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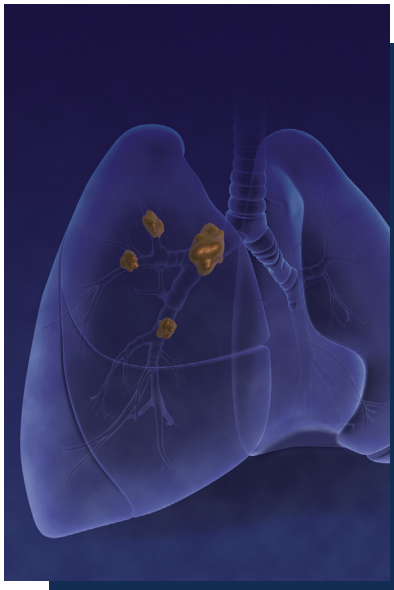

Illustration by Irin Moore

CLINICAL Lung Cancer

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Clinical Commentary

Original Studies

82 Impact of Exon 19 Deletion Subtypes in *EGFR*-Mutant Metastatic Non–Small-Cell Lung Cancer Treated With First-Line Tyrosine Kinase Inhibitors

Sabrina Rossi, Luca Toschi, Giovanna Finocchiaro, Vincenzo Di Noia, Maria Bonomi, Eleonora Cerchiaro, Giovanni Luca Ceresoli, Giordano Domenico Beretta, Ettore D'Argento, Armando Santoro

Patients affected by oncogene-addicted metastatic non–small-cell lung cancer harboring the uncommon epidermal growth factor receptor (*EGFR*) mutation seem to have similar survival outcomes compared to those with common *EGFR* mutations and have disease that responds either to gefitinib or afatinib.

88 Association of Tumor Mutational Burden With DNA Repair Mutations and Response to Anti–PD-1/PD-L1 Therapy in Non–Small-Cell Lung Cancer

Young Kwang Chae, Andrew A. Davis, Kirtee Raparia, Sarita Agte, Alan Pan, Nisha Mohindra, Victoria Villaflor, Francis Giles

Tumor mutational burden (TMB) has emerged as a biomarker for response to immune checkpoint blockade in clinical trials. We broadened the potential impact of TMB by evaluating the utility of commercial comprehensive genomic profiling in non–small-cell lung cancer in clinical practice. We analyzed 72 patients and 34 treated with anti–programmed cell death 1/programmed death ligand 1 therapy, with higher TMB predicting longer overall survival.

97 Pneumonectomy in Stage IIIA-N2 NSCLC: Should It Be Considered After Neoadjuvant Chemotherapy?

Monica Casiraghi, Juliana Guarize, Alberto Sandri, Patrick Maisonneuve, Daniela Brambilla, Rosalia Romano, Domenico Galetta, Francesco Petrella, Roberto Gasparri, Cesare Gridelli, Filippo De Marinis, Lorenzo Spaggiari

This study aims to analyze the outcome of patients with stage IIIA-N2 non–small-cell lung cancer who underwent pneumonectomy to prove its safety and feasibility, in particular after induction chemotherapy. Based on the acceptable morbidity and mortality rate and the long-term survival, pneumonectomy should not be excluded for selected patients as a matter of principle.

107 Stereotactic Body Radiotherapy for Early-Stage Multiple Primary Lung Cancers

John Nikitas, Todd DeWees, Sana Rehman, Chris Abraham, Jeff Bradley, Cliff Robinson, Michael Roach

Outcomes of patients with early-stage multiple primary lung cancers (MPLC) were reviewed from a prospective database at a high-volume institution. Compared to patients receiving a single course of stereotactic body radiotherapy (SBRT), MPLC patients receiving multiple courses of SBRT or receiving surgery followed by SBRT had no significant detriment in survival, freedom from disease progression, or toxicity.

117 Prognostic Significance of Total Lymphocyte Count, Neutrophil-to-lymphocyte Ratio, and Platelet-to-lymphocyte Ratio in Limited-stage Small-cell Lung Cancer

Ryoko Suzuki, Xiong Wei, Pamela K. Allen, James D. Cox, Ritsuko Komaki, Steven H. Lin

We sought markers of survival and disease control among patients treated for limited-stage small-cell lung cancer. High pretreatment total lymphocyte count was linked with superior (and high neutrophil-to-lymphocyte and platelet-to-lymphocyte ratios with inferior) median and 2-year overall survival, findings confirmed in multivariate Cox regression. Baseline lymphopenia was an indicator of poor prognosis in patients with limited-stage small-cell lung cancer.

124 Dynamic Monitoring and Predictive Value of Circulating Tumor Cells in *EGFR*-Mutated Advanced Non–Small-Cell Lung Cancer Patients Treated With First-Line *EGFR* Tyrosine Kinase Inhibitors

Tao Jiang, Jing Zhao, Chao Zhao, Xuefei Li, Jiqiao Shen, Juan Zhou, Shengxiang Ren, Chunxia Su, Caicun Zhou, Mary O'Brien

We prospectively investigated the dynamic monitoring and predictive value of circulating tumor cells (CTCs) in epidermal growth factor receptor (*EGFR*)-mutated advanced non–small-cell lung cancer (NSCLC) patients treated with first-line *EGFR* tyrosine kinase inhibitors (TKIs). Folate receptor–positive CTC counts can be used for both the dynamic monitoring and prediction of outcome in *EGFR*-mutated NSCLC patients treated with *EGFR*-TKIs, which could serve as an alternative or supplement to computed tomographic scanning.

Current Trial Reports

Available Exclusively Online at www.clinical-lung-cancer.com

e171 De Novo MET Amplification in Chinese Patients With Non–Small-Cell Lung Cancer and Treatment Efficacy With Crizotinib: A Multicenter Retrospective Study

Zhengbo Song, Hong Wang, Zongyang Yu, Peihua Lu, Chunwei Xu, Gang Chen, Yiping Zhang

We investigated the clinicopathologic characteristics, treatment, and prognosis of non–small-cell lung cancer patients with de novo mesenchymal–epithelial transition (MET) amplification. The results demonstrated that patients with MET amplification had a trend toward a high prevalence of the solid predominant subtype of adenocarcinoma and of brain metastases. Patients with de novo MET amplification benefit from crizotinib treatment, especially those with high-level amplification.

e177 High Receipt of Statins Reduces the Risk of Lung Cancer in Current Smokers With Hypercholesterolemia: The National Health Insurance Service–Health Screening Cohort

Yu-Jin Kwon, Na-Young You, Jae-Woo Lee, Joungyoun Kim, Hee-Taik Kang

Recent studies have presented conflicting data on the effect of the receipt of statins on lung cancer risk. This current study found that high statin receipt could prevent lung cancer in Korean men with hypercholesterolemia, especially those who are current smokers. A better understanding of statin receipt in the effects of lung cancer risk according to smoking status will help clinicians.

e186 Activity of EGFR TKIs in Caucasian Patients With NSCLC Harboring Potentially Sensitive Uncommon EGFR Mutations

Antonio Passaro, Arsela Prelaj, Laura Bonanno, Marcello Tiseo, Alessandro Tuzi, Claudia Proto, Rita Chiari, Danilo Rocco, Carlo Genova, Claudio Sini, Diego Cortinovis, Sara Pilotto, Lorenza Landi, Chiara Bennati, Andrea Camerini, Luca Toschi, Carlo Putzu, Giulio Cerea, Gianluca Spitaleri, Federico Cappuzzo, Filippo de Marinis

Uncommon epidermal growth factor receptor (EGFR) mutations reported in non–small-cell lung cancer, accounting approximately 10%-15% of all EGFR mutations, are a heterogeneous group characterized by different clusters: exon 20 insertion and mutations, exon 18 mutations, and complex mutations. Although available data confirming the intrinsic resistance of exon 20 insertions to EGFR tyrosine kinase inhibitors (TKIs) of first- and second-line generation, data about exon 18 and complex mutations are suggesting the activity of EGFR TKIs. In this clinical study, we showed exon 18 and EGFR complex mutations might be considered sensitive uncommon mutations, showing interesting survival results.

e195 The Association Between Imaging Features of TSCT and the Expression of PD-L1 in Patients With Surgical Resection of Lung Adenocarcinoma

Tong Wu, Fei Zhou, Adiilah K. Soodeen-Lalloo, Xing Yang, Yingran Shen, Xi Ding, Jinpeng Shi, Jie Dai, Jingyun Shi

In this study we identified 350 patients with pathologically confirmed adenocarcinoma. Of 350 specimens, 74 (21.1%) were programmed death-ligand 1-positive. In multivariate analysis, absence of surrounding ground glass opacity ($P = .022$), shape ($P = .008$), pleural indentation ($P = .007$), tumor mean computed tomography value ($P = .004$), and the ratio of consolidation mass to tumor mass ($P = .003$) were significantly associated with programmed death-ligand 1 expression.

e208 Natural Disease History, Outcomes, and Co-mutations in a Series of Patients With *BRAF*-Mutated Non–small-cell Lung Cancer

Nathaniel J. Myall, Solomon Henry, Douglas Wood, Joel W. Neal, Summer S. Han, Sukhmani K. Padda, Heather A. Wakelee

BRAF mutations occur infrequently in non–small-cell lung cancer, and therefore, our understanding of the natural history of tumors harboring these mutations remains limited. In this retrospective study, we report the outcomes, treatment responses, and co-occurring mutations in a series of patients with *BRAF*-mutated non–small-cell lung cancer. In our cohort, survival rates at 2 and 5 years were 56% and 13%, respectively, suggesting more favorable outcomes in a subset of patients.