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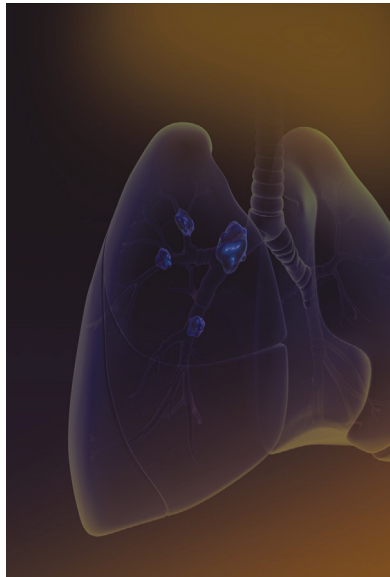


Illustration by Irin Moore

CLINICAL Lung Cancer

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Review

- 89 **Amivantamab, an Epidermal Growth Factor Receptor (EGFR) and Mesenchymal-epithelial Transition Factor (MET) Bispecific Antibody, Designed to Enable Multiple Mechanisms of Action and Broad Clinical Applications**
Byoung Chul Cho, Allison Simi, Joshua Sabari, Smruthi Vijayaraghavan, Sheri Moores, Alexander Spira

Original Studies

- 98 **Prospective Radiologic-Pathologic Correlation of Macroscopic Volume and Microscopic Extension of Nonsolid Lung Nodules on Thin-section CT Images for Sublobar Resection and Stereotactic Radiotherapy Planning**

Arnaud Beddok, Marie-Laure Chabi-Charvillat, Titouan Kennel, Julien de Wolf, Ciprian Pricopi, Perrine Crequit, Nicolas Girard, Joelle Otz, Alexandre Vallée, Elisabeth Longchamp, Edouard Sage, Matthieu Glorion

Minimal invasive surgery and stereotactic body radiation therapy are increasingly used for the treatment of lung nonsolid nodules (NSN). Both modalities planification is based on pretreatment CT. The present study prospectively compared the CT and pathologic data from 23 patients who underwent surgery for NSN. CT did not underestimate the true macroscopic size and microscopic extension of the NSN.

- 107 **Distinct Prognostic Impact of PET Findings Based on Radiological Appearance in Clinical Stage IA Lung Adenocarcinoma**

Masayuki Nakao, Takashi Terauchi, Katsunori Oikado, Yoshinao Sato, Kohei Hashimoto, Junji Ichinose, Yosuke Matsuura, Sakae Okumura, Hironori Ninomiya, Mingyon Mun

We investigated the prognostic significance of PET findings based on the radiological appearance of stage IA lung adenocarcinoma. More aggressive clinicopathological features and significantly worse outcomes were features of PET-positive part-solid nodules (PSNs) in comparison to PET-negative PSNs, but not in solid nodules. Thus, the prognostic impact of PET findings differs between part-solid and solid nodules.

- 114 **Trends in Stage I Lung Cancer**

Aashray Singareddy, Mary Ellen Flanagan, Pamela P Samson, Saiama N Waqar, Siddhartha Devarakonda, Jeffrey P Ward, Brett H Herzog, Anjali Rohatgi, Clifford G. Robinson, Feng Gao, Ramaswamy Govindan, Varun Puri, Daniel Morgensztern

Recent studies have shown an increase in the percentage of patients with early stage lung cancer. Using the National Cancer Database, we confirmed the staging shift with increased percentage of stage I among patients with non-small cell lung cancer but not for those with small cell lung cancer. There were noticeable imbalances according to age, sex, race and insurance status.

- 120 Liquid Biopsy Versus Tissue Biopsy to Determine Front Line Therapy in Metastatic Non-Small Cell Lung Cancer (NSCLC)**
Luis E. Raez, Kayla Brice, Katerine Dumais, Alejandro Lopez-Cohen, Delia Wietecha, Paola A. Izquierdo, Edgardo S. Santos, Hermán W. Powery
 Next generation sequencing (NGS) of tumors to find actionable genes has been the standard of care in metastatic nonsmall cell lung cancer. We demonstrated that liquid biopsy NGS can replace tissue NGS in front line therapy decisions in most of the patients with shorter turnaround time than tissue NGS and similar clinical outcomes.
- 130 The Dutch Lung Cancer Audit-Radiotherapy (DLCA-R): Real-World Data on Stage III Non-Small Cell Lung Cancer Patients Treated With Curative Chemoradiation**
Edith Dieleman, Lisa van der Woude, Rob van Os, Liselotte van Bockel, Ida Coremans, Corine van Es, Katrien De Jaeger, Hans Peter Knol, Willemijn Kolff, Frederike Koppe, Jacqueline Pomp, Bart Reymen, Dominic Schinagl, Femke Spoelstra, Caroline Tissing-Tan, Noelle van der Voort van Zyp, Antoinet van der Wel, Robin Wijsman, Michel Dielwart, Erwin Wiegman, Ronald Damhuis, Jose Belderbos
 In this national lung cancer audit of inoperable NSCLC patients, acute toxicity and 3-month mortality of curative chemoradiation was analyzed. Another important question was whether concurrent chemoradiation for elderly stage III NSCLC patients is safe. The results showed that 3-month toxicity was significantly higher in patients treated with concurrent chemoradiation, higher TNM stage IIIC and poor performance (WHO ≥ 2) patients.
- 137 27-gene Immuno-Oncology (IO) Score is Associated With Efficacy of Checkpoint Immunotherapy in Advanced NSCLC: A Retrospective BC Cancer Study**
David L. Saltman, Matthew G. Varga, Tyler J. Nielsen, Nicole S. Croteau, Heather M. Lockyer, Amit L. Jain, Gregory A. Vidal, David R. Hout, Brock L. Schweitzer, Robert S. Seitz, Douglas T. Ross, David R. Gandara
 Existing biomarkers for ICI treatment in aNSCLC remain suboptimal. DetermalO is a novel tumor immune microenvironment classifier that has previously been associated with ICI response. DetermalO was associated with survival in ICI monotherapy treated patients who were PDL1 $\geq 50\%$ and among a subgroup of PDL1 $> 50\%$ who were PS 2, suggesting that DetermalO may have clinical utility over current biomarkers in aNSCLC.
- 145 Epidemiological and Therapeutic Analyses in Lung Cancer Patients Over 80 Years Old in the Hokushin Region: A Retrospective Hospital Administrative Database Study**
Tomonobu Koizumi, Yoshikazu Nishino, Tomoya Takiguchi, Shintaro Kanda, Kengo Otsuki, Yuriko Tanaka, Reiji Tomita, Taisuke Araki, Ryuji Hayashi, Kazuo Yasumoto, Hidetaka Uramoto, Yasuo Hirono, Tomoe Makino, Mitsutoshi Nakada, Seiji Yano
 Little is known about annual clinical practice in patients with lung cancer over 80 years old. In this analysis, we found several differences in treatment pattern between patients < 80 and ≥ 80 years old. Propensity score matching analysis including sex, stage, and comorbidities indicated that age over 80 years itself is significantly related to the choice of no treatment.
- 153 Frailty Index is Associated with Treatment Decisions for Stage I Non-Small Cell Lung Cancer at a High-Burden Safety-Net Hospital**
Sainath Asokan, Flaminio Pavesi, Ashank Bains, Muhammad M Qureshi, Syona Shetty, Sarah Singh, Kimberley S. Mak, Virginia R. Little, Kei Suzuki
 We analyzed the impact of various factors on treatment modality of 304 patients with stage I non-small cell lung cancer (NSCLC) at a safety-net hospital. Patient frailty, assessed via the Memorial Sloan Kettering frailty index (MSK-FI), was predictive of treatment modality in our patient population and may thus be a helpful tool in risk stratifying patient management.
- 165 The Impact of Estrogen Receptor Expression on Mutational Status in the Evolution of Non-Small Cell Lung Cancer**
Yoko Tani, Hiroyasu Kaneda, Yasuhiro Koh, Akihiro Tamiya, Shunichi Isa, Akihito Kubo, Koichi Ogawa, Yoshiya Matsumoto, Kenji Sawa, Naoki Yoshimoto, Shigeki Mitsuoka, Tomoya Kawaguchi
 The impact of ER expression on mutational status was examined in non-small cell lung cancer using a published molecular epidemiology study in Japan. Sample size was 876 cases. ER-positive status was associated with EGFR mutations and a lower frequency of mutations in TP53 and CTNNB1, suggesting that the ER plays a critical role in mutations associated with lung cancer evolution.

175 Pretreatment Platelet Count is a Prognostic Marker in Lung Cancer: A Danish Registry-based Cohort Study

Birgitte Sandfeld-Paulsen, Ninna Aggerholm-Pedersen, Anne Winther-Larsen

To evaluate the prognostic significance of platelet count in lung cancer patients, we extracted data on 7,908 lung cancer patients diagnosed between 2009 and 2018 from Danish registries. Data showed that low and high platelet count were significantly correlated to an inferior overall survival in nonsmall-cell lung cancer (NSCLC) patients while low platelet count was significantly associated with inferior overall survival in small-cell lung cancer (SCLC) patients.

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

e55 Pregnancy and Pathways to Motherhood in Oncogene-driven Lung Cancer: A Single Institution Experience

Emily A. Simons, Tejas Patil, D. Ross Camidge

e60 Immune-Related Adverse Events in Advanced Non-Small Cell Lung Cancer Treated with Immune Checkpoint Inhibition in Combination With Chemotherapy: A Brief Report

Lindsey B. Shantzer, Sean C. Dougherty, Fabian Bolte, John W. Melson, Daniel R. Reed, Alia C. Lynch, Ryan D. Gentzler, Wendy Novicoff, Richard D. Hall

e65 A Phase I, Open-Label, Dose Confirmation, Escalation, and Expansion Trial of BI 1810631 as Monotherapy in Patients With Advanced or Metastatic Solid Tumors With HER2 Aberrations

John Heymach, Frans Opdam, Minal Barve, Neil Gibson, Behbood Sadrolhefazi, Josep Serra, Noboru Yamamoto

e69 Implementation Challenges and Disparities in Molecular Testing for Patients With Stage IV NSCLC: Perspectives from an Urban Safety-Net Hospital

Laura Burns, Chinmay Jani, Amr Radwan, Omar Al Omari, Mohini Patel, Geoffrey R. Oxnard, Umit Tapan

e78 Toxicities and Deaths From Intercurrent Disease Following Contemporary Postoperative Radiotherapy in Resected Non-Small-Cell Lung Cancer

Kristine N. Kim, Jonathan Heintz, Nikhil Yegya-Raman, Roger Cohen, Timothy Kegelman, Keith Cengel, Melina Marmarelis, Lova Sun, Corey Langer, Charu Aggarwal, Aditi Singh, Sunil Singhal, John Kucharczuk, Kyle Robinson, Steven Feigenberg

We evaluated the safety of modern postoperative radiotherapy for resected locally advanced non-small-cell lung cancer in a retrospective cohort (n = 119). Graded toxicities and deaths from intercurrent disease (DID) were analyzed. Postoperative radiotherapy was well tolerated with low rates of DID including cardiopulmonary deaths. Proton therapy had significantly reduced heart and lung doses but was not associated with improved DID.

e87 Timeliness of Lung Cancer Care From the Point of Suspicious Image at an Urban Safety Net Hospital

Noreen Siddiqi, Gilbert Pan, Anqi Liu, Yue Lin, Kendall Jenkins, Jenny Zhao, Kimberley Mak, Umit Tapan, Kei Suzuki

To investigate timeliness of care, an important but sparsely studied metric for lung cancer patients, we evaluate time intervals in lung cancer workups at an urban, safety-net hospital and assess for disparities via a retrospective analysis of 687 patients. Advanced presentation stage and male gender were associated with timelier treatment while white and Asian were associated with timelier diagnosis.

e94 Safety, Pharmacokinetic and Clinical Activity of Intrathecal Chemotherapy With Pemetrexed via the Ommaya Reservoir for Leptomeningeal Metastases From Lung Adenocarcinoma: A Prospective Phase I Study

Huiying Li, Shengnan Zheng, Yongjuan Lin, Tingting Yu, Yu Xie, Cheng Jiang, Xiangyu Liu, Xiaoping Qian, Zhenyu Yin

Intrathecal pemetrexed is a potential therapeutic strategy for leptomeningeal metastasis (LM) from lung adenocarcinoma (LUAD), but still faces many obstacles caused by repeated lumbar puncture. In this study, we administered intrathecal pemetrexed via Ommaya reservoir in refractory LUAD-LM patients. This provides the realworld evidence of the safety, pharmacokinetic and clinical activity of intrathecal pemetrexed via Ommaya reservoir in resistant LUAD-LM for the first time.

e105 The Performance of an Extended Next Generation Sequencing Panel Using Endobronchial Ultrasound-Guided Fine Needle Aspiration Samples in Non-Squamous Non-Small Cell Lung Cancer: A Pragmatic Study

Chenchen Zhang, Roger Y. Kim, Cindy M. McGrath, Michelle Andronov, Andrew R. Haas, Kevin C. Ma, Anthony R. Lanfranco, Christoph T. Hutchinson, Jennifer J.D. Morrisette, David M. DiBardino

This study showed both DNA and RNA NGS panels had high performance using EBUS-TBNA samples in patients with non-squamous NSCLC. Sampling more advanced nodal stations and samples with higher tumor cellularity are associated with higher success rates of DNA NGS. More EBUS-TBNA passes per station did not increase success rate of NGS.