1802MO Influence of preoperative chemoradiation on tumor-infiltrating lymphocytes in locally advanced rectal cancer: The STAR-01 cohort

L. Gnetti[1], F. Negri[2], L. Bottarelli[3], N. Campanini[1], M.E. Negru[4], F. Bergamo[5], M. Frisinghelli[6], G. Chiaulon[7], A. Tagliagambe[8], A. Morabito[9], V. Smiroldo[10], G.A.C. Vita[11], S. Tamberi[12], S.S. Cordio[13], E.M. Silini[1], C. Azzoni[14], F. Gaiani[15], G.L. de'Angelis[16], L. Boni[17], C. Aschele[18]

[1]Pathology, Azienda Ospedaliero-Universitaria di Parma, Parma, Italy; [2]Oncology, AOU di Parma, Parma, Italy; [3]Pathology, University Hospital of Parma, Parma, Italy; [4]Oncology, Azienda Ospedaliera Maggiore della Carità, Novara, Italy; [5]Dipartimento Oncologia 1, IOV - Istituto Oncologico Veneto IRCCS, Padua, Italy; [6]Oncology Department, Ospedale Santa Chiara - APSS, Trento, Italy; [7]Radioterapia, Azienda Sanitaria Universitaria Integrata, Udine, Italy; [8]Radiotherapy, Ospedale di Carrara, Carrara, Italy; [9]Oncology Department, Ospedale Civile, Camposampiero, Italy; [10]Medical Oncology and Hematology Unit, Humanitas Cancer Center, IRCCS Humanitas Research Hospital, Rozzano, Italy; [11]Pathology, IRCCS Centro di Riferimento Oncologico della Basilicata (CROB), Rionero in Vulture, Italy; [12]Oncology Department, Ospedale degli Infermi, Faenza, Italy; [13]Oncology, Azienda Ospedaliera ARNAS Garibaldi, Catania, Italy; [14]Medicine and Surgery, Università degli Studi di Parma - Facoltà di Medicina e Chirurgia, Parma, Italy; [15]Gastroenterology Unit, Azienda Ospedaliero-Universitaria di Parma, Parma, Italy; [16]Oncology Unit, Azienda Ospedaliero-Universitaria di Parma, Parma, Italy; [17]Epidemiologia Clinica, Ospedale Policlinico San Martino, Genoa, Italy; [18]Oncology, Ospedale Civile Sant'Andrea di La Spezia - ASL5 Spezzino, La Spezia, Italy

Background: Preoperative chemoradiotherapy (CRT) may increase antitumor immunity through enhancing T-cell activation and tumor infiltration. These effects could possibly sensitize tumours to immunotherapies, including checkpoint inhibitors. We explored whether preoperative CRT for locally advanced rectal cancer (LARC) induces immunologic changes and if the post-operative biological parameters are associated with tumour regression grade (TRG sec. Ryan —AJCC Eight ed.).

Methods: The multicenter randomized STAR-01 study compared a standard preoperative CRT regimen (50.4 Gy in 28 daily fractions with concomitant infused fluorouracil at the dose of 225 mg/m2/d) with the same regimen plus oxaliplatin given weekly at the dose of 60 mg/m2 in patients with LARC. Paired pre- and post-operative specimens were available for 81 patients and were analyzed by immunohistochemistry. The immunoistochemical analysis was performed with a panel of immune cells and associated factors as CD3, CD20, CD4/CD8, PD1. The pattern of tumor infiltrating lymphocytes (TILs) and related infiltrating lymphocytes (RILs) was also evaluated. Response to pre-operative chemoradiotherapy was assessed according to TRG.

Results: After therapy we observed a decreased CD4/CD8 ratio ($p < 0.001$) and reduced expression level of CD20 ($p < 0.001$). The expression level of CD3+ and PD-1+ cells after therapy did not change significantly. The relative increase of lymphocytes CD8+ inside CD4/CD8 ratio evaluated on post-operative samples was significantly associated with TRG 0 ($p < 0.001$).

Conclusions: Our data suggest that CRT may induce an enrichment of CD8+ T lymphocytes and this translates in better response to CRT. The new frontier of best treatment could be the use of specific immune cells (T lymphocytes) to trigger the system's immune response against disease.

Legal entity responsible for the study: University Hospital of Parma.

Funding: SNUPI ONLUS.

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2021.08.256

1803P The differences of TMB scores could be found in patients with different tumor types or pathological types

C. Zhang[1], H. Wang[2]

[1]Department of Integrated Oncology, Fudan University Shanghai Cancer Center, Shanghai, China; [2]Department of Internal Medicine Oncology, Shandong Cancer Hospital and Institute, Shandong First Medical University and Shandong Academy of Medical Sciences, Jinan, China

Background: Tumor mutational burden (TMB) has been reported to be a predictive biomarker for immune checkpoint inhibitor (ICI). However, most studies adopted a universal TMB for a cohort of cancers. Therefore, we test whether TMB vary across cancer types. Moreover, we compared TMB in cancers of the same type while of different pathology. And we explore whether the predictive effect of TMB for ICI vary according to tumor types or whether the predictive value of TMB might be pathology-dependent even in the same tumor type.

Methods: The genomic (based on MSK-IMPACT sequencing) and survival information of enrolled patients with various types of cancer were collected. cBioPortal was adopted to analyze these data. We have compared the TMB score in a cohort of cancers. We further investigated the optimal TMB cutoff values for different tumor types and tumors of different histology within the same tumor type using the X-tile model.

Results: We found a wide range of the median TMB value in different cancer types, ranging from 4.25 Mut/Mb in renal cell carcinoma to 26.67 Mut/Mb in colorectal cancer. Despite of the same cancer type, tumors of different pathologies were found to have different median TMB. The optimal TMB cutoff value affecting survival was lowest in renal cell carcinoma, and highest in NSCLC, with others in between. For patients with NSCLC, melanoma, bladder cancer, renal cell carcinoma, head and neck cancer, esophagogastric cancer and colorectal cancer, high TMB was associated with relatively better survival. However, for glioma, high TMB is linked with relatively worse survival with ICI treatment. We demonstrated a marked difference in TMB cutoff between LUAD and LUSC. Moreover, higher TMB is linked with better prognosis with ICI in LUAD while predicts worse survival in LUSC subject to ICI. Similarly, the optimal TMB cutoff to predict survival is discrepant in tumors with different pathological types.

Conclusions: Our results reveal that TMB is cancer type and pathology specific. We recommend that tumor type and pathological type should not be neglected when distinguishing tumor mutational burden scores. Our findings allow a more robust and precise assessment rather than arbitrary judgment of TMB, which affects our decision-making regarding ICI adoption.

Legal entity responsible for the study: Haiyong Wang.

Funding: Special funds for Taishan Scholars Project (Grant no. tsqn201812149); Academic promotion programme of Shandong First Medical University (2019RC004).

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2021.08.257

1804P Baseline mutational profiles of patients (pts) with carcinoma-of-unknown-primary-origin (CUP) enrolled onto CUPISCO

C.B. Westphalen[1], A. Karapetyan[2], A. Beringer[3], T. Bochtler[4], N. Chalabi[3], N. Cook[5], G. Duran-Pacheco[6], S. Golding[7], E. Höglander[8], F. Losa[5], L. Mileshkin[10], H. Moch[11], C. Pauli[11], J. Ross[12], E. Sokol[13], R. Tothill[14], A. Krämer[4]

[1]Comprehensive Cancer Center Munich & Department of Medicine III, Ludwig Maximilian University of Munich, Munich, Germany; [2]Product Development Data Sciences, F. Hoffmann-La Roche Ltd, Basel, Switzerland; [3]Product Development Medical Affairs, F. Hoffmann-La Roche Ltd, Basel, Switzerland; [4]Molecular Hematology/Oncology, German Cancer Research Center (DKFZ) and University of Heidelberg, Heidelberg, Germany; [5]Medical Oncology, The University of Manchester and the Christie NHS Foundation Trust, Manchester, UK; [6]Biostatistics, F. Hoffmann-La Roche Ltd, Basel, Switzerland; [7]Statistics, F. Hoffmann-La Roche Ltd, Basel, Switzerland; [8]Oncology Biomarker Development - gRED, F. Hoffmann-La Roche Ltd, Basel, Switzerland; [9]Medical Oncology, Hospital de Sant Joan Despí-Moisès Broggi, ICO Hospitalet, Barcelona, Spain; [10]Medical Oncology, Peter MacCallum Cancer Centre, Melbourne, VIC, Australia; [11]Pathology, University of Zürich and University Hospital Zürich, Zurich, Switzerland; [12]Departments of Pathology and Urology, Foundation Medicine, Inc./SUNY Upstate Medical University, Cambridge/Syracuse, MA, USA; [13]Cancer Genomics Research, Foundation Medicine, Inc., Cambridge, MA, USA; [14]Clinical Pathology, University of Melbourne, Melbourne, VIC, Australia

Background: NCCN guidelines consider next-generation sequencing important in guiding therapeutic decision-making in CUP. CUPISCO (NCT03498521) is an ongoing, phase II randomised study of targeted therapy/cancer immunotherapy vs platinum-based chemotherapy in pts with unfavourable CUP, defined per ESMO guidelines. We present a preliminary, descriptive molecular analysis of ~50% of pts designated for enrolment.

Methods: Upon enrolment, comprehensive genomic profiling, including determination of microsatellite instability and tumour mutational burden (TMB), was performed on formalin-fixed, paraffin-embedded tissues using the F1CDx assay. Gene alterations (GAs) found in ≥3% of pts were analysed using multiple correspondence analyses and hierarchical clustering to identify co-occurrences.

Results: Median age was 61.5 years (n = 346 [Apr 2021]; range: 22—84); median TMB was 2.5 mutations/Mb (0—63.0). In our analysis, 30% of patients carried a potentially targetable GA. Most frequent GAs were *TP53* (44%), *CDKN2A* (32%), *KRAS* (21%; 2% *G12C* alterations), *CDKN2B* (21%), *ARID1A* (13%), *STK11* (13%), *MTAP* (12%), *PIK3CA* (10%), *MYC* (8%), *PBRM1* (8%), *BAP1* (8%) and *FGFR2* (8%). Beyond *PIK3CA* and *FGFR2*, other targetable GAs were identified in *EGFR* (2%), *ERBB2* (6%), *ALK* (0.3%), *ROS1* (1%), *MET* (2%), *NTRK1* (1%) and *BRAF* (6%). The frequency of microsatellite instability and TMB-high (>16 mutations/Mb) samples was 3% and 9%, respectively. Based on hierarchical clustering of co-mutational profiles, multiple clusters were identified in the study cohort, each characterised by specific GA co-occurrences.

Conclusions: This descriptive analysis sheds further light on the molecular landscape in pts with poor-prognosis CUP. Our analyses demonstrate that CUP cases can be clustered based on molecular profiling; further studies are needed to determine if these clusters carry clinical relevance. Our early results suggest that comprehensive genomic profiling of CUP samples identifies therapeutically relevant GAs in a significant proportion of patients and could thus guide personalised treatment of these tumours.

Clinical trial identification: NCT03498521.

Editorial acknowledgement: Support for third-party writing assistance for this abstract, furnished by Stephen Salem, BSc, of Health Interactions, was provided by F. Hoffmann-La Roche Ltd, Basel, Switzerland.

Legal entity responsible for the study: F. Hoffmann-La Roche Ltd.

Funding: F. Hoffmann-La Roche Ltd.

Disclosure: C.B. Westphalen: Financial Interests, Personal, Other, Honoraria: Bayer; Financial Interests, Personal, Other, Honoraria: Celgene; Financial Interests, Personal, Other, Honoraria: Ipsen; Financial Interests, Personal, Other, Honoraria: Servier; Financial Interests, Personal, Other, Honoraria: Taiho; Financial Interests, Personal, Other, Honoraria: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Advisory Role: Celgene; Financial Interests, Personal, Advisory Role: Shire/Baxalta; Financial Interests, Personal, Advisory Role: Rafael Pharmaceuticals; Financial Interests, Personal, Advisory Role: RedHill BioPharma; Financial Interests, Personal, Advisory Role: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation expenses: Bayer; Financial Interests, Personal, Other, Travel/accommodation expenses: Celgene; Financial Interests, Personal, Other, Travel/accommodation expenses: RedHill BioPharma; Financial Interests, Personal, Other, Travel/accommodation expenses: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation expenses: Servier; Financial Interests, Personal, Other, Travel/accommodation expenses: Taiho; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. A. Karapetyan: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. A. Beringer: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. T. Bochtler: Financial Interests, Institutional, Research Grant, Institutional research funding: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Other, Works as study oncologist for the CUPISCO trial: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. N. Chalabi: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. N. Cook: Financial Interests, Personal and Institutional, Advisory Board: RedX Pharmaceuticals; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Research Grant, Research funding: AstraZeneca; Financial Interests, Institutional, Research Grant, Research funding: Orion; Financial Interests, Institutional, Research Grant, Research funding: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Research Grant, Research funding: Taiho; Financial Interests, Institutional, Research Grant, Research funding: GSK; Financial Interests, Institutional, Research Grant, Research funding: Novartis; Financial Interests, Institutional, Research Grant, Research funding: Starpharma; Financial Interests, Institutional, Research Grant, Research funding: Bayer; Financial Interests, Institutional, Research Grant, Research funding: Eisai; Financial Interests, Institutional, Research Grant, Research funding: UCB; Financial Interests, Institutional, Research Grant, Research funding: RedX Pharmaceuticals; Financial Interests, Institutional, Research Grant, Research funding: Stemline Therapeutics; Financial Interests, Institutional, Research Grant, Research funding: Boehringer Ingelheim; Financial Interests, Institutional, Research Grant, Research funding: Merck; Financial Interests, Institutional, Research Grant, Research funding: Tarveda Therapeutics. G. Duran-Pacheco: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. S. Golding: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. E. Höglander: Financial Interests, Personal, Full or part-time Employment, Employee: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. F. Losa: Financial Interests, Institutional, Research Grant, Institutional research funding: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Research Grant, Institutional research funding: Amgen; Financial Interests, Institutional, Research Grant, Institutional research funding: Merck; Financial Interests, Personal, Other, Travel/accommodation expenses: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation expenses: Merck; Financial Interests, Personal, Advisory Board: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Advisory Board: Amgen; Financial Interests, Personal, Advisory Board: Merck; Financial Interests, Personal, Advisory Board: Sanofi; Financial Interests, Personal, Advisory Board: Servier; Financial Interests, Personal, Speaker's Bureau: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Expert Testimony: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Speaker's Bureau: Sanofi; Financial Interests, Personal, Expert Testimony: Sanofi; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. L. Mileshkin: Financial Interests, Personal, Other, Travel/accommodation/expenses: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation/expenses: BeiGene; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. H. Moch: Financial Interests, Institutional, Advisory Board, Advisory consultant: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Advisory Board, Advisory consultant: Definiens; Financial Interests, Institutional, Advisory Board, Advisory consultant: Bayer; Financial Interests, Institutional, Advisory Board, Advisory consultant: Ipsen; Financial Interests, Institutional, Advisory Board, Advisory consultant: Amgen; Financial Interests, Personal, Other, Travel/accommodation/expenses: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation/expenses: Definiens; Financial Interests, Institutional, Research Grant, Institutional research funding: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. C. Pauli: Financial Interests, Personal, Other, Travel/accommodation/expenses: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. J. Ross: Financial Interests, Personal, Other, Honoraria: Foundation Medicine, Inc.; Financial Interests, Personal, Stocks/Shares: Foundation Medicine, Inc.; Financial Interests, Personal, Other, Leadership: Foundation Medicine, Inc.; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. E. Sokol: Financial Interests, Personal, Full or part-time Employment, Employee: Foundation Medicine, Inc.; Financial Interests, Personal, Stocks/Shares: F. Hoffmann-La Roche Ltd; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd. R. Tothill: Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Advisory Board, Honoraria: Merck-Serono Australia. A. Krämer: Financial Interests, Personal, Other, Honoraria: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Leadership role: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Honoraria: Daiichi Sankyo; Financial Interests, Personal, Other, Honoraria: AbbVie; Financial Interests, Institutional, Other, Honoraria: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Other, Honoraria: Bayer; Financial Interests, Institutional, Research Grant, Institutional research funding: Merck; Financial Interests, Institutional, Research Grant, Institutional research funding: Bayer; Financial Interests, Personal, Other, Travel/accommodation/expenses: F. Hoffmann-La Roche Ltd; Financial Interests, Personal, Other, Travel/accommodation/expenses: Celgene; Financial Interests, Personal, Other, Travel/accommodation/expenses: Daiichi Sankyo; Financial Interests, Institutional, Advisory Board, Advisory consultant: F. Hoffmann-La Roche Ltd; Financial Interests, Institutional, Advisory Board, Advisory consultant: Daiichi Sankyo; Financial Interests, Institutional, Advisory Board, Advisory consultant: BMS; Financial Interests, Institutional, Advisory Board, Advisory consultant: AbbVie; Non-Financial Interests, Personal, Research Grant, Third party medical writing support: F. Hoffmann-La Roche Ltd.

https://doi.org/10.1016/j.annonc.2021.08.258

1805P Assistance with an artificial intelligence-powered PD-L1 analyzer reduces interobserver variation in pathologic reading of tumor proportion score in non-small cell lung cancer

S. Choi[1], S. Kim[2], H. Kim[3], S. Cho[4], M. Ma[4], S. Park[4], S. Pereira[4], B.J. Aum[4], S. Shin[4], K. Paeng[4], D. Yoo[4], W. Jung[4], C-Y. Ock[4], S-H. Lee[5], Y-L. Choi[1], J-H. Chung[3], T.S.K. Mok[6]

[1]Department of Pathology and Translational Genomics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea; [2]Department of Pathology, Ajou University School of Medicine, Suwon, Republic of Korea; [3]Department of Pathology, Seoul National University Bundang Hospital, Seongnam, Republic of Korea; [4]Oncology Group, Lunit Inc., Seoul, Republic of Korea; [5]Division of Hematology-Oncology, Department of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea; [6]Department of Clinical Oncology, State Key Laboratory of Translational Oncology and Chinese University of Hong Kong, Hong Kong, China

Background: Programmed death ligand 1 (PD-L1) expression is the standard biomarker in advanced non-small cell lung cancer (NSCLC). However, manual evaluation of PD-L1 tumor proportion score (TPS) by pathologists has practical limitations of interobserver bias, variation in subjectivity on the area of interest, and intensive labor. This study aimed to explore whether the artificial intelligence (AI)-powered TPS analyzer could reduce the human discrepancy.

Methods: AI-powered TPS analyzer, namely Lunit SCOPE PD-L1, was developed with a total of 393,565 tumor cells annotated by board-certified pathologists for PD-L1 expression in 802 whole-slide images (WSI) of NSCLC stained by 22C3 pharmDx immunohistochemistry. Three independent pathologists labeled PD-L1 TPS into 3 class categories: TPS $<$ 1%, 1-49%, or $\geq$ 50%, of 479 NSCLC slides. For the cases of disagreement between each pathologist and AI model, the pathologists were asked to revise TPS class in assistance with AI model which not only detects PD-L1 positivity of tumor cells, but also calculates WSI-level TPS. Finally, we compared the concordance rate of three pathologists with or without AI assistance.

Results: Without AI assistance, 3 pathologists concordantly labeled TPS in 81.4% of cases (n = 390 / 479, $\kappa = 0.798$), and the concordance rate between the consensus of pathologists and standalone AI model was 86.4% (n = 337 / 390). Afterward, pathologists revised their initial labeling with assistance of AI model for the cases of disagreement between the pathologist and AI model (n = 91, 93, and 107, respectively for each pathologist). Interestingly, the overall concordance rate of three pathologists with AI assistance was increased to 90.2% (n = 432 / 479, $\kappa = 0.890$). Subgroup analysis showed that the concordance rates without AI assistance according to PD-L1 TPS $<$1%, 1-49%, and $\geq$50% class were 67.9%, 72.2%, and 92.4%, respectively, which were increased with AI assistance to 89.6%, 86.2%, and 93.6%, respectively.

Conclusions: Assistance with AI-powered TPS analyzer substantially improved the pathologist's consensus and could be regarded as a reference for the final labeling of TPS, especially in the subgroups of TPS $<$1% and 1-49%.

Legal entity responsible for the study: The authors.

Funding: Lunit Inc.

Disclosure: S. Cho, M. Ma, S. Park, S. Pereira, B.J. Aum, S. Shin, K. Paeng, D. Yoo, W. Jung. C-Y. Ock: Financial Interests, Personal, Full or part-time Employment: Lunit Inc. T.S.K. Mok: Honoraria for Invited Speaker and/or Advisory Board roles for: AbbVie, ACEA Pharma, Alpha Biopharma, Amgen, Amoy Diagnostics, Beigene, Boehringer Ingelheim, Bristol Myers Squibb, Eli Lilly, Blueprint Medicines, Berry Oncology, CStone Pharma, Curio Science, Daiichi Sankyo, Eisai, Fishawack Facilitate, Gritstone Oncology, Guardant Health, G1 Therapeutics, Hengrui, Ignyta, IQVIA, Incyte Corporation, Inivata, InMed Medical Communication, Janssen, Loxo Oncology, Lunit USA, Inc., MD Health, Medscape/WebMD, Merck Serono, Mirati Therapeutics, MoreHealth, MSD, Novartis, OrigiMed, PeerVoice, PER, Permanyer SL, Prime Oncology, Puma Tech., Qiming Dev., Research to Practice, Roche, Sanofi-Aventis, Takeda, Touch Medical Media, Virtus Medical, Yuhan; Advisory role (non-financial interest): AstraZeneca, Aurora Tele-Oncology, geneDecode, Lunit USA, Inc., Sanomics Ltd.; Stocks/shares: Aurora Tele-Oncology, Biolidics Ltd., Hutchison Chi-Med, Loxo Oncology, Lunit USA, Inc., OrigiMed Co., Sanomics Ltd., Virtus Medical Group; Receipt of grants (institutional financial support for clinical trials): AstraZeneca, BMS, Clovis Oncology, G1 Therapeutics, Merck Serono, MSD, Novartis, Pfizer, Roche, SFJ Pharmaceuticals, Takeda, XCovery; Member of Board of Directors (remunerated): AstraZeneca, Hutchison Chi-Med. All other authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2021.08.259