCLC patients treated with chemoimmunotherapy. Differential expression of miRNAs between responders and non-responders was analyzed. Machine learning models, including Extra Trees, were developed for predicting treatment response. • **Results:** Ten candidate miRNAs were identified, with hsa-miR-125a-5p and hsa-miR-150-5p among those most significant. The Extra Trees model achieved an AUC of 0.848, sensitivity of 0.82, and specificity of 0.72. • **Conclusions:** sEV-derived miRNAs show promise as predictive biomarkers for immunochemotherapy outcomes, offering a potential tool for personalized treatment in ES-SCLC.

Notable Presentations at ELCC 2025
Small Cell Lung Cancer (SCLC) (3/3)

Date	Title	Author	Summary
28 Mar 2025	Updated phase II efficacy and safety results of BNT327/PM8002 combined with paclitaxel as second-line (2L) therapy in small cell lung cancer (SCLC)	Ying Cheng	• **Introduction:** This study evaluates the investigational bispecific antibody BNT327, targeting PD-L1 and VEGF-A, combined with paclitaxel as second-line (2L) therapy for small cell lung cancer (SCLC) in patients who progressed on chemotherapy. • **Methodology**: This ongoing, multicenter, phase II study recruited 70 patients, assessing safety and overall response rate (ORR) per RECIST v1.1. Primary endpoints were safety and ORR, with patients receiving BNT327 and paclitaxel for five cycles, followed by maintenance therapy. • **Results:** The confirmed ORR was 41.5%, with a disease control rate of 87.7%, median progression-free survival (PFS) of 5.5 months, and median overall survival (OS) of 14.3 months. • **Conclusions:** BNT327 combined with paclitaxel demonstrates clinical activity as 2L treatment for SCLC, with manageable adverse events. Further studies are ongoing.
28 Mar 2025	Maintenance therapy with fuzuloparib plus adebrelimab for ES-SCLC after first-line induction with fuzuloparib plus adebrelimab and chemotherapy: A prospective, single-arm, phase II clinical study	Huiru Xu	• **Introduction:** This study evaluates the combination of a PARP inhibitor (fuzuloparib) and immune checkpoint inhibitor (ICI, adebrelimab) in treating extensive-stage small cell lung cancer (ES-SCLC), based on previous findings suggesting a synergistic effect between PARP inhibitors and ICIs. • **Methodology**: In this ongoing, single-arm phase II study, 35 patients with ES-SCLC will receive four cycles of induction therapy with adebrelimab, fuzuloparib, carboplatin, and etoposide, followed by maintenance therapy with adebrelimab and fuzuloparib if disease control is achieved. • **Results:** The primary endpoint is progression-free survival at 6 months, with secondary endpoints including overall survival (OS), objective response rate (ORR), duration of response (DoR), and safety. • **Conclusions**: The trial is currently enrolling participants to assess the efficacy and safety of this combination therapy for ES-SCLC.

Key Industry Sponsored Symposia Information

ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (1/6)

Date	Sponsor	Title
26 Mar 2025	MSD	Pioneering thoracic oncology: Advancements, challenges, and integrated care pathways
		Evolving frontiers in early-stage NSCLC treatment: Exploring novel therapeutic pathways and clinical outcomes
		10 years of immunotherapy: What have we learned? Perspectives and practical approaches in mNSCLC management
26 Mar 2025	AstraZeneca & Thermo Fisher Scientific	The next frontier in NSCLC diagnostics: Integrating emerging biomarkers into clinical practice
		Emerging biomarkers: shaping the future of NSCLC testing and clinical integration
		Real-world insights into the analytical performance of next generation sequencing for HER2 mutation detection

ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (2/6)

Date	Sponsor	Title
26 Mar 2025	AbbVie	Where do you c-Met in lung cancer? Antibody-drug conjugates in NSCLC
		All MET aberrations are not created equal
		Exploring antibody-drug conjugates targeting c-Met
27 Mar 2025	Regeneron Pharmaceuticals	A new era: Reshaping the role of immunotherapy in the treatment of NSCLC
		First things first: Identifying novel targets for non-oncogene-driven NSCLC
		Leveraging the therapeutic timeline: Sequencing of ICIs and chemotherapy to derive treatment benefit after initial progression
		Time is ticking: A look at the prevailing unmet needs for second-line strategies in non-oncogene-driven NCSLC

ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (3/6)

Date	Sponsor	Title
27 Mar 2025	AstraZeneca	Choosing the right treatment for patients with EGFRm NSCLC: Current standards of care and future opportunities
		Current standards of care for stage III unresectable EGFRm NSCLC
		First-line treatment of metastatic EGFRm NSCLC: Balancing efficacy and safety
27 Mar 2025	Pfizer	Redefining standards in 1L ALK+ aNSCLC treatment
		Redefining treatment standards for 1L ALK+ aNSCLC
		Optimising the patient experience in 1L ALK+ aNSCLC

ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (4/6)

Date	Sponsor	Title
27 Mar 2025	AstraZeneca	Key advances shaping the future of lung cancer treatment
		Recent advances in the landscape for early-stage lung cancer with no actionable genomic alterations
		Evidence in Practice: Case Discussions in Limited-Stage SCLC and Early-Stage NSCLC
28 Mar 2025	touchIME	Future Perspectives in NSCLC
		Navigating the clinical impact of TROP2-targeting in NSCLC
		Clinical impact of targeting TROP2 in NSCLC
		Clinical utility of TROP2 expression in NSCLC
		Managing ADC toxicities in NSCLC clinical practice
		Future directions for TROP2 in NSCLC

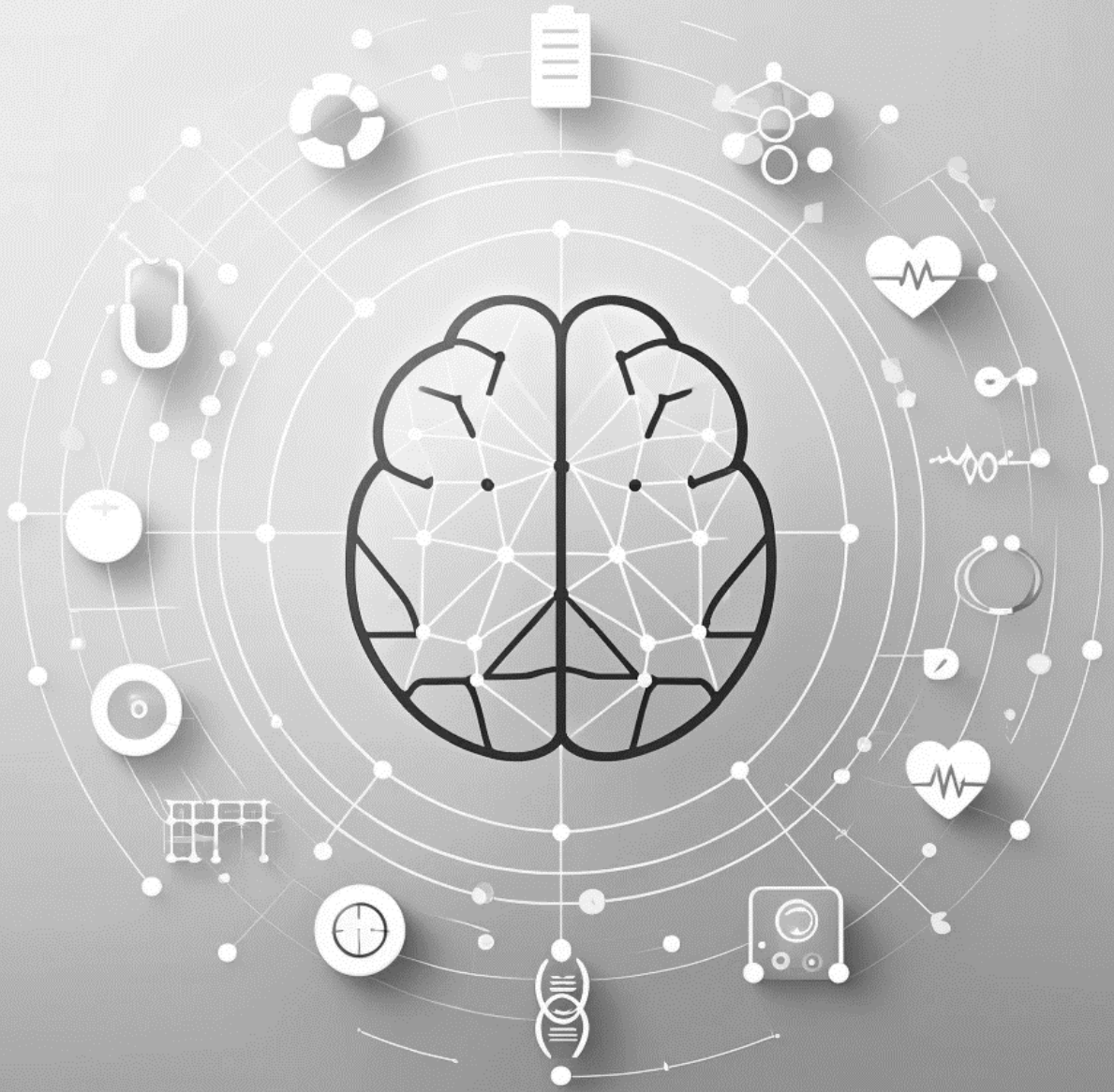
ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (5/6)

Date	Sponsor	Title
28 Mar 2025	Johnson & Johnson	Transforming clinical practice in EGFR-mutant NSCLC
		Guiding treatment options for common EGFR-mutant NSCLC
		Optimising management for patients with common EGFR mutations
28 Mar 2025	Accord Healthcare	Expanding treatment options in extensive-stage small cell lung cancer
		Emerging chemo-immunotherapy data in first-line treatment of ES-SCLC
		Navigating approaches to second-line treatment of ES-SCLC

ELCC 2025 Key Industry Sponsored Symposia/ Sessions Information (6/6)

Date	Sponsor	Title
28 Mar 2025	Pfizer	Promising new targets and ADCs in development for NSCLC
		Are we making progress? Updates on late-stage ADCs in NSCLC
		What's next in NSCLC? New targets and ADC innovations

Noteworthy AI / ML presentations at ELCC 2025



Themes from key AI / ML presentations at ELCC 2025 (1/2)

- **ELCC 2025 will showcase how AI and machine learning are reshaping lung cancer diagnosis, prognosis, and treatment by improving early detection, personalizing therapies, and providing more precise survival predictions, ultimately optimizing clinical decision-making and enhancing patient outcomes**
- Check out the key AI / ML themes at ELCC 2025 below:
- **AI/ML for Lung Cancer Screening:**
  - AI tools like LungSIGHT improve lung cancer screening efficiency, increasing sensitivity and specificity, particularly in high-risk populations, enabling earlier detection and better outcomes
- **Predictive Modeling for Long-Term Survival:**
  - AI models predict long-term survival in NSCLC patients by identifying key prognostic factors, offering personalized treatment insights, especially for younger patients with significant life plans
- **AI in Optimizing Lung Cancer Treatment Decisions:**
  - Machine learning models, such as Adenox, predict molecular targets like EGFR, KRAS, and PD-L1, improving early treatment decisions and ensuring timely, personalized therapies for NSCLC patients

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

- **Early Detection Using Radiomics and Imaging Data:**
  - Dynamic machine learning models that integrate clinical, radiomics, and laboratory data outperform traditional methods, with a higher AUC and diagnostic odds ratio, these models can identify high-risk patients, enhancing early detection efforts and enabling timely, life-saving interventions
- **AI-enhanced prognostication for NSCLC Patients with Brain Metastases:**
  - AI models predict survival in NSCLC patients with brain metastases, improving decision-making for local treatments and offering better outcomes by analyzing clinical and molecular variables
- **Cost-Effectiveness of AI in Lung Cancer Screening:**
  - AI systems like qXR in lung cancer screening show cost-effectiveness by detecting early-stage cancers and preventing premature deaths, becoming cost-neutral after a few years of implementation
- **Translating AI for Personalized Immunotherapy Treatments:**
  - AI models help predict long-term immunotherapy survival in NSCLC, identifying key factors like PD-L1 expression to guide personalized treatment and improve patient outcomes

Noteworthy AI / ML presentations at ELCC 2025

Notable Presentations at ELCC 2025
AI / ML (1/7)

Date	Title	Author	Summary
28 March 2025	Real-world validation of artificial intelligence-defined lung nodule malignancy score (qXR-LNMS) in predicting risk of lung cancer	Deniz Koksal	• **Introduction**: Low-dose computed tomography (LDCT) is recommended for lung cancer screening but is underutilized due to cost and access issues. The CREATE study validates an AI-based lung nodule management system (LNMS) for detecting high-risk incidental pulmonary nodules (IPNs) • **Methodology**: A prospective observational study (CREATE, NCT05817110) involved 713 individuals with IPNs across five countries. The primary outcome was the positive predictive value (PPV) and negative predictive value (NPV) of LNMS against radiologist assessment using LDCT • **Results:** The PPV was 54.1%, and NPV was 93.5%. Subgroup analyses showed consistent results, meeting prespecified thresholds • **Conclusions:** The AI-based LNMS demonstrated utility in triaging IPN risk, optimizing lung cancer screening across diverse healthcare settings
28 March 2025	Enhancing survival prediction in advanced non-small cell lung cancer (aNSCLC): A comparison of artificial intelligence (AI) derived prognostication and RECIST assessments in MYSTIC phase III trial	Omar F. Khan	• **Introduction**: RECIST v1.1 is commonly used to assess overall survival (OS) in clinical trials but faces limitations, including inter-reader variability. AI-derived quantification from CT scans may better predict OS • **Methodology:** IPRO-Δ, a deep learning model trained on serial CT data, analyzed scans from MYSTIC trial subjects. OS differences were compared using Kaplan-Meier methods and hazard ratios (HRs) between RECIST and AI-based categories at week 6 and 12 • **Results:** At both W6 and W12, OS HRs from IPRO-Δ for responders were lower than RECIST, indicating better prognostic separation for IPRO-Δ, especially for identifying responders • **Conclusion:** IPRO-Δ offers superior prognostic ability over RECIST, potentially enhancing clinical benefit prediction in conjunction with RECIST

Notable Presentations at ELCC 2025
AI / ML (2/7)

Date	Title	Author	Summary
28 March 2025	Assessment of an artificial intelligence (AI) solution to support a lung nodule program	K. Adam Lee	• **Introduction**: This study aimed to assess the impact of integrating an FDA-cleared AI solution into a lung nodule program, focusing on clinic volumes, patient management, and outcomes • **Methodology**: The AI solution automated patient identification, tracking, and risk stratification by analyzing CT reports. Patients with identified lung nodules were contacted by a nurse navigator. The study compared clinic metrics and cancer diagnoses before and after AI implementation • **Results:** Post-AI, new patient visits increased from 12.4 to 16.9 per month. Invasive procedures rose from 5.8 to 7.6 per month. Early-stage diagnoses (Stage I) increased from 50% to 63% • **Conclusions:** AI integration enhanced clinic volume and early lung cancer detection, improving patient outcomes
28 March 2025	An innovative deep learning method for automated PD-L1 expression assessment in non-small cell lung cancer	Semir Vranic	• **Introduction**: PD-L1 expression is crucial for determining eligibility for anti-PD-1/PD-L1 therapies in non-small cell lung cancer (NSCLC). This study introduces a deep learning-based framework to automate and improve the accuracy of measuring PD-L1 expression, enhancing Tumor Proportion Score (TPS) reliability • **Methodology:** The framework involved three steps: locating tumor regions, segmenting them, and detecting cancer cell nuclei. It used a dataset of 66 NSCLC tissue samples, employing a hybrid human-machine approach. Several deep learning models (EfficientNet, Inception, Vision Transformer) were trained for classification and segmentation tasks, evaluated using precision, recall, F1-score, and Dice Similarity Coefficient (DSC) • **Results:** The Vision Transformer classifier achieved an F1-score of 97.54%, with segmentation by DeepLabV3+ yielding a DSC of 83.47%. The predicted TPS strongly correlated with pathologist-assessed TPS (r = 0.9635) • **Conclusion:** This deep learning framework demonstrates strong potential for automating TPS evaluation, offering precise, efficient, and cost-effective assessment of PD-L1 expression in NSCLC

Notable Presentations at ELCC 2025
AI / ML (3/7)

Date	Title	Author	Summary
28 March 2025	Machine Learning-Based Prediction of Survival Prognosis for Treated NSCLC Patients: Insights from Finnish Real-World Data	Ville Koistinen	• **Introduction**: Lung cancer, particularly non-small cell lung cancer (NSCLC), remains the leading cause of cancer-related deaths globally. Despite treatment advances, survival outcomes are poor, highlighting the need for effective prognostic models • **Methodology**: The study involved 2,093 NSCLC patients treated at Helsinki University Hospital between 2013-2023. A Random Survival Forest model was trained on clinical variables (e.g., smoking status, histology, PD-L1, metastatic status, treatments) to predict survival, evaluated by area under the curve (AUC) at various follow-up points • **Results:** The model achieved an average AUC of 80% on validation data, with stable performance across time points. Key factors influencing survival included metastatic status, TNM values, treatment types, and resectable status • **Conclusions:** A robust machine learning-based model was developed, achieving strong predictive performance and identifying critical factors impacting NSCLC survival
28 March 2025	Preliminary results of LC-SHIELD study: Lung cancer screening in high risk non-smokers with artificial intelligence device	Siu Ching M. Li	• **Introduction**: Lung cancer is prevalent among never smokers in Asia, and screening with low-dose computed tomography (LDCT) faces challenges due to radiologist shortages and cost. The LC-SHIELD study evaluates the feasibility of using AI for lung cancer screening in high-risk non-smokers • **Methodology:** Non-smokers aged 50-75 with a family history of lung cancer were enrolled. LDCT images were analyzed by LungSIGHT, an AI-assisted software for lung nodule detection. Subjects with nodules ≥5 mm were AI-positive and referred for formal radiologist assessment. Sensitivity and specificity of AI were compared to radiologist assessments • **Results:** 273 subjects were enrolled. The AI system showed sensitivity and specificity of 81% and 85% in the fine-tuning cohort and 78% and 82% in the validation cohort, respectively. Three cancer cases were diagnosed, and six had suspicious nodules • **Conclusion:** AI-assisted lung cancer screening is feasible in high-risk non-smokers, with high sensitivity and specificity for nodule detection. The approach may enhance screening efficiency

Notable Presentations at ELCC 2025
AI / ML (4/7)

Date	Title	Author	Summary
28 March 2025	Dynamic machine learning for early lung cancer identification using longitudinal clinical and laboratory data	Ye Wenjun	• **Introduction**: Early detection of lung cancer is crucial for improving outcomes, but most cases are diagnosed at advanced stages. This study aims to enhance early detection by using a dynamic machine learning model for high-risk lung cancer identification in asymptomatic individuals • **Methodology**: Clinical and laboratory data from 11,903 participants were analyzed, with chest CT scans and radiomics-based AI software detecting high-risk pulmonary nodules. The performance of the dynamic machine learning model was compared to the mPLCOm2012 and NCCN risk models using AUC, sensitivity, and diagnostic odds ratio (OR) • **Results**: The dynamic machine learning model outperformed the mPLCOm2012 and NCCN models, achieving an AUC of 0.88, sensitivity of 58.2%, and a diagnostic OR of 26.5%. The mPLCOm2012 and NCCN models had AUCs of 0.64 and 0.60, respectively, with much lower sensitivity • **Conclusions**: The dynamic machine learning model demonstrated superior performance over standard screening criteria and other models, highlighting its potential for early lung cancer detection through dynamic laboratory data
28 March 2025	Early lung cancer detection using artificial intelligence on chest X-rays: The budget impact of implementing incidental pulmonary nodule detection	Bert Sloof	• **Introduction**: Lung cancer survival rates are low due to late-stage diagnosis, particularly in low and middle-income countries (LMICs). Early detection using AI, such as qXR® for incidental pulmonary nodule detection on chest X-rays, could lead to earlier diagnoses, improving outcomes with fewer resources • **Methodology**: A budget impact model with a five-year time horizon was developed to assess the cost-effectiveness of implementing qXR in Vietnam. A decision-tree model compared the number of lung cancer diagnoses and stage distribution between qXR and the current diagnostic process • **Results**: The model predicts an additional 3,155 lung cancer diagnoses and 4,742 premature deaths prevented. Initial increased expenditures from additional diagnoses are offset by savings due to earlier-stage treatment in subsequent years • **Conclusions**: After five years, qXR implementation becomes cost-neutral, offering a cost-effective solution for early lung cancer detection in Vietnam. The model will be adapted for use in other countries

Notable Presentations at ELCC 2025
AI / ML (5/7)

Date	Title	Author	Summary
28 March 2025	Transcriptome data-based prognosis prediction model for lung adenocarcinoma using an image deep learning approach	Hsuanyu Chen	• **Introduction**: Lung adenocarcinoma treatments like EGFR TKIs and ICIs have improved patient outcomes but still face challenges such as drug resistance and limited survival. This study proposes a novel prognosis prediction model using whole transcriptome data analyzed through an image-based deep learning method • **Methodology**: Four cohorts were analyzed (RNA-seq data: training cohort n=391, three validation cohorts n=954 combined). RNA-seq data were transformed into images for analysis using Convolutional Neural Networks (CNN) without feature selection. The CNN model was trained on the training cohort and validated on separate testing and external cohorts • **Results**: The image transformation process enabled effective CNN model training. High-risk patients in the training cohort had significantly shorter survival. Prediction accuracies were 0.71, 0.81, and 0.92 for training, testing, and validation subsets, respectively, with external cohorts showing similar results • **Conclusions**: This image-based deep learning method offers a novel approach to prognostic modeling, capturing comprehensive transcriptomic data and potentially enhancing molecular guidance in lung cancer treatment
28 March 2025	Machine learning-assisted metabolomics for development model of predicting 1-year overall survival in lung cancer patients with malignant pleural effusion	Wang Sufei	• **Introduction**: Malignant pleural effusion (MPE) in lung cancer patients is associated with poor prognosis, with survival prediction remaining a challenge. This study aims to develop machine-learning models based on metabolomics to diagnose MPE and predict 1-year mortality in these patients • **Methodology**: The study involved two cohorts: a discovery cohort (140 participants) and an independent validation cohort (69 participants). After untargeted metabolomic analysis, machine learning and logistic regression were used to identify metabolites linked to MPE diagnosis and 1-year mortality. The algorithms were tested in the validation cohort, and cell line studies confirmed the functions of key metabolites • **Results**: Seventy-one metabolites were significantly altered between MPE and benign pleural effusion (BPE) groups. Additionally, 26 metabolites differed between surviving and non-surviving groups, with significant changes in arginine biosynthesis and phenylalanine metabolism. Palmitic acid was found to inhibit lung adenocarcinoma cell proliferation • **Conclusions**: Machine learning-based metabolomics models outperformed existing methods in predicting 1-year mortality in lung cancer patients with MPE, providing a promising tool for clinical prognosis

Notable Presentations at ELCC 2025
AI / ML (6/7)

Date	Title	Author	Summary
28 March 2025	Adenox: A machine learning model to predict molecular targets in non-small cell lung cancer	Melike Comert	• **Introduction**: Identifying molecular targets in non-small cell lung cancer (NSCLC) is crucial for treatment selection, but delays in obtaining molecular test results can hinder timely therapy. This study develops "Adenox," a machine learning model to predict molecular targets using clinical features before test results are available • **Methodology**: The study included 281 NSCLC patients, with clinical data grouped into demographics, imaging, laboratory, and pathology results. Predictive models were developed using Logistic Regression and Random Forest, and performance was assessed with ROC analysis • **Results**: The model showed high accuracy for predicting EGFR (AUC = 0.887), ALK (AUC = 0.798), KRAS (AUC = 0.674), PD-L1 (AUC = 0.679), and ROS1 (AUC = 0.911), with varying sensitivity and specificity across mutations • **Conclusions**: The Adenox model effectively predicts molecular target mutations in NSCLC, potentially improving early treatment decisions and patient outcomes
28 March 2025	Transformer-based AI approach to unravel long-term, time-dependent prognostic complexity in patients with advanced NSCLC and PD-L1 ≥50%: Insights from the pembrolizumab 5-year global registry	Alessio Cortellini	• **Introduction**: Long-term survival in advanced NSCLC patients treated with first-line pembrolizumab is emerging as a challenge to traditional cancer prognostication paradigms. Non-cancer-related factors and time-dependent trends necessitate advanced analytical frameworks for accurate prognostication • **Methodology**: The Pembro-real 5Y registry, a global real-world dataset of 1,050 patients, was analyzed using ridge regression and a transformer-based AI model (NAIM). The models assessed risk factors and survival at various time points, including 5-year survival • **Results**: Ridge regression identified ECOG-PS ≥2, age, and metastatic burden as key risk factors. NAIM robustly handled missing data, revealing time-dependent trends. Early mortality was dominated by acute factors, while long-term outcomes were influenced by systemic health factors. Unexpectedly, dyslipidemia was protective • **Conclusions**: The analysis highlights dynamic, nonlinear prognostication trends and emphasizes the need for holistic, long-term management strategies in NSCLC. The findings suggest evolving disease dynamics and the importance of considering host-tumor interplay in patient outcomes

Notable Presentations at ELCC 2025
AI / ML (7/7)

Date	Title	Author	Summary
28 March 2025	Application of artificial intelligence: Machine learning for survival prediction in non-small cell lung cancer with brain metastases	Julia Giner	• **Introduction**: Brain metastases significantly worsen the prognosis for NSCLC patients, yet these patients are often excluded from clinical trials, limiting treatment insights. This study aimed to develop a machine-learning model to predict survival in NSCLC patients with brain metastases and evaluate the impact of local treatments • **Methodology**: A retrospective cohort of 97 NSCLC patients with brain metastases was augmented with synthetic data (n=470). Predictive models, including Decision Trees, Random Forest, and Deep Neural Networks, were trained on 38 clinical and molecular variables. Model performance was evaluated using accuracy, sensitivity, F1-score, and AUC-ROC • **Results**: The Random Forest model with 100 trees outperformed other models (AUC-ROC: 0.7601, F1-score: 0.8188). Key predictors included ECOG performance status and EGFR mutations. Local treatments for brain metastases were associated with improved survival • **Conclusions**: Random Forest models effectively predict survival in NSCLC patients with brain metastases, supporting clinical decision-making. However, the small sample size and reliance on synthetic data necessitate further validation in larger cohorts
28 March 2025	AI-based prediction of long-term survival in NSCLC patients treated with immunotherapy: Insights from the multicentric APOLLO11 study	Vanja Miskovic	• **Introduction**: Predicting long-term efficacy of immunotherapy (IO) in NSCLC is critical for personalized treatment, especially for younger patients. This study explores machine learning (ML)-based models to predict overall survival (OS) and identify long-term survivors using real-world clinical and laboratory data • **Methodology**: Data from 1,031 NSCLC patients in the APOLLO11 trial (NCT05550961) were analyzed. Cox-ML and survival ML models evaluated OS, while classification models predicted long-term survival (OS ≥24 months). SHAP analysis identified key survival predictors • **Results**: The best models (Cox-ML and Extra Survival Trees) achieved a c-index of 0.7 and 0.68, respectively. High ECOG PS, pleural effusion, liver/bone metastases, PD-L1 negative, and squamous histology were linked to higher risk. Low ECOG PS, younger age, high lymphocyte count, and low NLR predicted long-term survival • **Conclusions**: ML models, using clinical and laboratory data, effectively predict long-term survival in NSCLC IO patients, providing valuable insights for personalized treatment strategies and improving co-decision-making between clinicians and patients

Strategic Insights and Strategy Development is our focus