

Year in Review — Clinical Investigators Provide Perspectives on the Most Relevant New Publications, Data Sets and Advances in Oncology: Targeted Therapy for Lung Cancer

**Tuesday, January 26, 2021
5:00 PM – 6:00 PM ET**

Faculty

**Joel W Neal, MD, PhD
Paul K Paik, MD**

Moderator

Neil Love, MD

YiR Targeted Therapy for Lung Cancer Faculty



Joel W Neal, MD, PhD

Associate Professor of Medicine, Division of Oncology
Stanford Cancer Institute, Stanford University
Palo Alto, California



Paul K Paik, MD

Associate Attending Physician
Clinical Director, Thoracic Oncology Service
Memorial Sloan Kettering Cancer Center
New York, New York

Commercial Support

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Dr Love — Disclosures

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Dr Neal — Disclosures

Advisory Committee	AstraZeneca Pharmaceuticals LP, Blueprint Medicines, Lilly, Regeneron Pharmaceuticals Inc
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Dr Paik — Disclosures

Advisory Committee	Calithera Biosciences, EMD Serono Inc, Xencor
Consulting Agreements	Bicara Therapeutics, a wholly owned subsidiary of Biocon, Boehringer Ingelheim Pharmaceuticals Inc, GlaxoSmithKline
Contracted Research	EMD Serono Inc
Data and Safety Monitoring Board/Committee	Takeda Oncology

We Encourage Clinicians in Practice to Submit Questions

The screenshot displays a Zoom meeting interface. At the top, a gallery view shows six participants. The main screen displays a presentation slide with the text: "You may submit questions using the Zoom Chat option below". A large red arrow points downwards from this text. On the right side, a "Participants (10)" list is visible, showing names like John Smith, Mary Major, Richard Miles, John Noakes, and Alice Suarez. Below the participants list, a "Zoom Group Chat" window is open, showing a message from "Me to Everyone" at 12:49 PM. The bottom toolbar includes icons for "Join Audio", "Start Video", "Invite", "Participants", "Share", "Chat", "Record", and "Leave Meeting".

Feel free to submit questions now before the program begins and throughout the program.

Familiarizing Yourself with the Zoom Interface

How to answer poll questions

The screenshot displays a Zoom meeting interface. At the top, a gallery view shows six participants. The main screen displays a poll question: "What is your usual treatment recommendation for a patient with MM followed by ASCT and maintenance experiences an as... clinical relapse?". Below the question is a "Quick Poll" form with a list of treatment options and a "Submit" button. The options are:

1. Carfilzomib +/-
2. Pomalidomide
3. Carfilzomib + p
4. Elotuzumab + l
5. Elotuzumab + p
6. Daratumumab
7. Daratumumab + pomalidomide +/- dexamethasone
8. Daratumumab + bortezomib +/- dexamethasone
9. Ixazomib + Rd
10. Other

At the bottom of the screen, there is a toolbar with icons for "Join Audio", "Start Video", "Invite", "Participants" (showing 10), "Share", "Chat", "Record", and "Leave Meeting". On the right side, a "Participants (10)" list is visible, showing names and status icons.

When a poll question pops up, click your answer choice from the available options. Results will be shown after everyone has answered.

ONCOLOGY TODAY

WITH DR NEIL LOVE

The Role of Immunotherapy Combination Approaches in the Management of Metastatic Non-Small Cell Lung Cancer



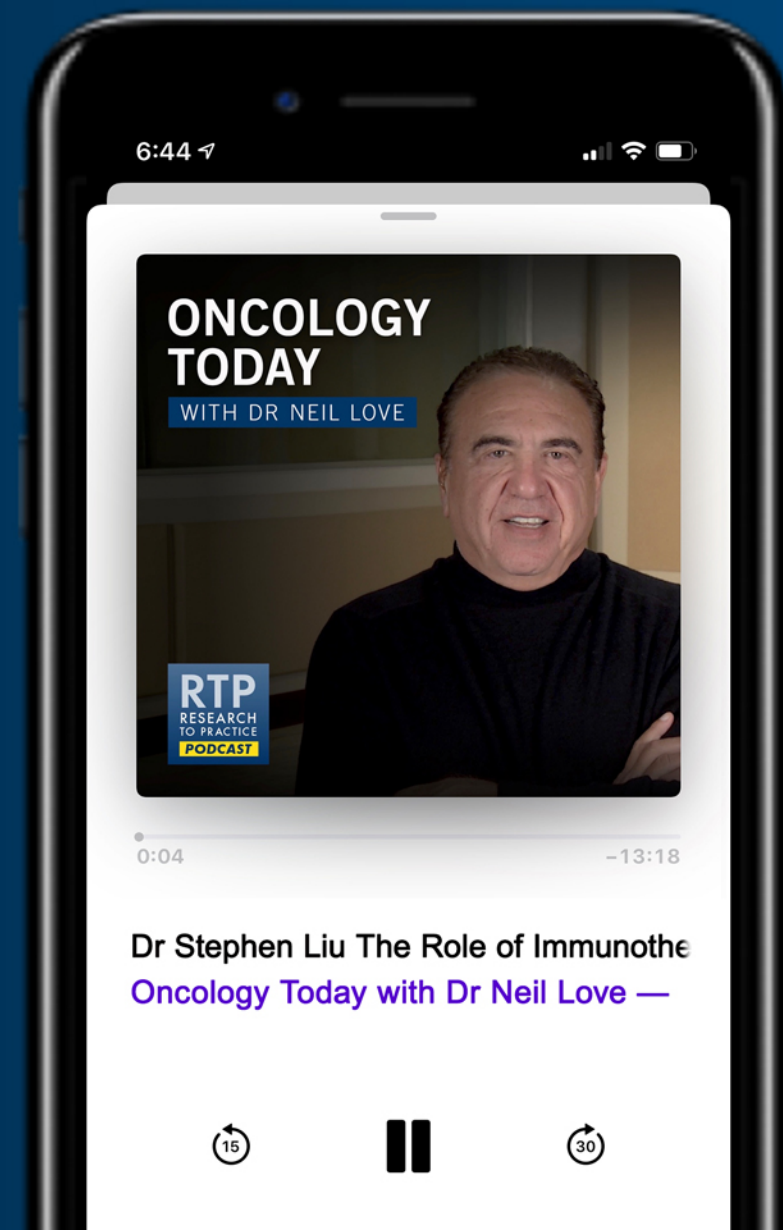
DR STEPHEN LIU
GEORGETOWN UNIVERSITY HOSPITAL



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Cases from the Community: Investigators Discuss Emerging Research and Actual Patients with Hepatocellular Carcinoma (Part 1 of a 3-Part Series)

**Wednesday, January 27, 2021
5:00 PM – 6:30 PM ET**

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James J Harding, MD
Ahmed Omar Kaseb, MD, CMQ**

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**Year in Review — Clinical Investigators Provide
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**Rafael Fonseca, MD
Jonathan L Kaufman, MD**

Moderator

Neil Love, MD

Year in Review — Clinical Investigators Provide Perspectives on the Most Relevant New Publications, Data Sets and Advances in Oncology: Bladder Cancer and Renal Cell Carcinoma

**Tuesday, February 2, 2021
5:00 PM – 6:00 PM ET**

Faculty

**Sumanta K Pal, MD
David I Quinn, MBBS, PhD**

Moderator

Neil Love, MD

**Recent Advances in Hematologic Oncology:
A 4-Part Live Webinar Series Reviewing Key Data and
Presentations from the 62nd ASH Annual Meeting**

Part 2 — Hodgkin and Non-Hodgkin Lymphoma

**Wednesday, February 3, 2021
5:00 PM – 6:00 PM ET**

Faculty

**John Kuruvilla, MD
John P Leonard, MD
Michael E Williams, MD, ScM**

Moderator

Neil Love, MD

Cases from the Community: Investigators Discuss Emerging Research and Actual Patients with Gastroesophageal Cancers (Part 2 of a 3-Part Series)

**Thursday, February 4, 2021
5:00 PM – 6:30 PM ET**

Faculty

**Daniel Catenacci, MD
Yelena Y Janjigian, MD
Rutika Mehta, MD, MPH
Zev Wainberg, MD, MSc**

Moderator

Neil Love, MD

Meet The Professor

Management of Lung Cancer

Friday, February 5, 2021
12:00 PM - 1:00 PM ET

Faculty

Joshua Bauml, MD

Moderator

Neil Love, MD

Thank you for joining us!

CME and MOC credit information will be emailed to each participant within 5 business days.



Module 1: Non-Small Cell Lung Cancer (NSCLC)

• Key Relevant Data Sets

- CheckMate 9LA: Nivolumab + ipilimumab + platinum-doublet chemotherapy
- CheckMate 227 Part 1: Three-year update
- KEYNOTE-189: Updated analysis
- IMpower110: First-line atezolizumab
- KEYNOTE-024: Five-year overall survival update
- EMPOWER-Lung 1: Cemiplimab monotherapy vs platinum-doublet chemotherapy
- PACIFIC: Three-year overall survival with durvalumab





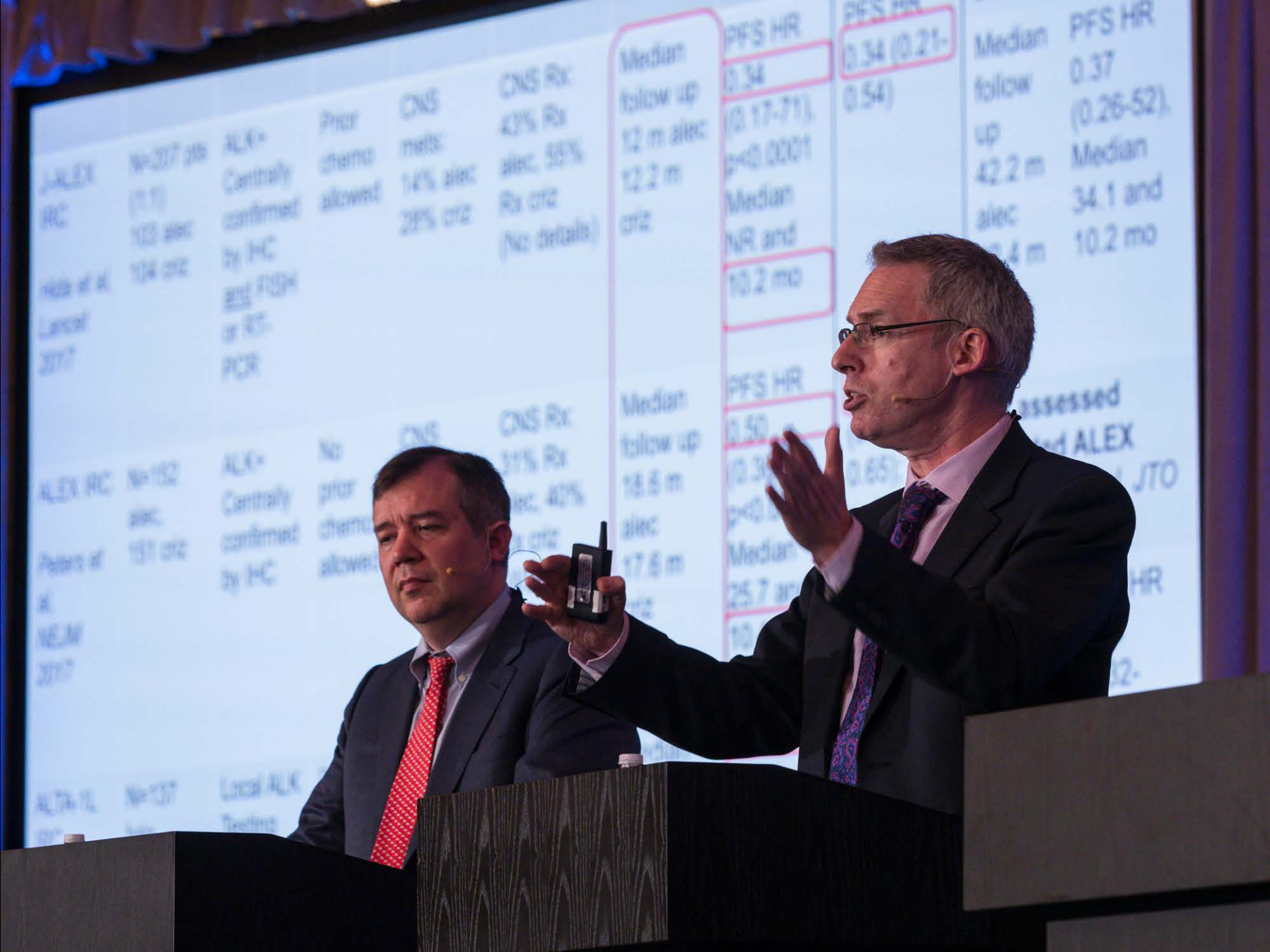


with an NTRK gene fusion?









J-ALEX RC	N=207 (111 ailec 104 criz)	ALX+ Centrally confirmed by HC and FISH or RT-PCR	Prior chemo allowed	CNS mets: 14% ailec 28% criz	CNS Rx: 43% Rx ailec, 50% Rx criz (No details)	Median follow up 12 m ailec 12.2 m criz	PFS HR 0.34 (0.17-71), p<0.0001 Median NR and 10.2 mo	PFS HR 0.34 (0.21-0.54)	Median follow up 42.2 m ailec 30.4 m criz	PFS HR 0.37 (0.26-52), Median 34.1 and 10.2 mo
ALEX RC	N=152 ailec 151 criz	ALX+ Centrally confirmed by HC	No prior chemo allowed	CNS	CNS Rx: 31% Rx ailec, 40% Rx criz	Median follow up 18.6 m ailec 17.6 m criz	PFS HR 0.50 (0.35-0.71), p<0.001 Median 25.7 and 10.2 mo	PFS HR 0.50 (0.35-0.65)	assessed and ALEX JTO	HR
ALTA-IL	N=137	Local ALX Testing								











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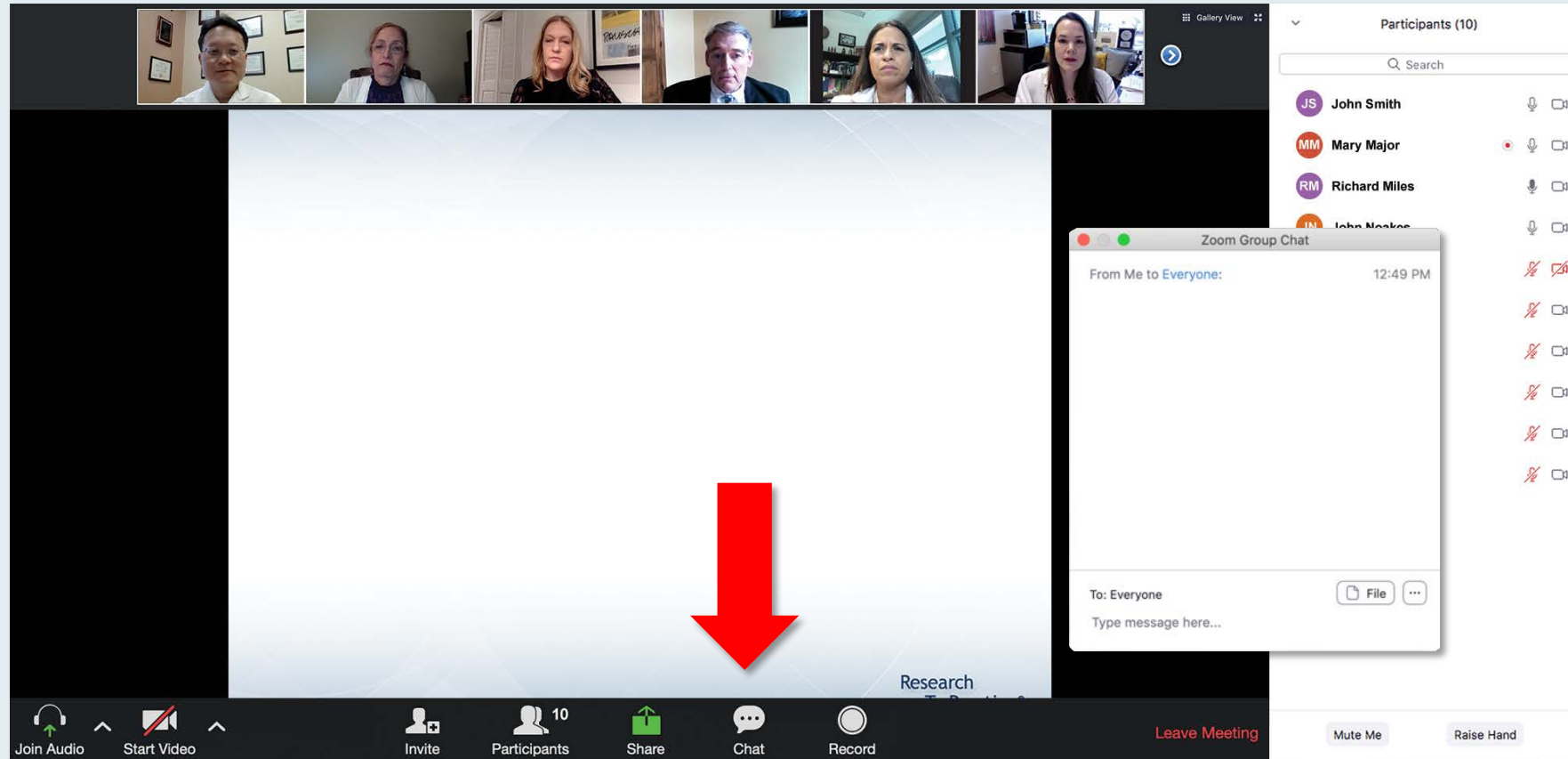
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What is your usual treatment recommendation for a patient with MM who has been followed by ASCT for 1-5 years who then experiences an asymptomatic relapse?

Quick Poll

- ☐ Carfilzomib +/- dexamethasone
- ☐ Pomalidomide +/- dexamethasone
- ☐ Carfilzomib + pomalidomide +/- dexamethasone
- ☐ Elotuzumab + lenalidomide +/- dexamethasone
- ☐ Elotuzumab + pomalidomide +/- dexamethasone
- ☐ Daratumumab + lenalidomide +/- dexamethasone
- ☐ Daratumumab + pomalidomide +/- dexamethasone
- ☐ Daratumumab + bortezomib +/- dexamethasone
- ☐ Ixazomib + Rd
- ☐ Other

Submit

Co-provided by USF Health Research To Practice®

Join Audio Start Video Invite Participants 10 Share Chat Record Leave Meeting Mute Me Raise Hand

Participants (10)

Search

- JS John Smith
- MM Mary Major
- RM Richard Miles
- JN John Noakes
- AS Alice Suarez
- JP Jane Perez
- RS Robert Stiles
- JF Juan Fernandez
- AK Ashok Kumar
- JS Jeremy Smith

When a poll question pops up, click your answer choice from the available options.
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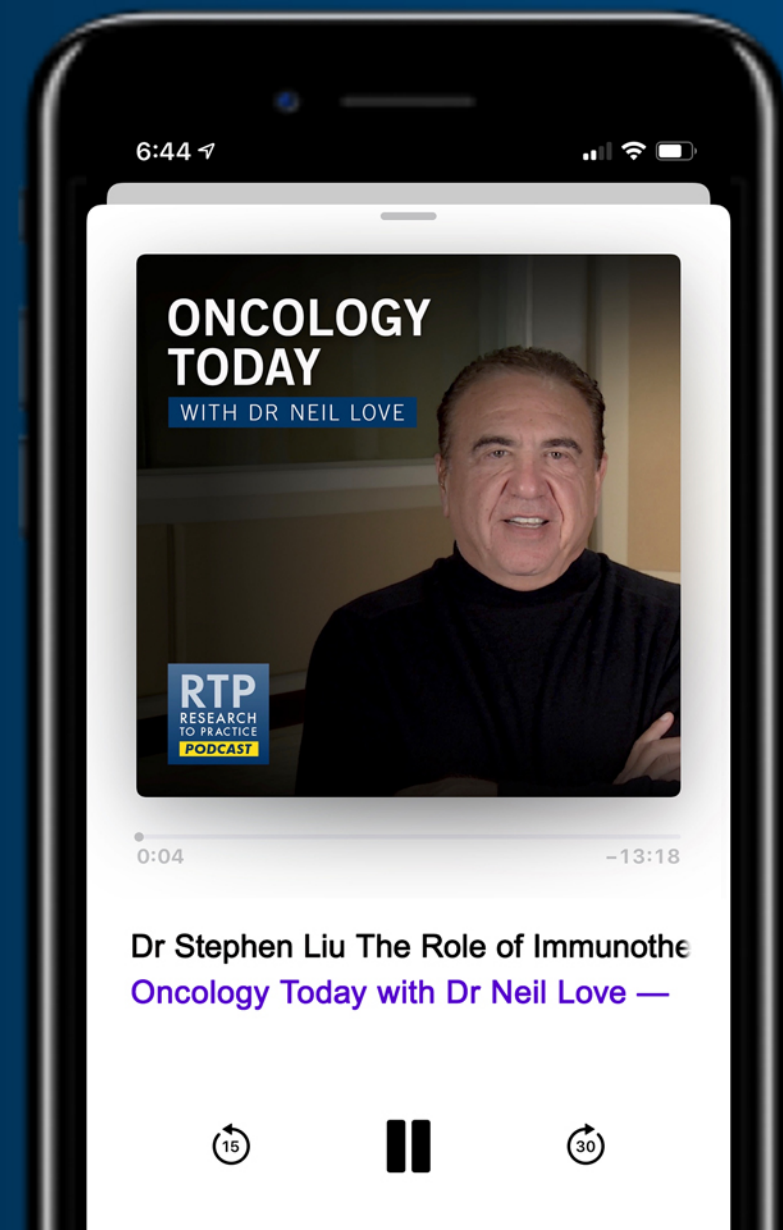
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Margaret A Deutsch, MD
Medical Oncologist
Duke Cancer Center Raleigh
Raleigh, North Carolina

Agenda

Case Presentation: Dr Deutsch – 67-year-old man

Module 1: ROS1 Rearrangements

Module 2: EGFR Exon 19 Deletion; Exon 21 (L858R) Point Mutation

Module 3: EGFR Exon 20 Insertion

Module 4: HER2 Amplification/Mutation

Module 5: ALK Rearrangement

Module 6: NTRK Gene Fusion

Module 7: RET Fusions

Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

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Case Presentation: A 67-year-old man, never smoker with symptomatic metastatic adenosquamous carcinoma of the lung



Margaret Deutsch, MD

- December 2020: Presents with left chest discomfort and shortness of breath
- January 2021: Pleural biopsy reveals adenosquamous carcinoma of the lung
 - PD-L1: >95% | ALK: Negative | EGFR: Pending | NGS: Pending
- MRI brain: Stable
- Carboplatin/pemetrexed/pembrolizumab x 3 weeks – 1 dose pembro

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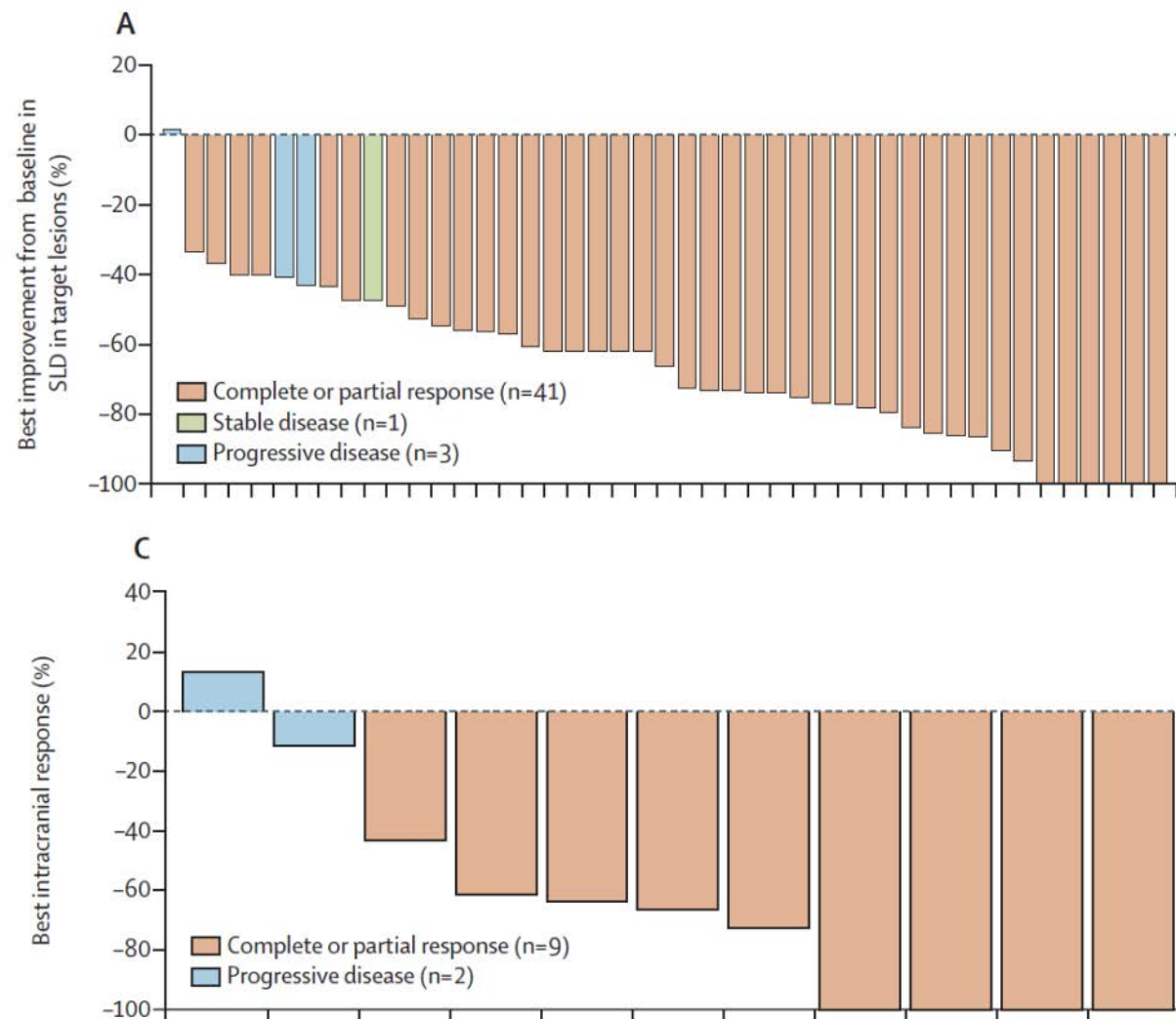
Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

Module 1: ROS1 Rearrangements

- **Key Relevant Data Set**
 - Entrectinib: Integrated analysis of 3 Phase I/II trials

Entrectinib in ROS1+ lung cancer update



- ORR = 77% (64-88%)
- Median DOR = 24.6 months (11.4-34.8)
- Median PFS = 19 months (12.2-36.6)
- Intracranial ORR = 55% (32-77%)



For a patient with newly diagnosed metastatic adenocarcinoma of the lung with a ROS1 rearrangement and a PD-L1 tumor proportion score (TPS) of 10%, in which line of therapy would you most likely administer targeted treatment?

1. First line
2. Second line
3. Third line
4. After the third line

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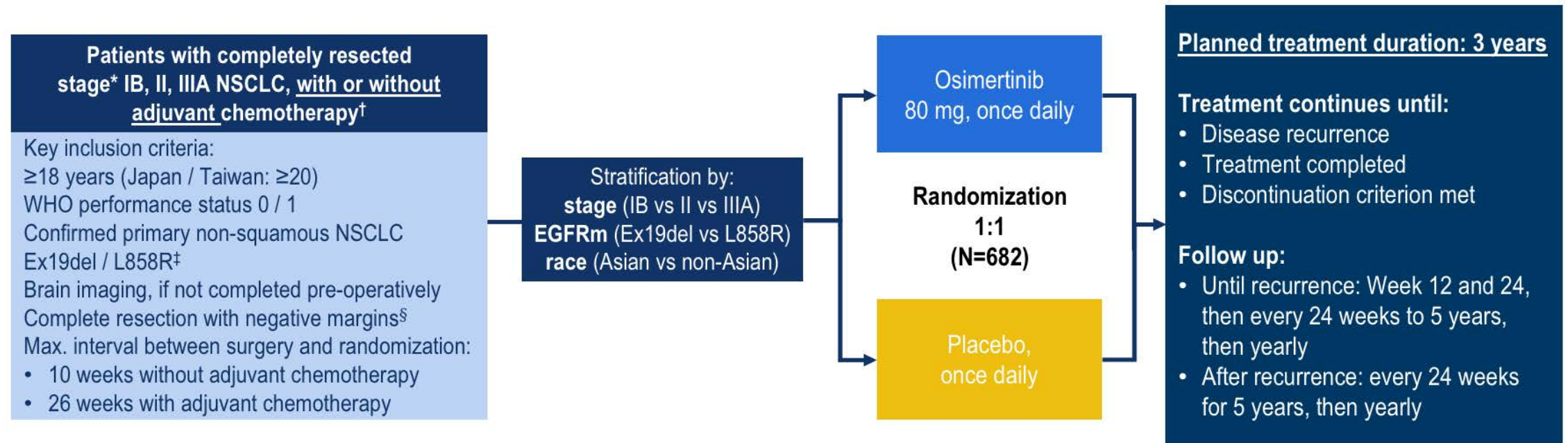
Module 9: KRAS G12C Mutation

Module 2: EGFR Exon 19 Deletion

- **Key Relevant Data Sets**

- ADAURA: Adjuvant osimertinib for resected NSCLC
- ADAURA: CNS disease recurrence
- Patritumab deruxtecan: Novel HER3-directed antibody-drug conjugate

ADAURA Phase III double-blind study design



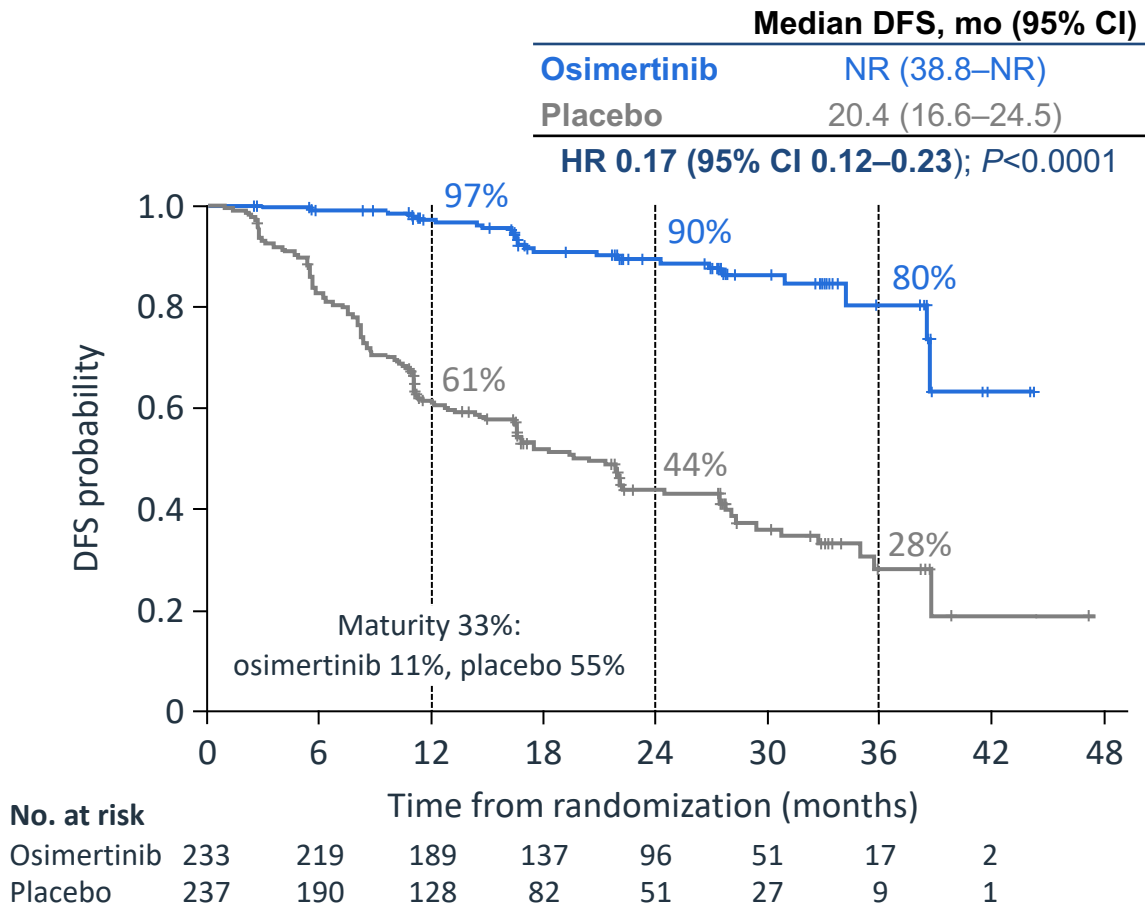
Endpoints

- **Primary:** DFS, by investigator assessment, in stage II/IIIA patients; designed for superiority under the assumed DFS HR of 0.70
- **Secondary:** DFS in the overall population¶, DFS at 2, 3, 4, and 5 years, OS, safety, health-related quality of life

- Following IDMC recommendation, the study was unblinded early due to efficacy; here we report an unplanned interim analysis
- At the time of unblinding the study had completed enrollment and all patients were followed up for at least 1 year

ADAURA: Disease-free survival (DFS)

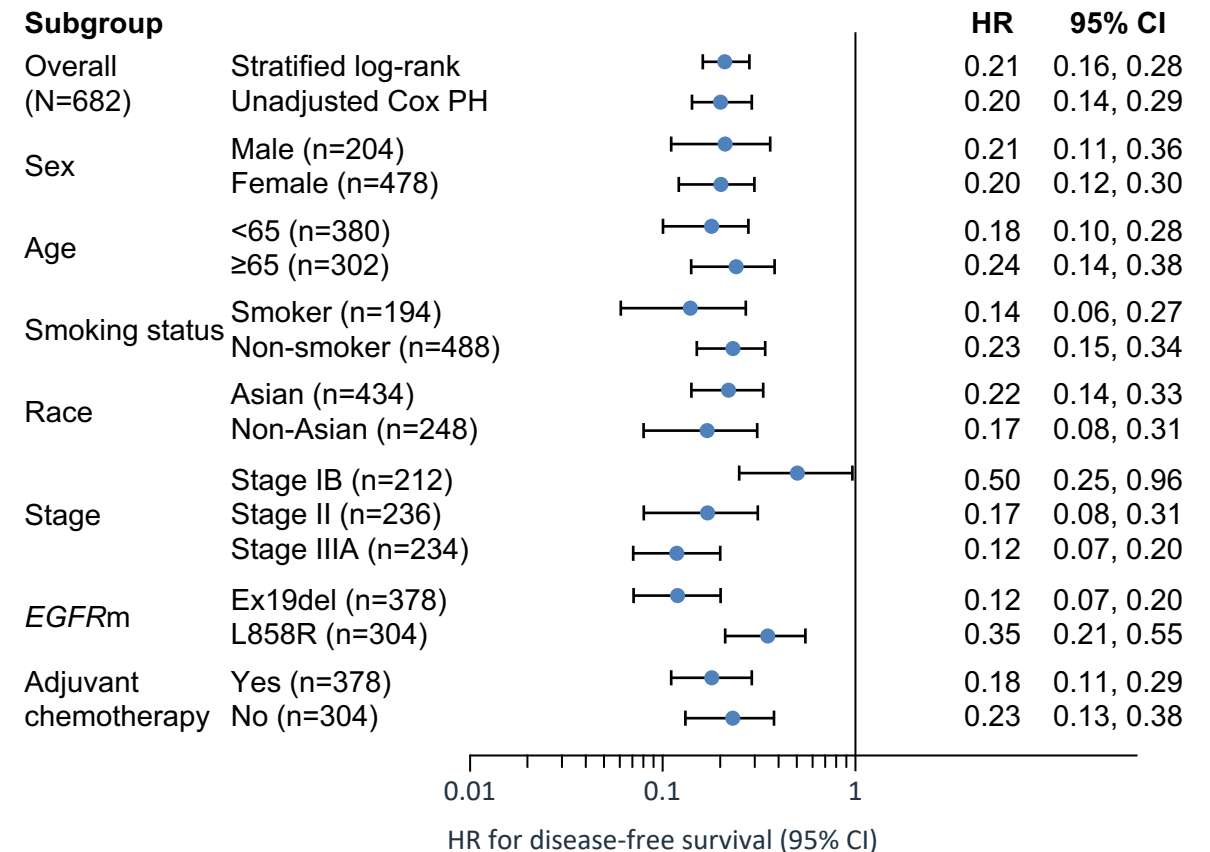
Primary endpoint: DFS in patients with Stage II/IIIA disease



Data cutoff: January 17, 2020. NR, not reached

Herbst RS, et al. ASCO 2020. Abstract LBA5.

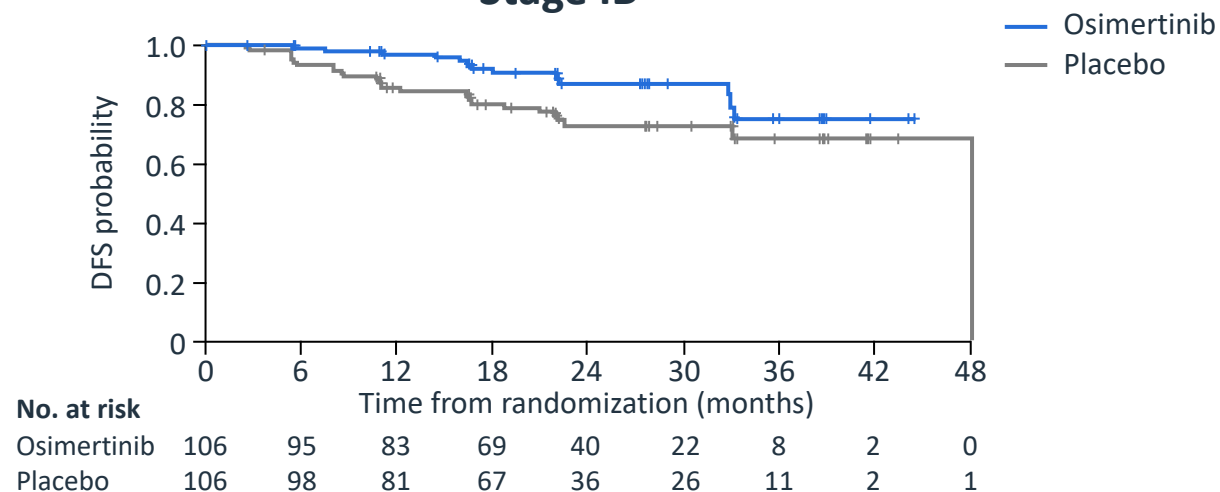
DFS across subgroups in the overall population



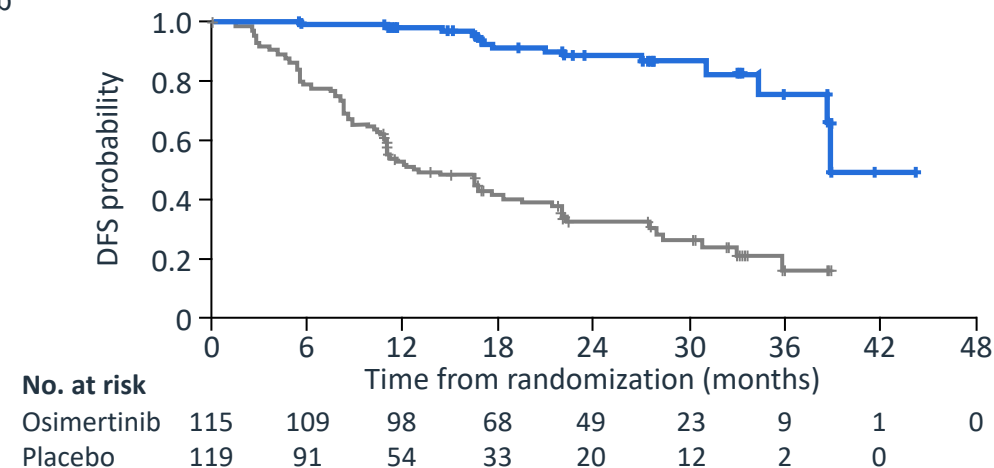
Courtesy of Joel W Neal, MD, PhD

ADAURA: Disease-free survival by stage

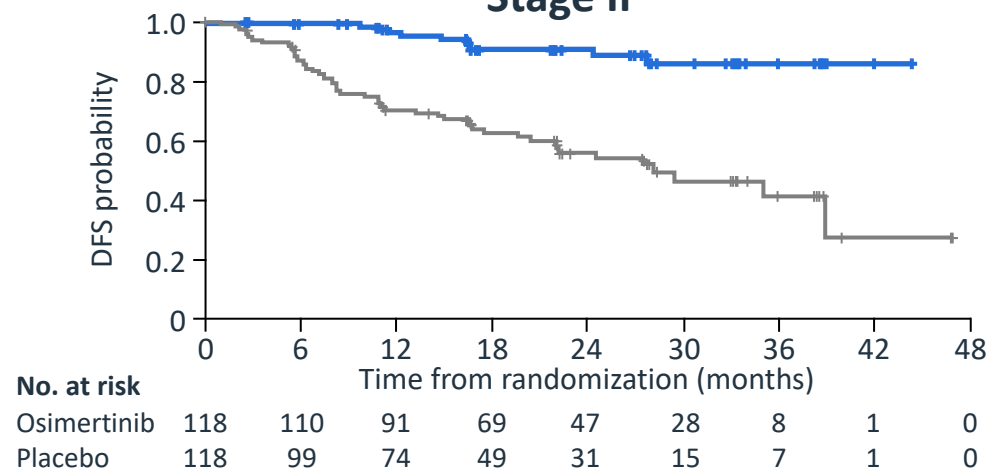
Stage IB



Stage IIIA



Stage II



2 Year DFS rate

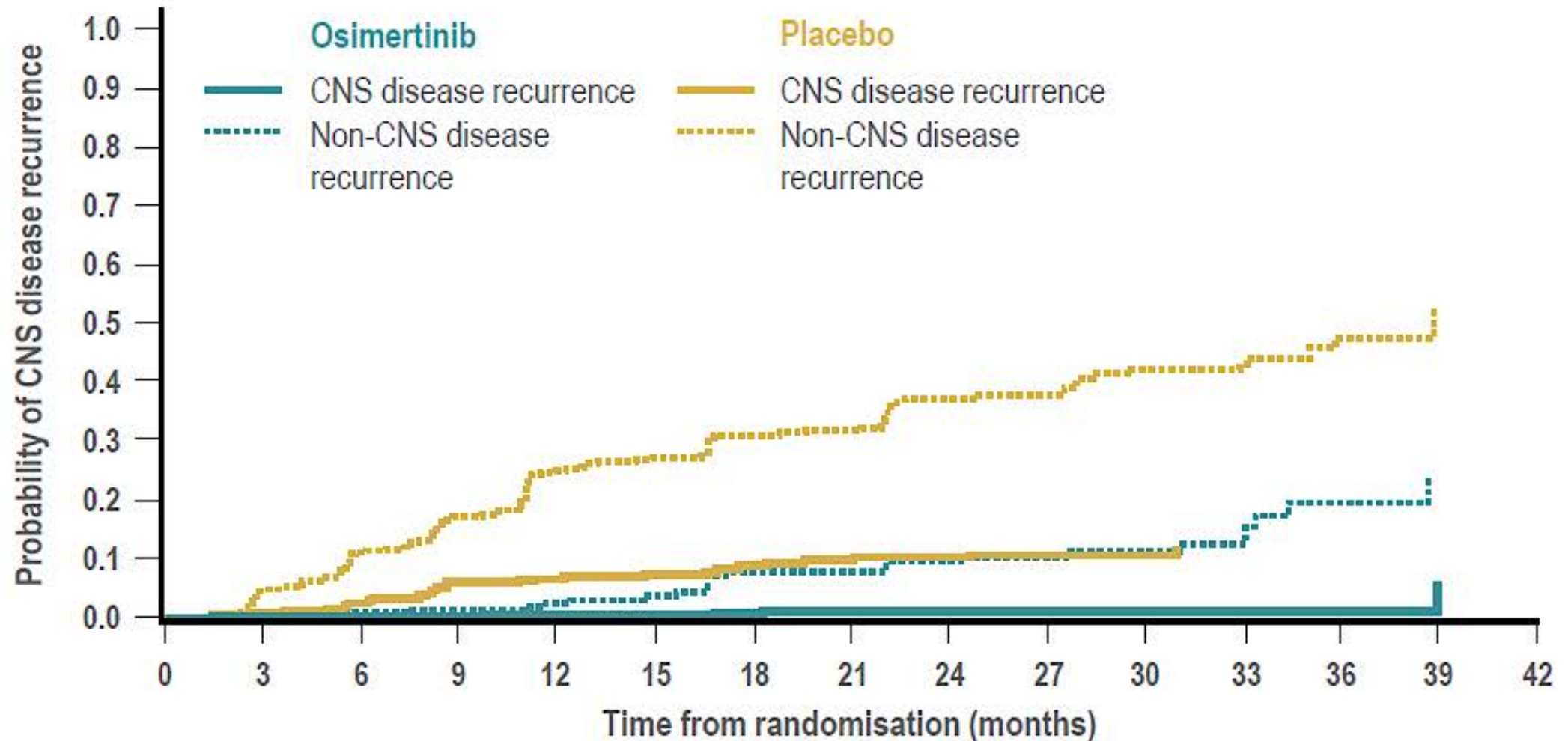
% (95% CI)	Stage IB	Stage II	Stage IIIA
Osimertinib	87 (77–93)	91 (82–95)	88 (79–94)
Placebo	73 (62–81)	56 (45–65)	32 (23–42)
Overall HR (95% CI)	0.50 (0.25–0.96)	0.17 (0.08–0.31)	0.12 (0.07–0.20)

Data cutoff: January 17, 2020.

Herbst RS, et al. ASCO 2020. Abstract LBA5.

Courtesy of Joel W Neal, MD, PhD

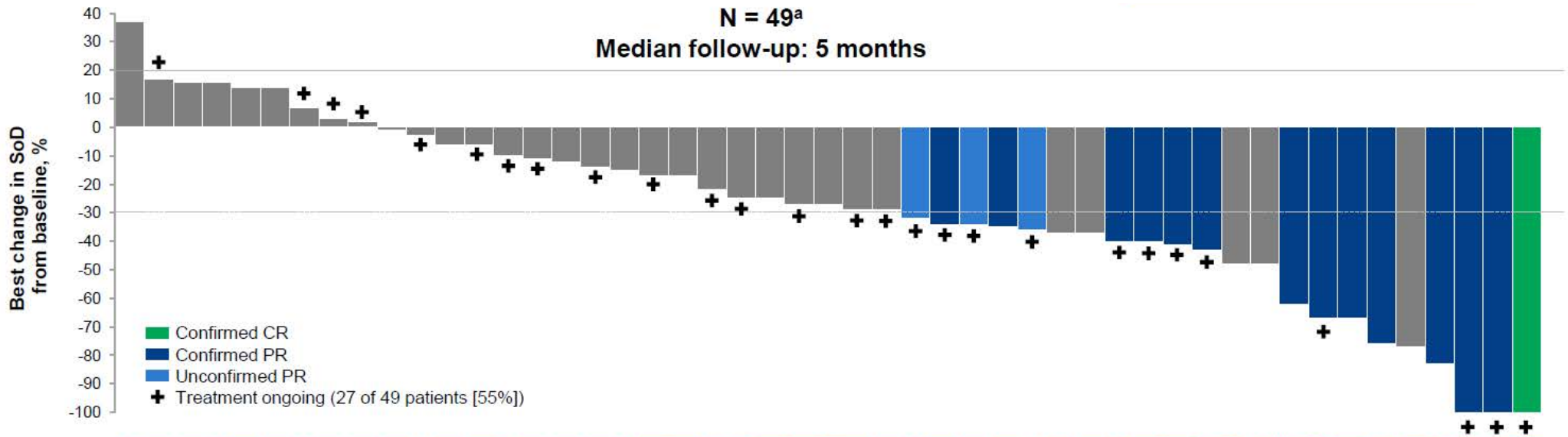
ADAURA: CNS Recurrence Risk



Patritumab Deruxtecan in EGFR mutant NSCLC

This is a HER3 directed antibody-drug conjugate

Tested in 49 pts with EGFR+ NSCLC resistant to prior therapy

[illegible]

A phase 1 study of patritumab deruxtecan in NSCLC (NCT03260491). Safety and activity in patients with EGFR-mutated NSCLC treated with 5.6 mg/kg patritumab deruxtecan. Data cutoff April 30, 2020.

^aThis analysis does not include 7 patients without post-baseline tumor assessments by the data cutoff date.

^bPerformed centrally using OncoPrint™ Comprehensive Assay v3 from pretreatment tumor tissue. Results from local testing are included for patients where tissue was unavailable for central analysis. Additional mutations detected from cfDNA in blood collected prior to treatment with U3-1402 using GuardantOMNI™ assay are included. For cfDNA analysis, a minor allelic frequency of 1% was used as a threshold for detection of mutations.

The copy number data from cfDNA are not shown

Patritumab Deruxtecan in EGFR mutant NSCLC

AE's appear generally tolerable

Patritumab deruxtecan continued to demonstrate a manageable safety profile

- The most common grade ≥ 3 TEAEs were thrombocytopenia (16 patients [28%]) and neutropenia (11 patients [19%])
- TEAEs associated with discontinuation (9%) included fatigue (n = 2), decreased appetite (n = 1), ILD (n = 1), pneumonitis (n = 1), and URTI (n = 1)
 - There were no discontinuations due to thrombocytopenia or neutropenia
- Three (5.3%) ILD events were adjudicated by an independent central review committee as being related to treatment
- There were no treatment-related TEAEs associated with death

TEAEs (regardless of causality), n (%)	N = 57
TEAEs	57 (100)
Grade ≥ 3	38 (67)
Associated with discontinuation	5 (9)
Associated with dose reduction	10 (18)
Associated with dose interruption	17 (30)
Associated with death	3 (5)
Treatment-emergent SAEs	21 (37)
Grade ≥ 3	18 (32)
Treatment related	11 (19)

TEAEs in $\geq 20\%$ of patients, n (%)	N = 57	
	All grades	Grade ≥ 3
Fatigue	33 (58)	5 (9)
Nausea	31 (54)	2 (4)
Thrombocytopenia^a	30 (53)	16 (28)
Decreased appetite	20 (35)	1 (2)
Neutropenia^b	19 (33)	11 (19)
Vomiting	17 (30)	1 (2)
Alopecia	17 (30)	NA
Anemia^c	15 (26)	5 (9)
Constipation	14 (25)	0

Regulatory and reimbursement issues aside, which adjuvant systemic therapy would you generally recommend for a patient with Stage IIB nonsquamous NSCLC and an EGFR exon 19 deletion?

1. Chemotherapy
2. Osimertinib
3. Chemotherapy followed by osimertinib
4. Other

What would you most likely recommend as consolidation treatment for a patient with locally advanced NSCLC who has completed chemoradiation therapy and is found to have an EGFR activating mutation?

1. Durvalumab
2. Osimertinib
3. Durvalumab + osimertinib
4. Durvalumab followed by osimertinib
5. Other

Agenda

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Module 3: EGFR Exon 20 Insertion

- **Key Relevant Data Sets**

- ECOG-ACRIN 5162: Osimertinib 160 mg
- Amivantamab: Anti-EGFR-MET bispecific antibody

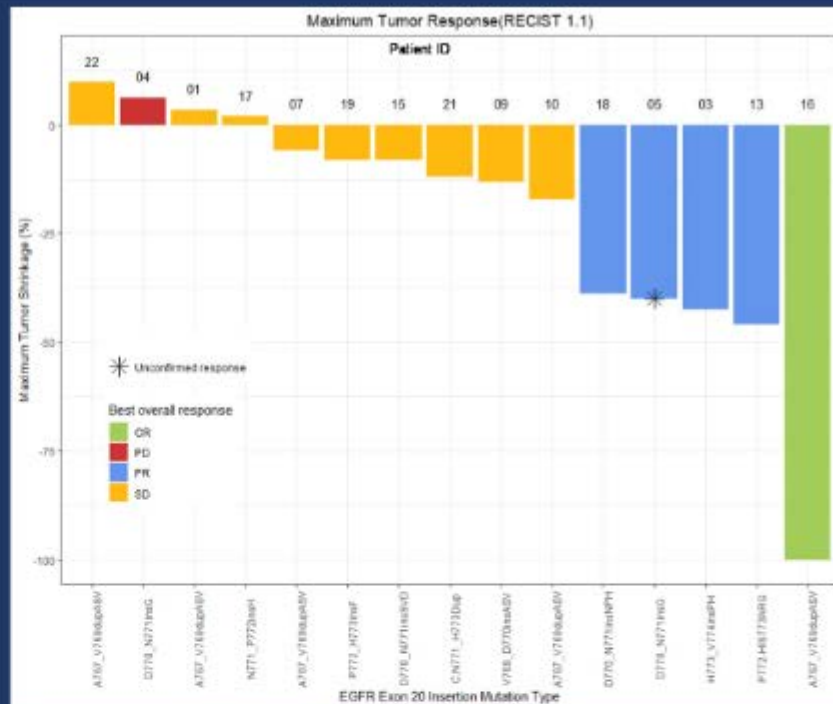
Osimertinib in EGFR Exon 20 insertion NSCLC

Exon 20 NSCLC comprises ~4% of EGFR+ NSCLC and is resistant to 1st and 2nd generation EGFR TKI therapy (Afatinib PFS ~3 months)

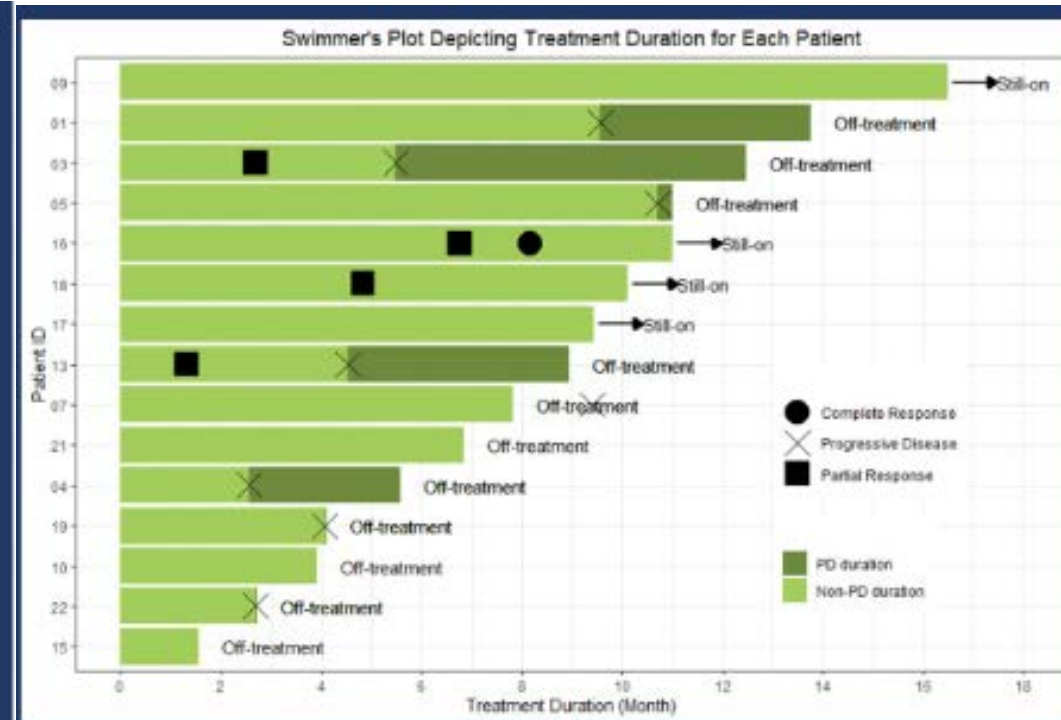
Fig 1. Waterfall Plot

OVERALL EFFICACY:

- **Confirmed ORR:**
4/17, 24%
- **DCR:** 14/17, 82%
- **mPFS:** 9.6 mo
(95% CI, 4.1, 10.7)
- **mDOR:** NA
(95% CI, 4.7, NA)

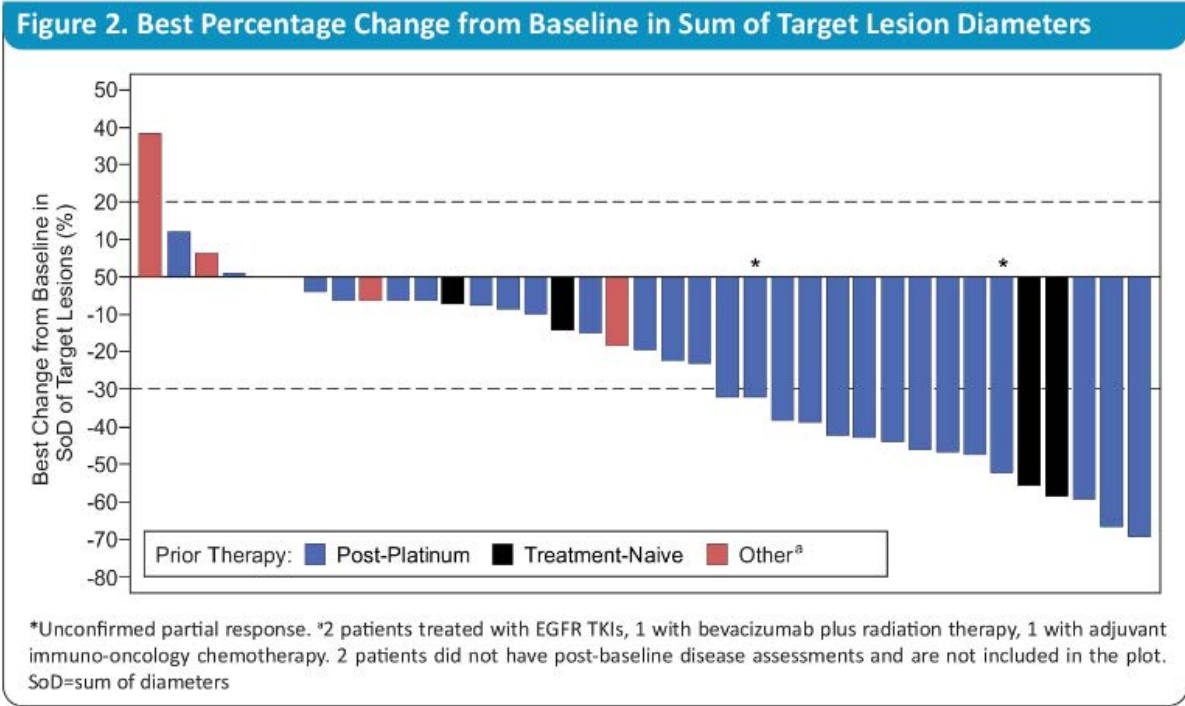


PR- partial response, SD- stable disease, PD- progressive disease, NA- not evaluable



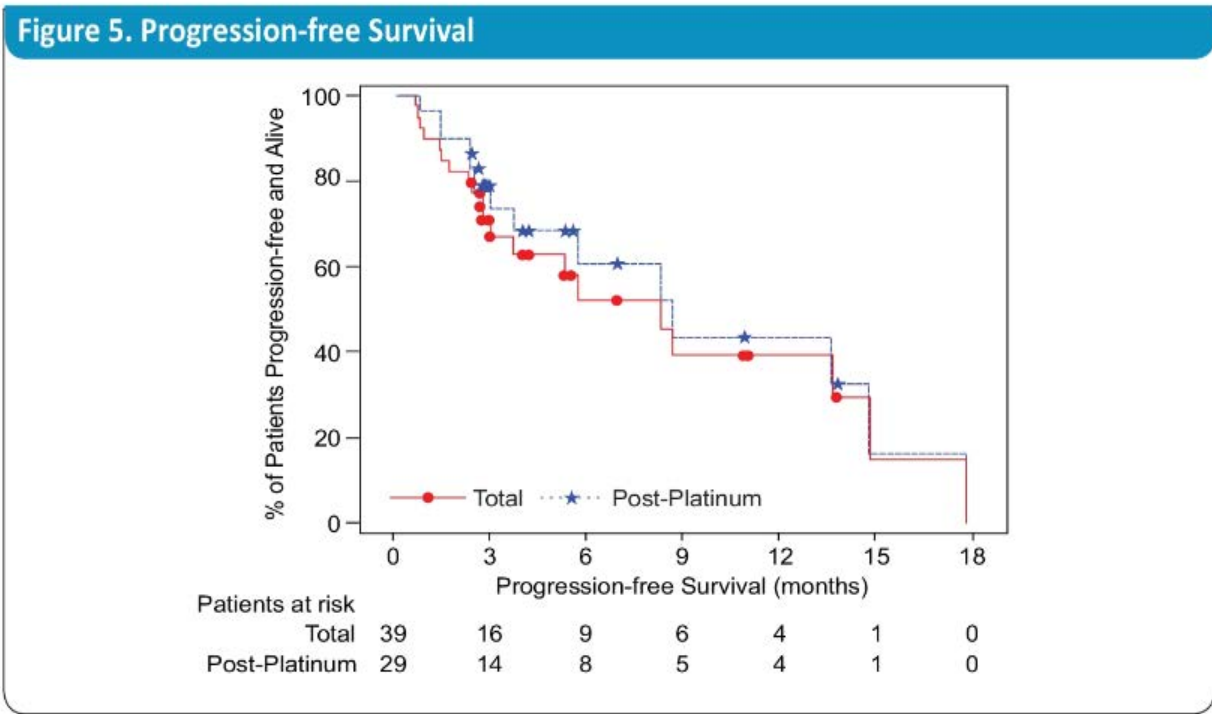
Amivantamab in EGFR Exon 20 insertion NSCLC

Amivantamab is an EGFR/MET bispecific antibody
39 patients – RR 36% and PFS 8.3 months



- The overall response rate (ORR), confirmed responses only, was 36% (95% confidence interval [CI], 21–53), with 14/39 patients achieving a partial response.
- The ORR in post-platinum patients was 41% [95% CI, 24–61]).
- The clinical benefit rate (partial response or better or stable disease of at least 12 weeks [2 disease assessments]) was 67% (95% CI, 50–81) for all patients and 72% (95% CI, 53–87) for post-platinum patients.

- Median progression-free survival (mPFS) was 8.3 months (95% CI, 3.0–14.8) among all patients, with significant early censoring.
- Post-platinum patients had mPFS of 8.6 months (95% CI, 3.7–14.8).



Agenda

Case Presentation: Dr Deutsch – 67-year-old man

Module 1: ROS1 Rearrangements

Module 2: EGFR Exon 19 Deletion; Exon 21 (L858R) Point Mutation

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Module 4: HER2 Amplification/Mutation

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Module 7: RET Fusions

Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

Module 4: HER2 Amplification/Mutation

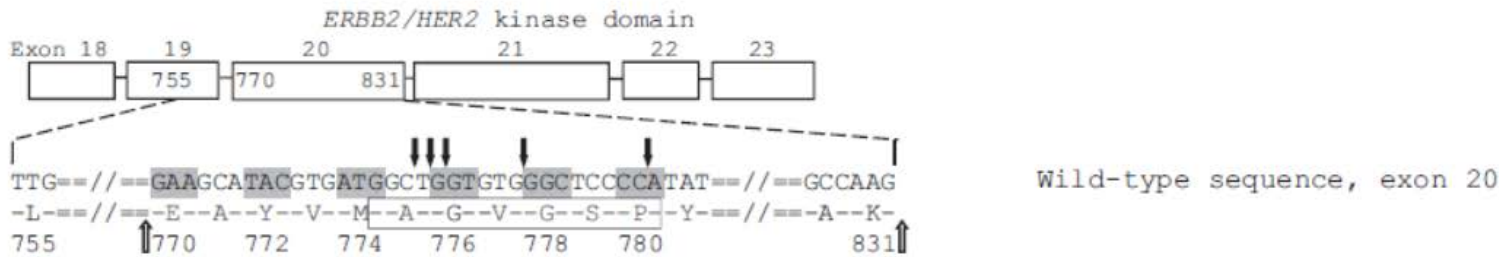
- **Key Relevant Data Set**
 - DESTINY-Lung01: Trastuzumab deruxtecan (T-DXd)

HER2 activating mutations in lung cancer

- 2-4% of lung cancers
- Most common *HER2* mutation is exon 20 insYVMA
- More common in women, never-smokers

A

Schematic organization of *ERBB2* kinase domain



B

Spectrum of *ERBB2*/HER2 mutations

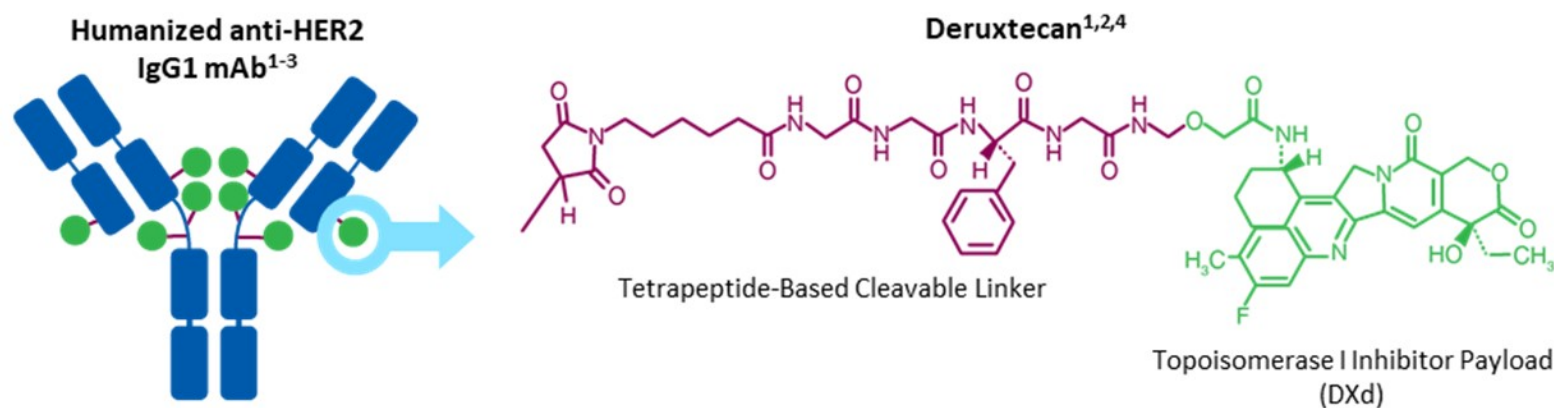
Mut size	Total Cases (n = 25)	Nucleotide sequence*	CDS mutation (inserted sequence)	Amino acid mutation
12-bp ins	19 (76%)	TTG==//==GAAGCATACGTGATGGCTATACGTGATGGCTGGTGTGGGCTCCCATAT -L-==//==E--A--Y--V--M--A--Y--V--M--A--G--V--G--S--P--Y	c.2324_2325ins12 (ATACGTGATGGC duplication*)	p.Ala775_Gly776insTyrValMetAla



Trastuzumab deruxtecan

T-DXd is an ADC with 3 components:

- A humanized anti-HER2 IgG1 mAb with the same amino acid sequence as trastuzumab
- A topoisomerase I inhibitor payload, an exatecan derivative
- A tetrapeptide-based cleavable linker



Payload mechanism of action:
topoisomerase I inhibitor

High potency of payload

High drug to antibody ratio ≈ 8

Payload with short systemic half-life

Stable linker-payload

Tumor-selective cleavable linker

Membrane-permeable payload

The clinical relevance of these features is under investigation.

ADC, antibody-drug conjugate.

1. Nakada T, et al. *Chem Pharm Bull* (Tokyo). 2019;67(3):173-185. 2. Ogitan Y, et al. *Clin Cancer Res*. 2016;22(20):5097-5108. 3. Trail PA, et al. *Pharmacol Ther*. 2018;181:126-142. 4. Ogitan Y, et al. *Cancer Sci*. 2016;107(7):1039-1046.



Memorial Sloan Kettering
Cancer Center.

Courtesy of Paul K Paik, MD

DESTINY-1 trial



DESTINY-Lung01 Study Design

An open-label, multicenter, phase 2 study (NCT03505710)

Patients

- Unresectable/metastatic nonsquamous NSCLC
- Relapsed/refractory to standard treatment
- HER2-expressing or HER2-activating mutation^a
- No prior HER2-targeted therapy, except pan-HER TKIs



Cohort 1 (n = 42)

HER2 expressing (IHC 3+ or IHC 2+)

Cohort 2 (n = 42)

HER2 mutated

T-DXd 6.4 mg/kg q3w

Primary endpoint

- Confirmed ORR by independent central review

Data cutoff: November 25, 2019

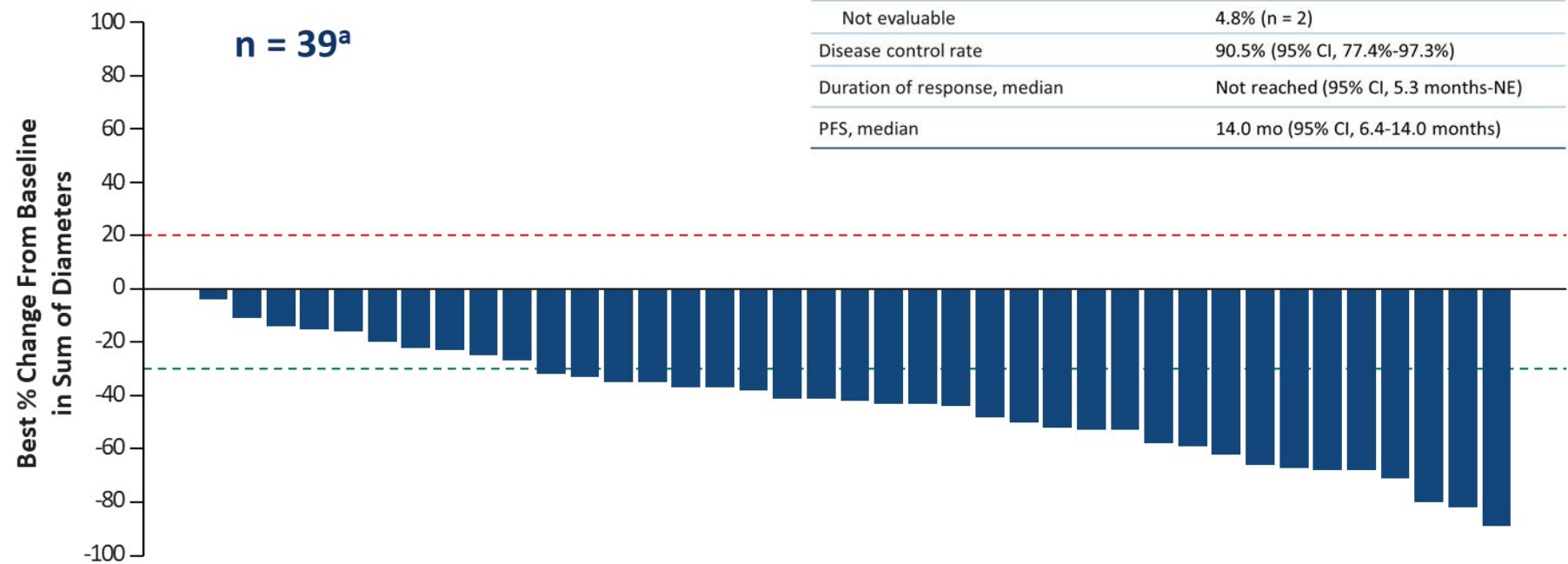
- 45.2% of patients (19/42) in Cohort 2 remained on treatment
- 54.8% discontinued, primarily for progressive disease and adverse events (21.4% each)

^a Based on local assessment of archival tissue.



DESTINY-1 efficacy

Best Change in Tumor Size



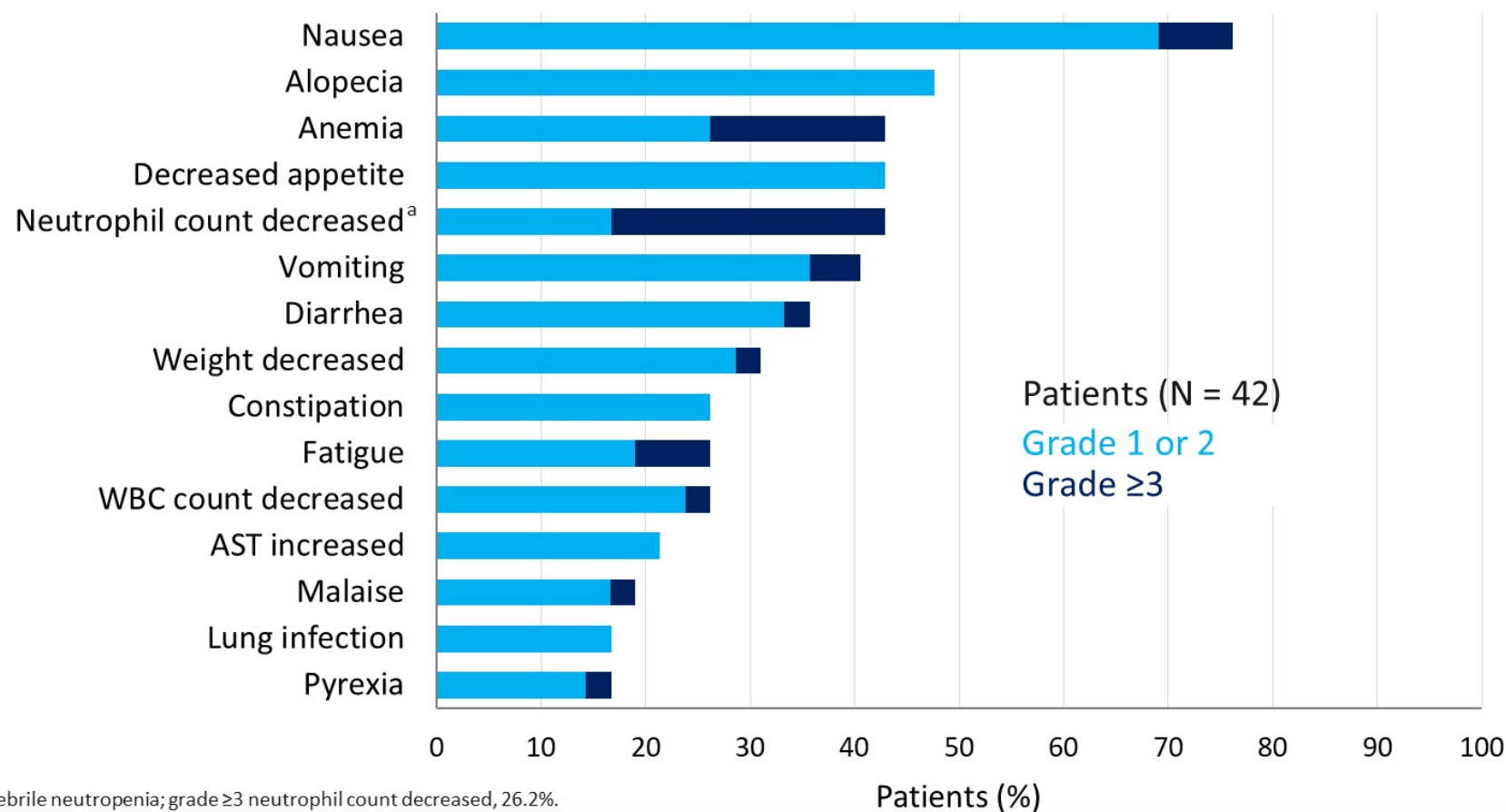
Based on independent central review. Baseline is last measurement taken before enrollment. Shown is best (minimum) percent change from baseline in the sum of diameters for all target lesions.

^a One patient was missing a baseline assessment and 2 additional patients were missing post-baseline assessments.



Trastuzumab deruxtecan side effects

Treatment-Emergent Adverse Events in >15% of Patients



DESTINY-Lung01: AEs of Special Interest – Interstitial Lung Disease

n (%)	All Patients (N = 42)					Any Grade/ Total
	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	
Interstitial lung disease	0 ^a	5 (11.9)	0	0	0	5 (11.9)

- Median time to onset of investigator-reported ILD was at 86 days (range, 41-255 days)
- 4 patients had drug withdrawn and 1 had drug interrupted
- All patients received steroid treatment
- 2 patients recovered, 1 recovered with sequelae, 1 was recovering, and 1 had not recovered by data-cutoff
- No grade 5 ILD was observed in this cohort

Regulatory and reimbursement issues aside, what would be your preferred first-line treatment for a patient with metastatic nonsquamous NSCLC with a HER2 mutation and a TPS of 10%?

1. Carboplatin/pemetrexed/pembrolizumab
2. Atezolizumab/carboplatin/taxane
3. Ipilimumab/nivolumab
4. Trastuzumab deruxtecan
5. Trastuzumab +/- pertuzumab
6. Pyrotinib
7. T-DM1
8. Neratinib
9. Other

Agenda

Case Presentation: Dr Deutsch – 67-year-old man

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Module 6: NTRK Gene Fusion

Module 7: RET Fusions

Module 8: MET Exon 14 Skipping Mutations

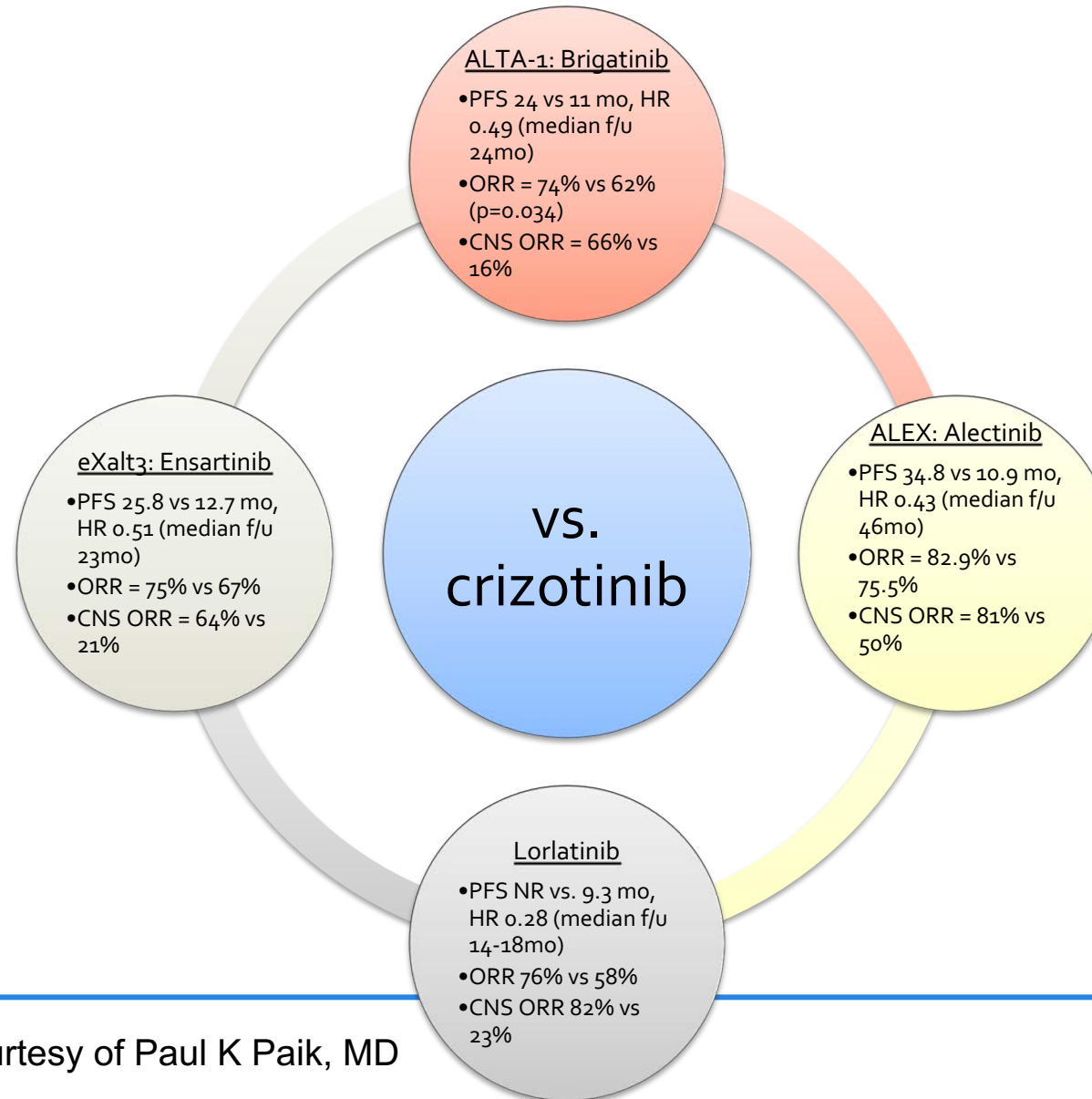
Module 9: KRAS G12C Mutation

Module 5: ALK Rearrangement

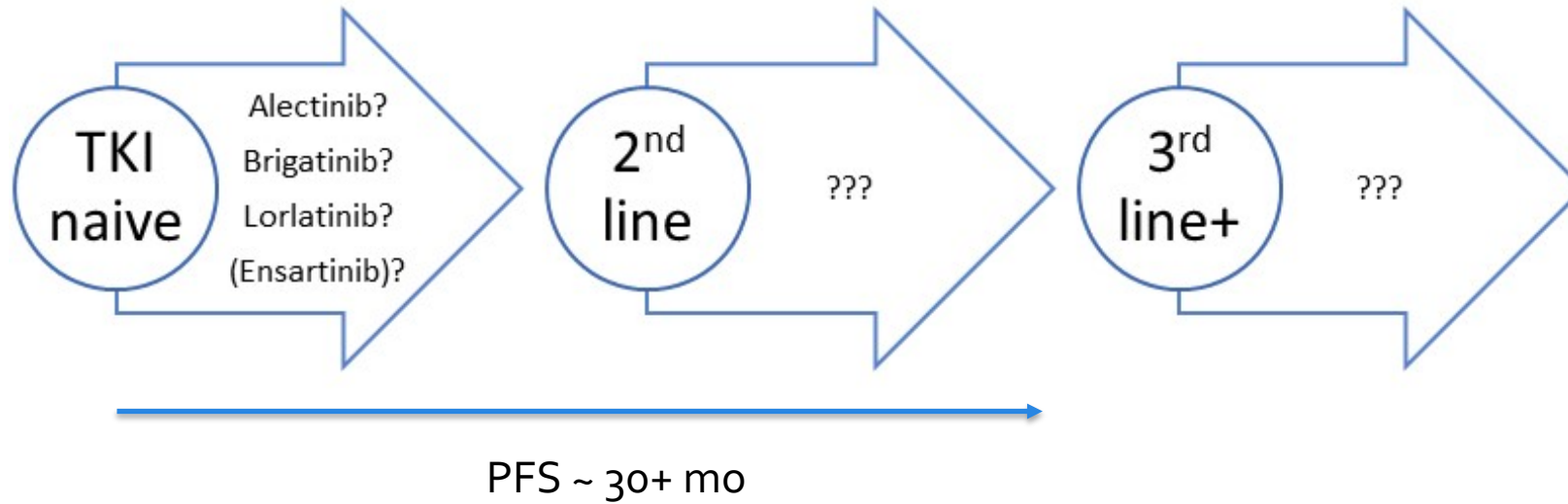
- **Key Relevant Data Sets**

- ALTA-1L: Brigatinib vs crizotinib
- eXalt3: Ensartinib vs crizotinib
- ALEX: Updated OS and final PFS data
- CROWN: First-line lorlatinib vs crizotinib

First-line ALK inhibitor trial readouts in 2020- are things clearer?



ALK+ lung cancer sequencing c. 2021



Which of the following ALK inhibitors is the most common first-line treatment used by lung cancer clinical investigators for metastatic nonsquamous NSCLC with an ALK rearrangement?

1. Crizotinib
2. Alectinib
3. Brigatinib
4. Lorlatinib
5. Ceritinib
6. I don't know

Agenda

Case Presentation: Dr Deutsch – 67-year-old man

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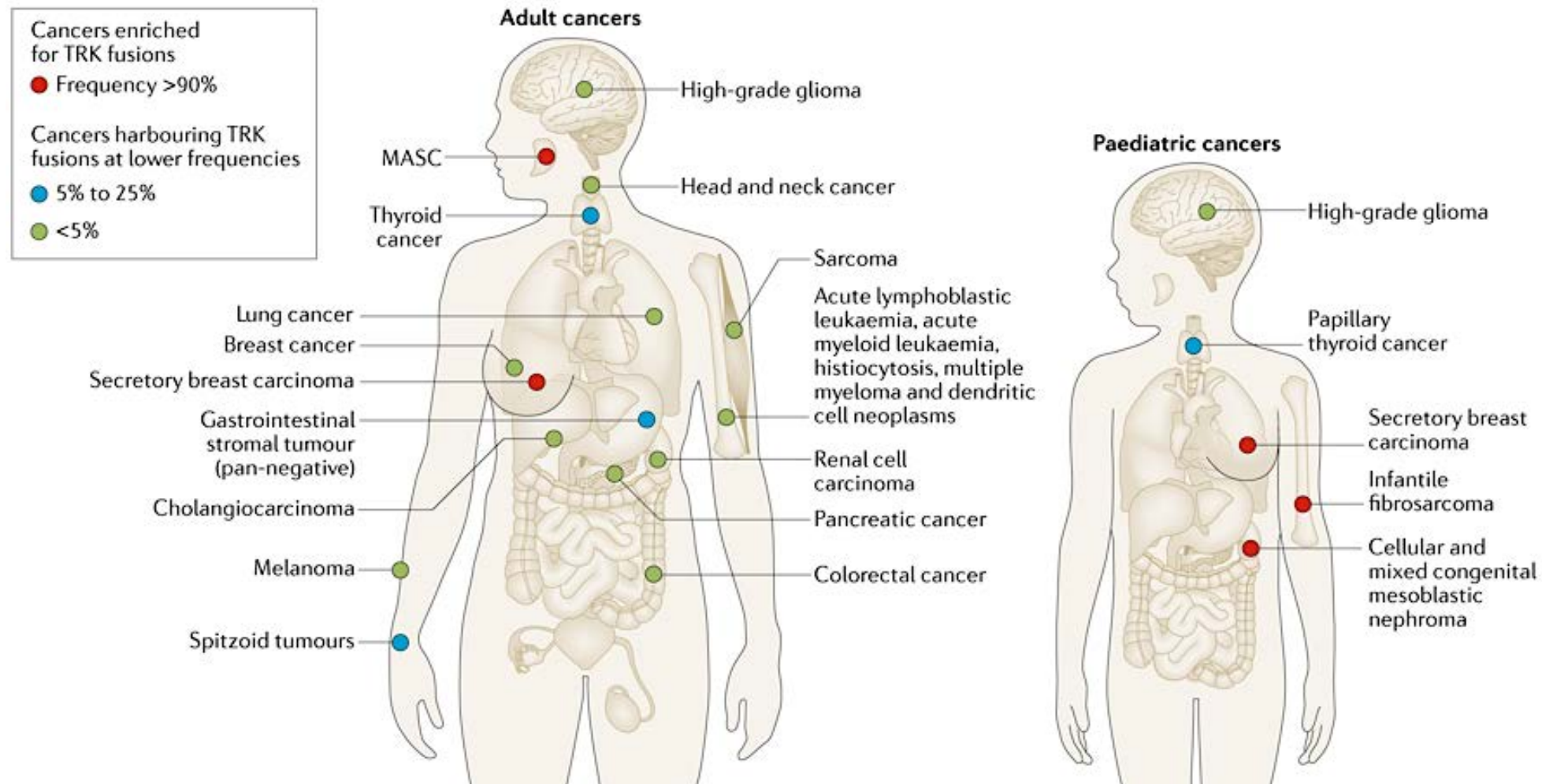
Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

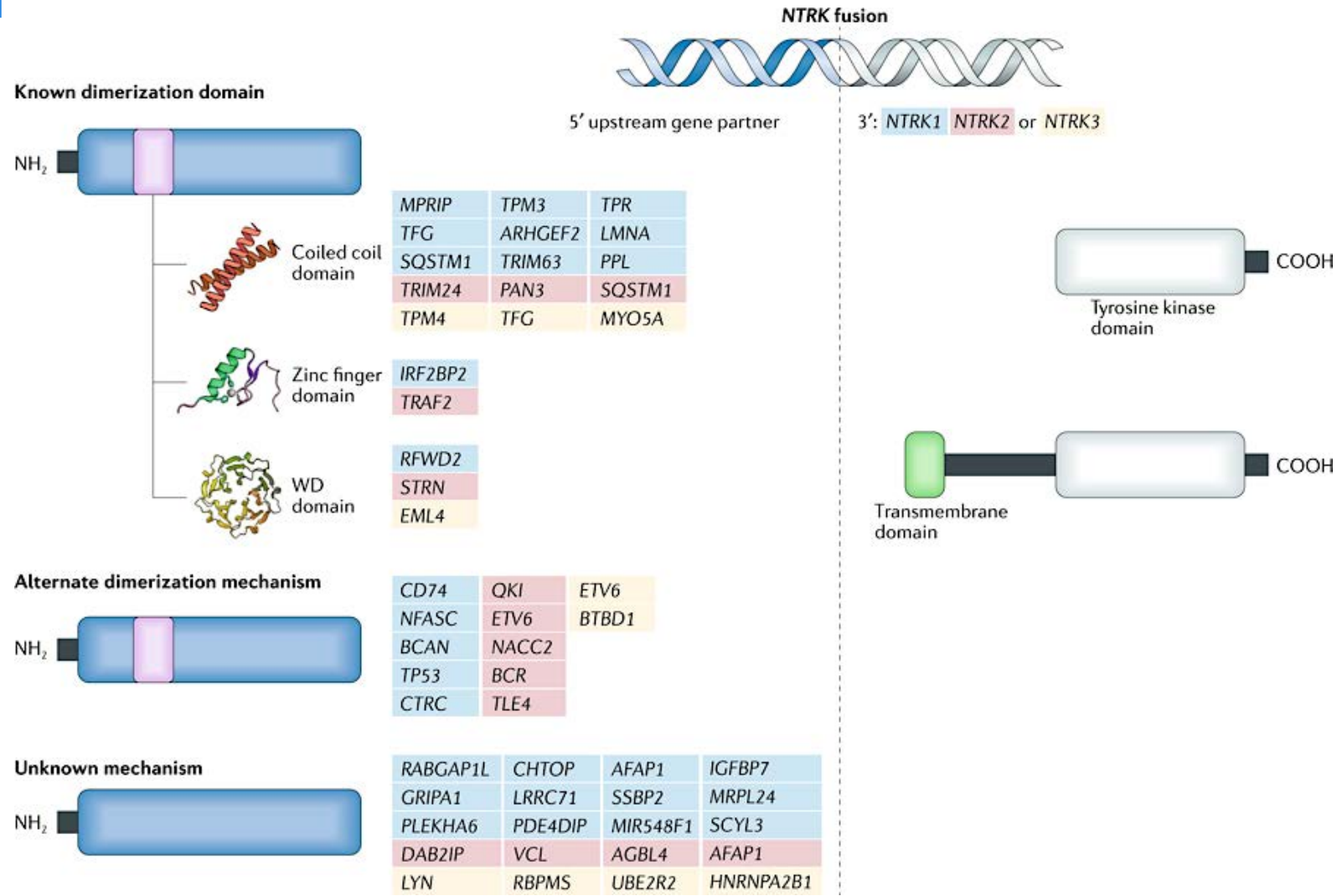
Module 6: NTRK Fusion

- **Key Relevant Data Sets**
 - Larotrectinib for TRK fusion
 - Entrectinib for solid tumors with NTRK fusion

TRK fusions occur in multiple cancer types ...



... and have multiple partners leading to constitutive dimerization



First generation TRK inhibitors are highly effective

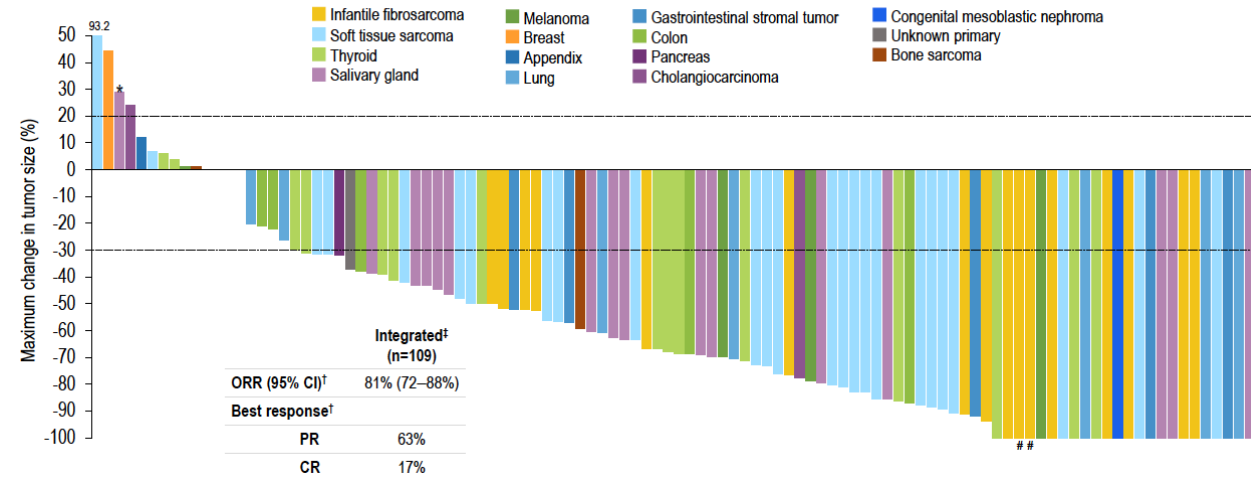
Larotrectinib

ORR 81%

(95% CI 72-88%, n=109)

Median DoR not reached

Median PFS not reached



FDA approved for NTRK fusion+ cancers November 2019

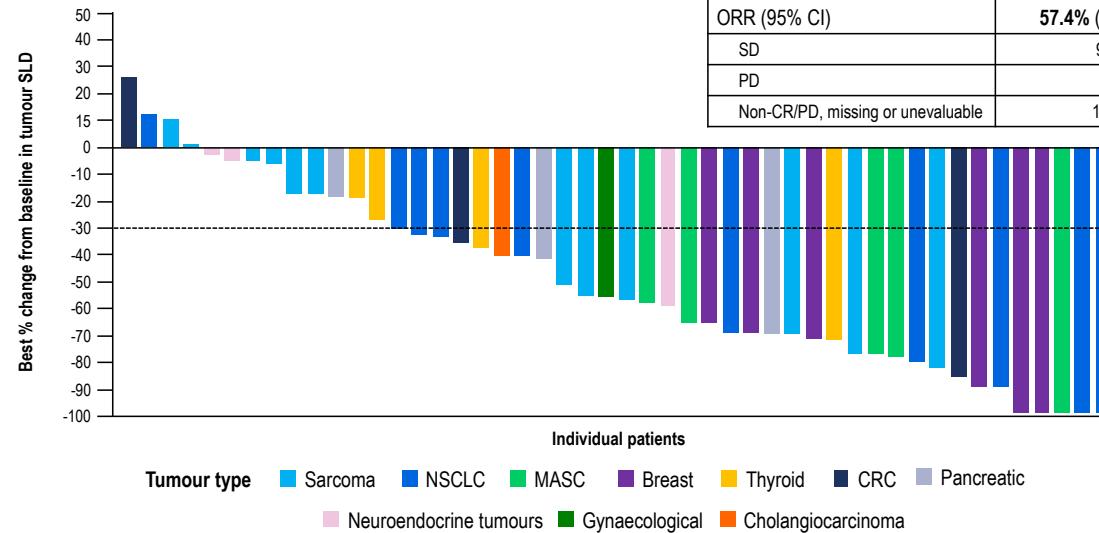
Entrectinib

ORR 57%

(95% CI 43-71%, n=54)

Median DoR 10 mos

Median PFS 11 mos



FDA approved for NTRK fusion+ cancers August 2019



Memorial Sloan Kettering
Cancer Center

Courtesy of Paul K Paik, MD

Drilon et al. NEJM 2018
Doebele et al. Lancet Oncol 2020

For a patient with metastatic nonsquamous NSCLC with an NTRK gene fusion and a PD-L1 TPS of 10%, in what line of therapy should targeted treatment (eg, larotrectinib, entrectinib) be used?

1. First line
2. Second line
3. Third line
4. Fourth line and beyond

Agenda

Case Presentation: Dr Deutsch – 67-year-old man

Module 1: ROS1 Rearrangements

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Module 7: RET Fusions

Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

Module 7: RET Fusions

- **Key Relevant Data Sets**
 - ARROW: Pralsetinib – Registrational data set
 - Selpercatinib for disease with RET fusion

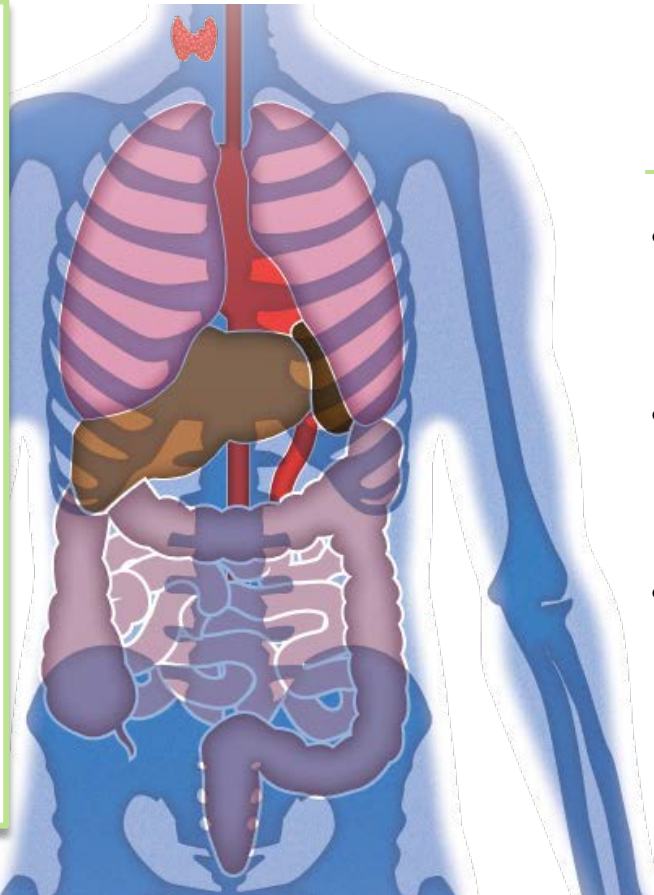
RET Alterations: Diverse Oncogenic Drivers Lacking Targeted Therapeutic Approach

**Non-small cell lung cancer:
~1-2% RET fusions^{1,2}**

Advanced medullary thyroid
cancer: ~90% RET mutations³

Papillary thyroid cancer:
~20% RET fusions⁴

Multiple other tumor types
including esophageal, breast,
melanoma, colorectal, and
leukemia: <1% RET-altered^{5,6}



NSCLC patients with RET fusions have not significantly benefited from existing therapy

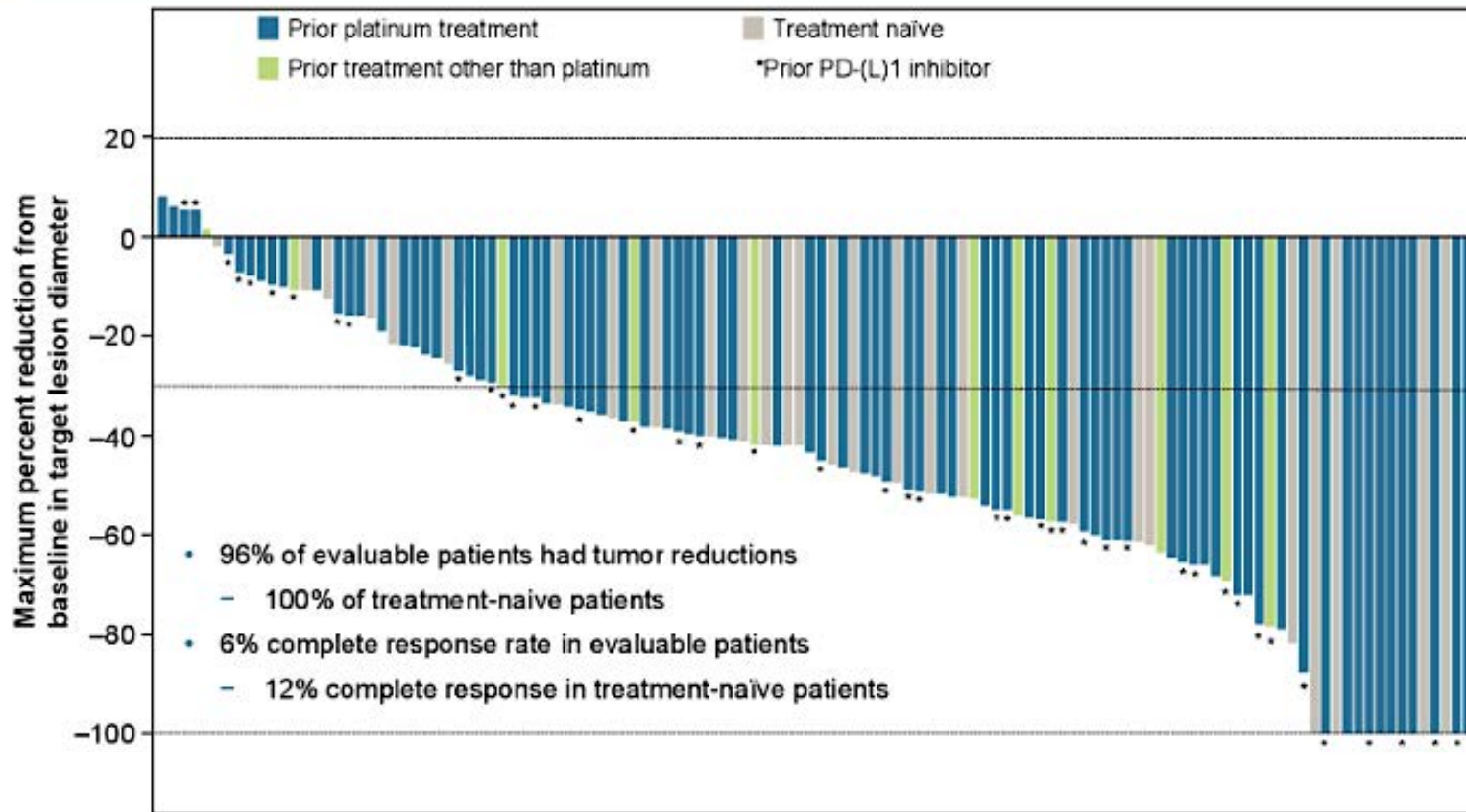
- Chemotherapy: nonspecific, low response rates, significant toxicity
- Checkpoint inhibition: Preliminary evidence for lack of benefit in RET-altered NSCLC⁷
- Multikinase inhibitors: ↓ activity, ↑ off-target toxicity^{8,9}

Pralsetinib in RET+ NSCLC

RET rearrangements are present in 1-2% of NSCLC

Best detected with FISH, DNA NGS or RNA-based assays

Tumor shrinkage (Blinded Independent Centralized Review)



Patients

PD-(L)1, programmed cell death/programmed cell death ligand-1

65% ORR (independent)

Median PFS not reached

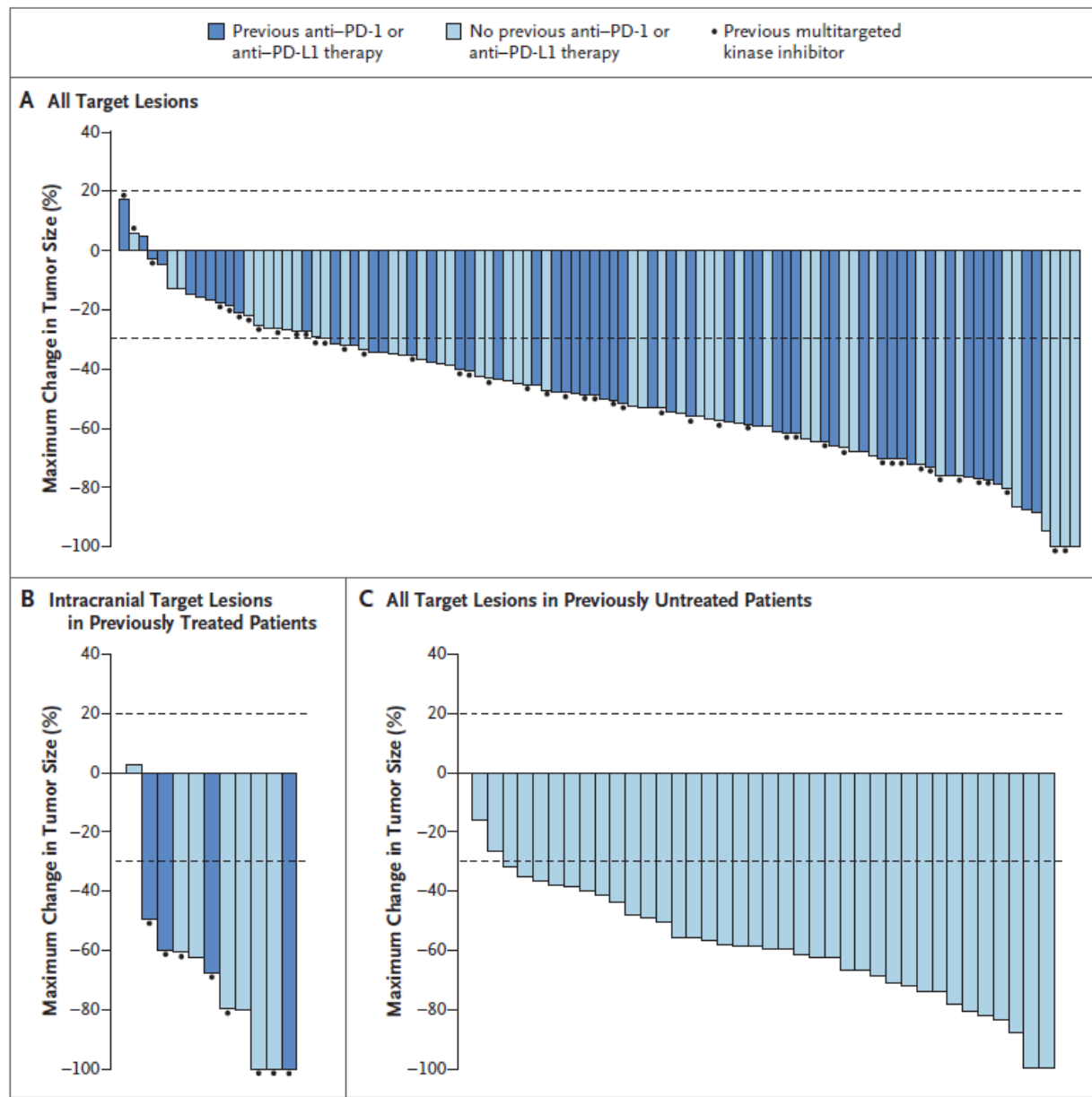
56% (5/9) pts with intracranial response

Pralsetinib in RET+ NSCLC

Note Transaminitis and pneumonitis

Treatment-related adverse events in ≥10% of patients (N=354, all tumor types)		
AE preferred term	All patients (n=354)	
	Any grade	Grade ≥3
AST increased	31%	2%
Anemia	22%	8%
ALT increased	21%	1%
Constipation	21%	1%
Hypertension	20%	10%
Neutropenia	19%	10%
Diarrhea	14%	1%
White blood cell count decreased	14%	3%
Dysgeusia	13%	0%
Blood creatinine increased	12%	0%
Fatigue	12%	1%
Neutrophil count decreased	12%	4%
Dry mouth	11%	0%
Hyperphosphatemia	11%	<1%
Asthenia	10%	1%

Selpercatinib in RET+ NSCLC



Prior therapy:

64% ORR

PFS 16.5 mo

1st line:

85% ORR

PFS NR (?>18 mo)

Selpercatinib in RET+ NSCLC

Note QT prolongation

Table 3. Adverse Events in 144 Patients with RET Fusion–Positive NSCLC Who Received Selpercatinib.*								
Adverse Event	Adverse Events, Regardless of Attribution (N = 144)					Treatment-Related Adverse Events (N = 144)		
	Grade 1	Grade 2	Grade 3	Grade 4	Any Grade	Grade 3	Grade 4	Any Grade
	<i>number of patients (percent)</i>							
Any adverse event	8 (6)	47 (33)	69 (48)	14 (10)	144 (100)	39 (27)	2 (1)	131 (91)
Diarrhea	46 (32)	18 (12)	5 (3)	0	69 (48)	2 (1)	0	36 (25)
Dry mouth	48 (33)	11 (8)	0	0	59 (41)	0	0	52 (36)
Hypertension	3 (2)	22 (15)	20 (14)	0	45 (31)	13 (9)	0	25 (17)
Increased aspartate aminotransferase level	18 (12)	11 (8)	12 (8)	2 (1)	43 (30)	7 (5)	1 (1)	32 (22)
Fatigue	26 (18)	16 (11)	0	0	42 (29)	0	0	19 (13)
Increased alanine aminotransferase level	14 (10)	6 (4)	15 (10)	3 (2)	38 (26)	11 (8)	2 (1)	29 (20)
Constipation	33 (23)	3 (2)	2 (1)	0	38 (26)	1 (1)	0	16 (11)
Nausea	32 (22)	5 (3)	1 (1)	0	38 (26)	0	0	14 (10)
Peripheral edema	29 (20)	6 (4)	0	0	35 (24)	0	0	19 (13)
Urinary tract infection	4 (3)	21 (15)	7 (5)	0	32 (22)	0	0	0
Headache	21 (15)	7 (5)	2 (1)	0	30 (21)	0	0	6 (4)
Rash	20 (14)	6 (4)	2 (1)	0	28 (19)	2 (1)	0	17 (12)
Abdominal pain	18 (12)	8 (6)	1 (1)	0	27 (19)	0	0	5 (3)
Cough	24 (17)	3 (2)	0	0	27 (19)	0	0	3 (2)
Increased blood creatinine level	21 (15)	3 (2)	0	0	24 (17)	0	0	13 (9)
Dyspnea	15 (10)	6 (4)	3 (2)	0	24 (17)	0	0	4 (3)
Vomiting	17 (12)	6 (4)	1 (1)	0	24 (17)	1 (1)	0	5 (3)
Prolonged QT on electrocardiography	9 (6)	7 (5)	7 (5)	0	23 (16)	3 (2)	0	14 (10)
Pyrexia	14 (10)	8 (6)	1 (1)	0	23 (16)	1 (1)	0	8 (6)
Dry skin	19 (13)	3 (2)	0	0	22 (15)	0	0	13 (9)
Thrombocytopenia	13 (9)	6 (4)	3 (2)	0	22 (15)	2 (1)	0	15 (10)

For a patient with metastatic nonsquamous NSCLC with a RET rearrangement and a PD-L1 TPS of 10%, in what line of therapy should targeted treatment (eg, selpercatinib, pralsetinib) be used?

1. First line
2. Second line
3. Third line
4. Fourth line and beyond

Agenda

Case Presentation: Dr Deutsch – 67-year-old man

Module 1: ROS1 Rearrangements

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Module 8: MET Exon 14 Skipping Mutations

Module 9: KRAS G12C Mutation

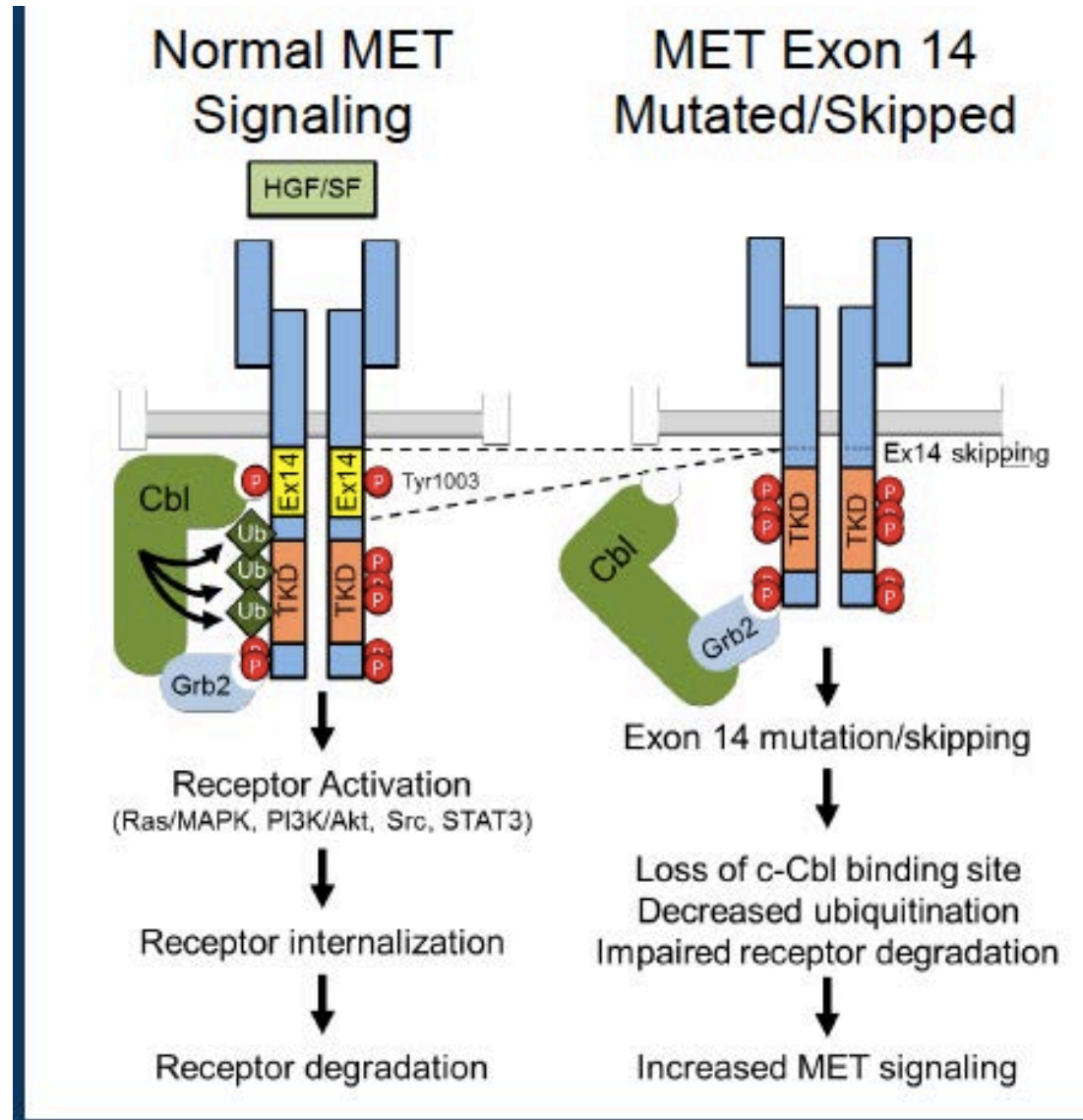
Module 8: MET Exon 14 Skipping Mutations

- **Key Relevant Data Sets**

- GEOMETRY mono-1: Capmatinib for MET exon 14 mutation or amplification
- Tepotinib for MET exon 14 skipping mutations

Met Exon 14 NSCLC

MET exon 14 alterations are present in 3-4% of NSCLC
Best detected with DNA NGS or RNA-based assays

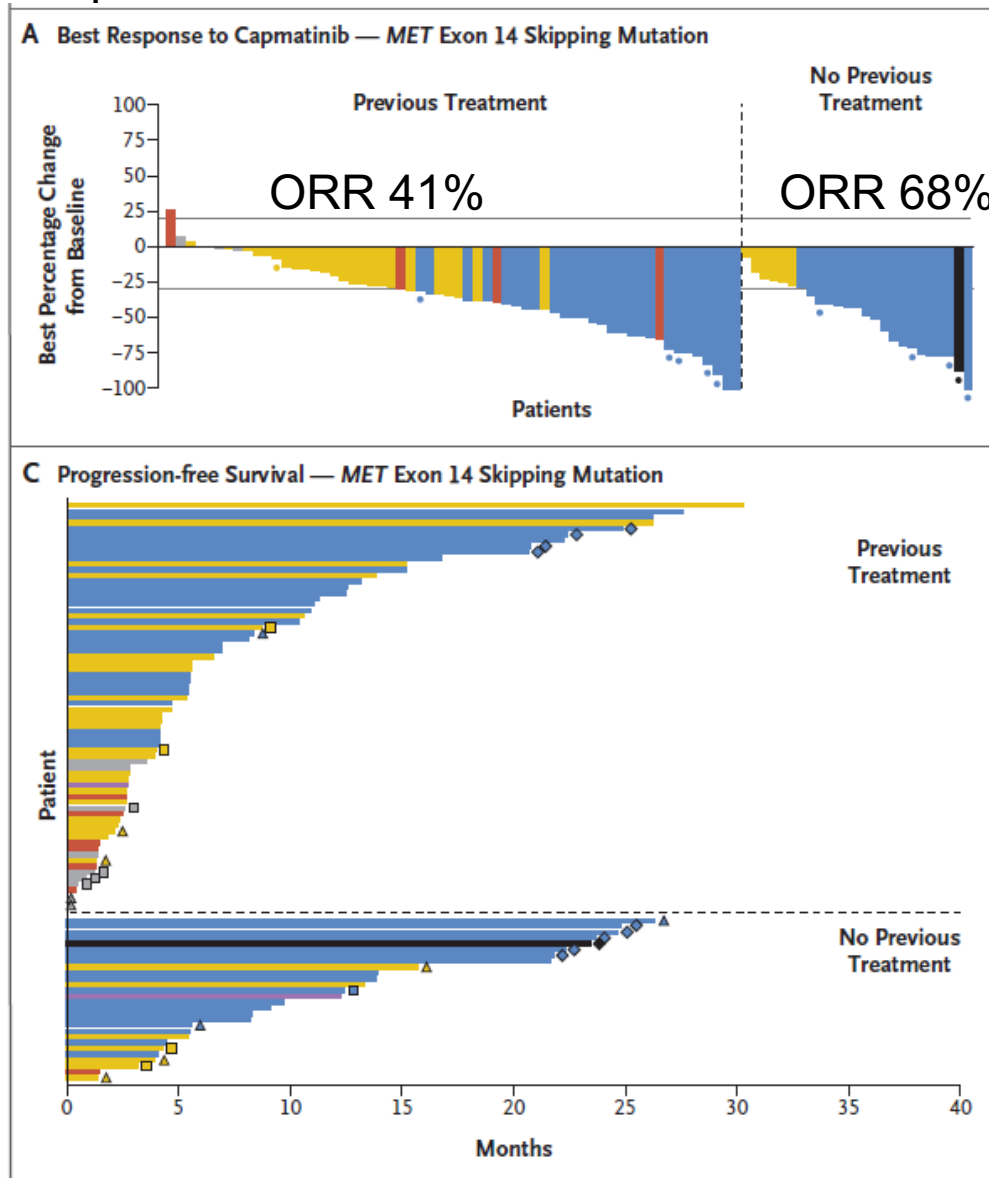


TCGA, *Nature*. 2014 Jul 31;511(7511):543-50.
Awad MM, et al, *J Clin Oncol*. 2016 Mar 1;34(7):721-30.
Paik PK, et al, *Cancer Discov*. 2015 Aug;5(8):842-9.
Frampton GM, et al, *Cancer Discov*. 2015 Aug;5(8):850-9.
Awad MM, et al, *J Clin Oncol*. 2016 Mar 10;34(8):879-81.

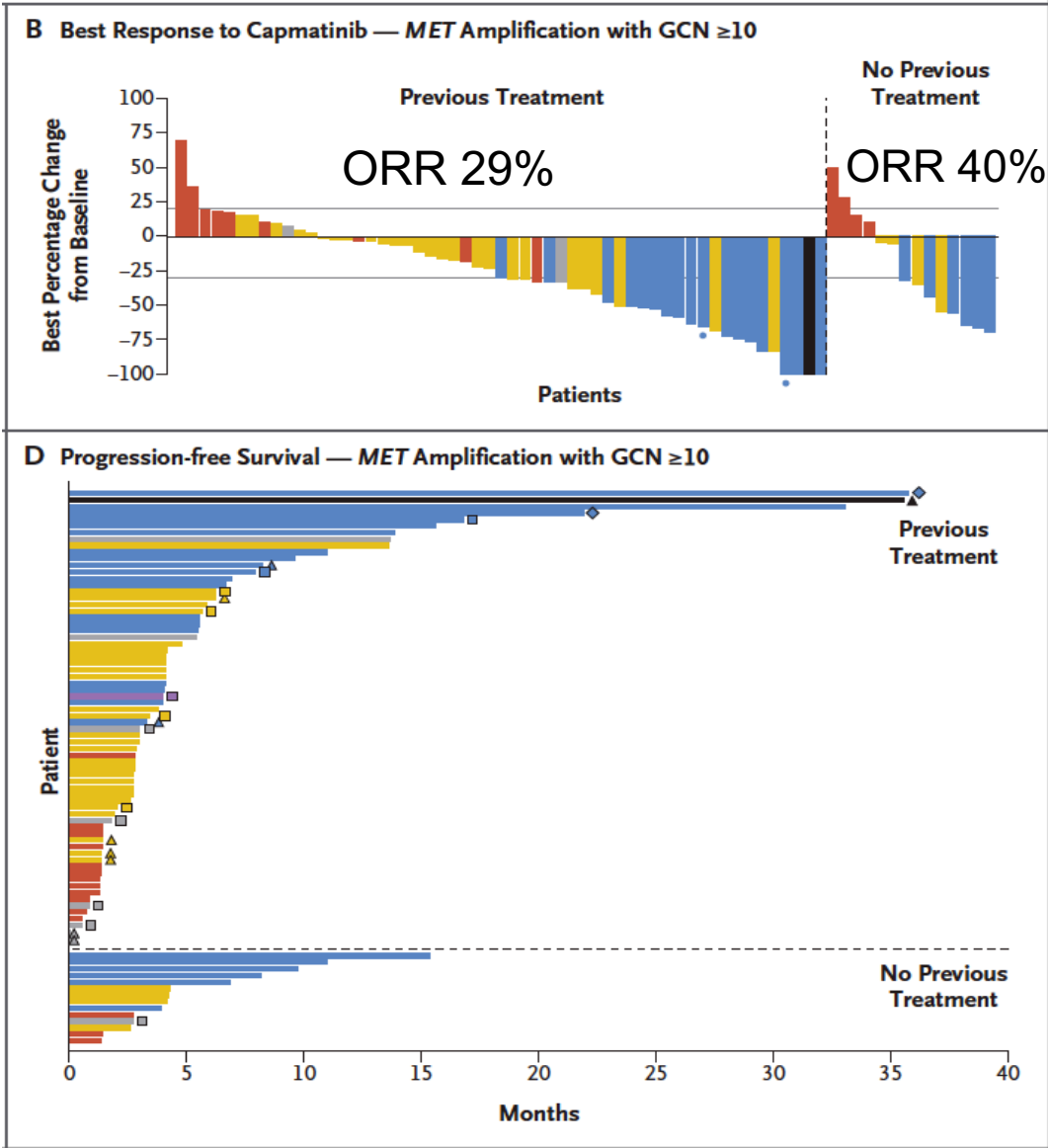
Courtesy of Joel W Neal, MD, PhD

Capmatinib in Met Exon 14 NSCLC

364 patients across all cohorts



Capmatinib in MET Amplification with Gene Copy Number ≥ 10



Capmatinib demonstrated limited activity in patients with MET-amplified NSCLC and tumor tissue with a gene copy number of less than 10

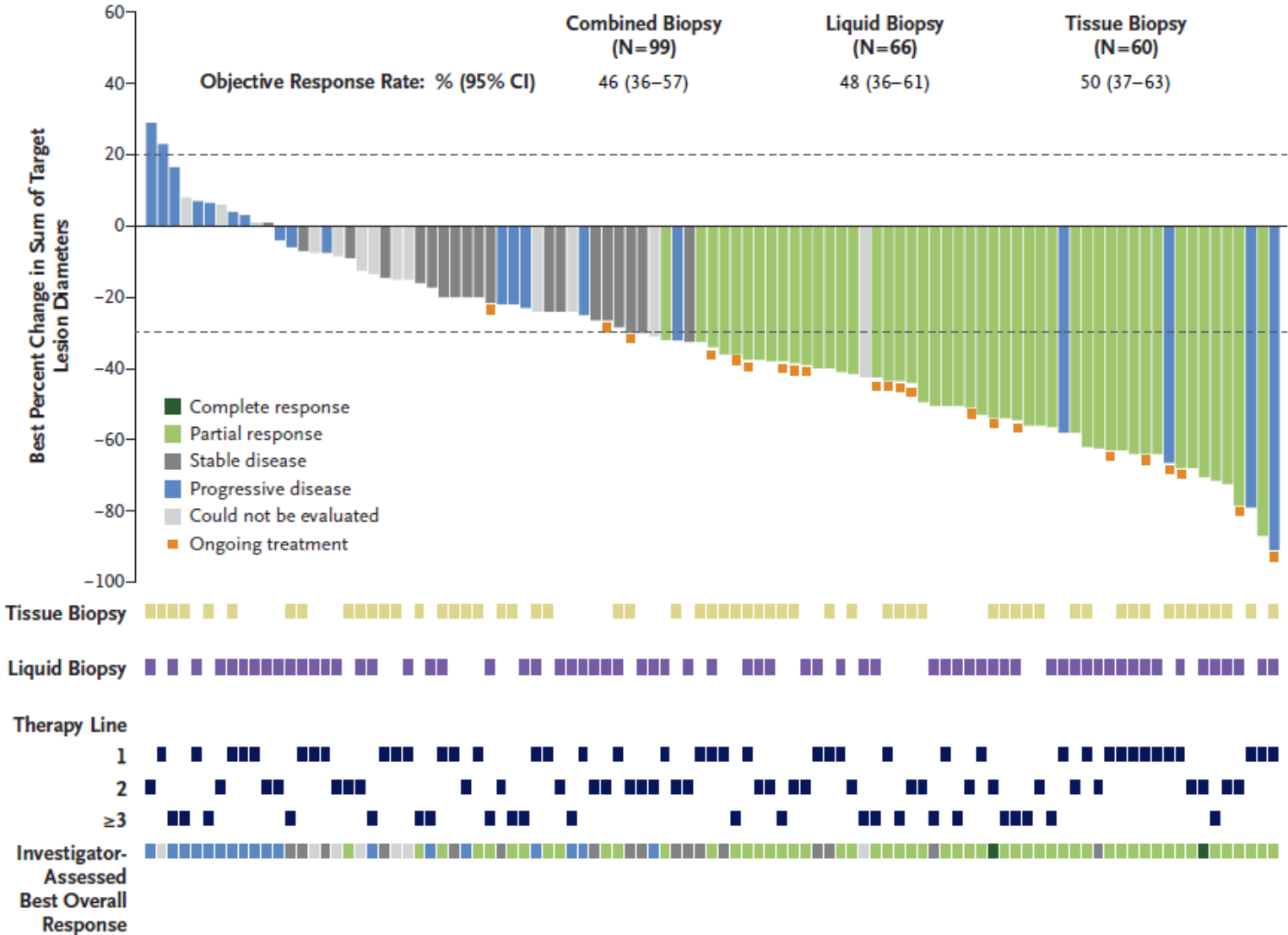
Tepotinib in Met Exon 14 NSCLC

152 patients across all cohorts, 99 pts for efficacy analysis

46% ORR (independent)

PFS 8.5 months

55% (6/11) with intracranial response



	Tepotinib, all (n=146)	Tepotinib no plat (n=71)	Tepotinib, prior plat (n=72)
Response Rate*	45%	42%	50%
Median DOR*	11.1 mo	10.8 mo	12.4 mo
Median PFS*	8.9 mo	8.5 mo	11.0 mo

Paik. NEJM. 2020

Mazieres NACLC 2020 Oral abstract

Courtesy of Joel W Neal, MD, PhD

For a patient with metastatic nonsquamous NSCLC with a MET exon 14 skipping mutation and a PD-L1 TPS of 10%, in what line of therapy should targeted treatment (eg, capmatinib, tepotinib) be used?

1. First line
2. Second line
3. Third line
4. Fourth line and beyond

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Module 9: KRAS G12C Mutation

Module 9: KRAS G12C Mutation

- **Key Relevant Data Set**
 - Sotorasib (AMG 510): Clinical benefit and biomarkers

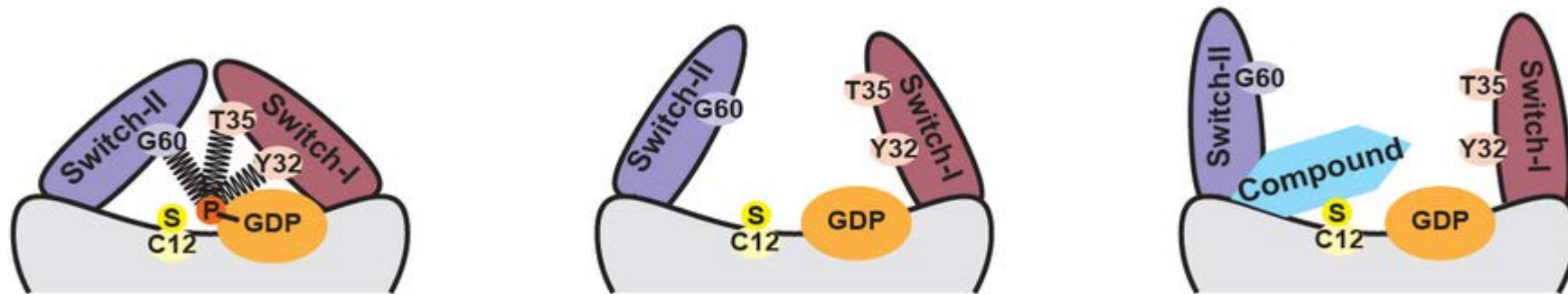
How many patients with lung cancer and a KRAS G12C mutation are currently in your practice?

1. None
2. 1
3. 2
4. 3
5. 4
6. 5
7. More than 5

KRAS G12C allosteric inhibitors: how they work

- RAS has picomolar affinity for GTP/GDP making competitive inhibition difficult
- RAS mutations impair GTP hydrolysis to GDP, causing constitutive activation
- Novel compound irreversibly binds GTP pocket through cysteine affinity at G12C
- Sos-mediated nucleotide exchange impairment leading to inhibition of KRAS

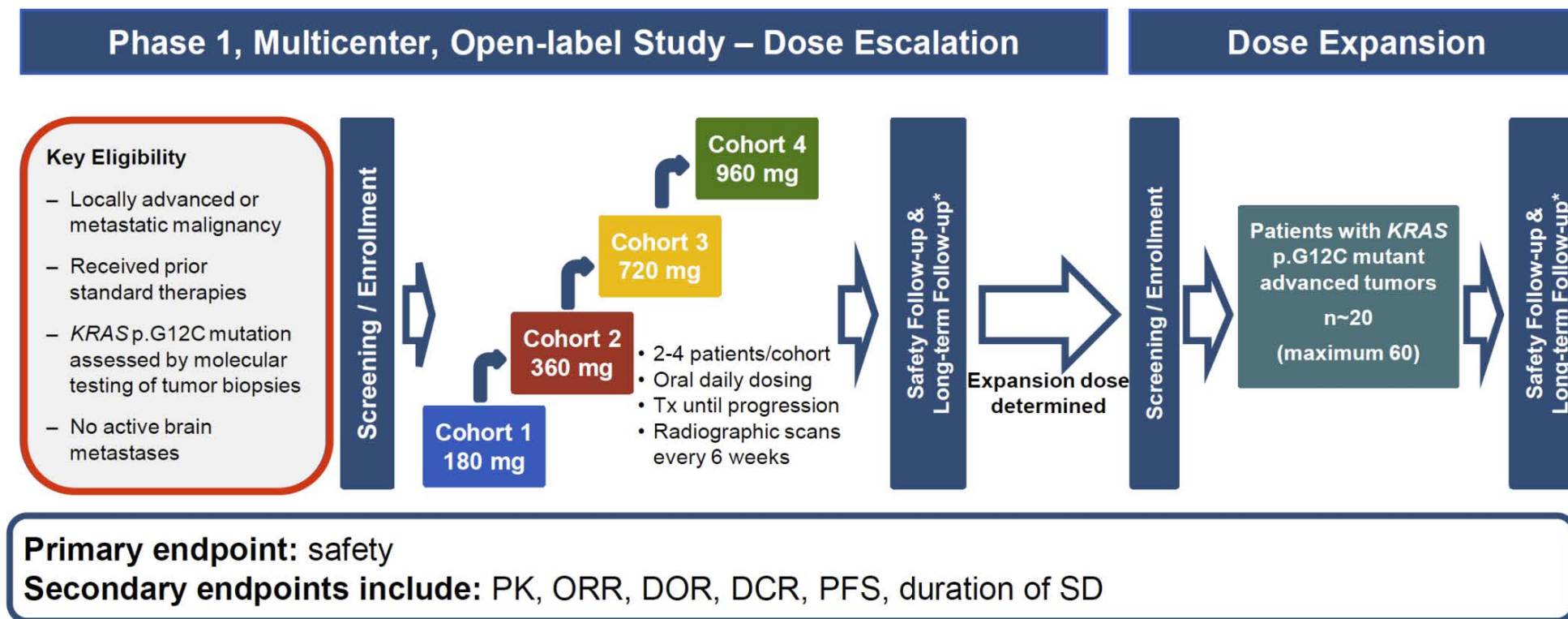
b



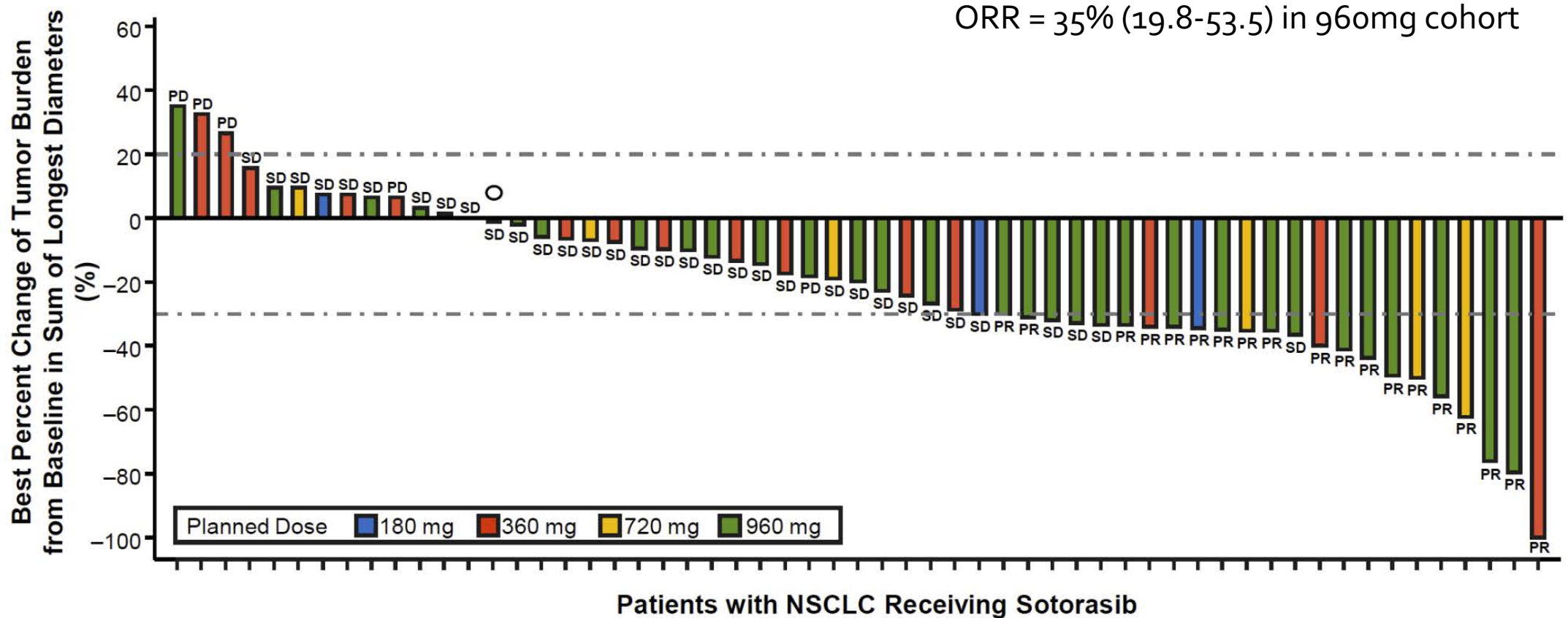
AMG510 (sotorasib): CodeBreaK100



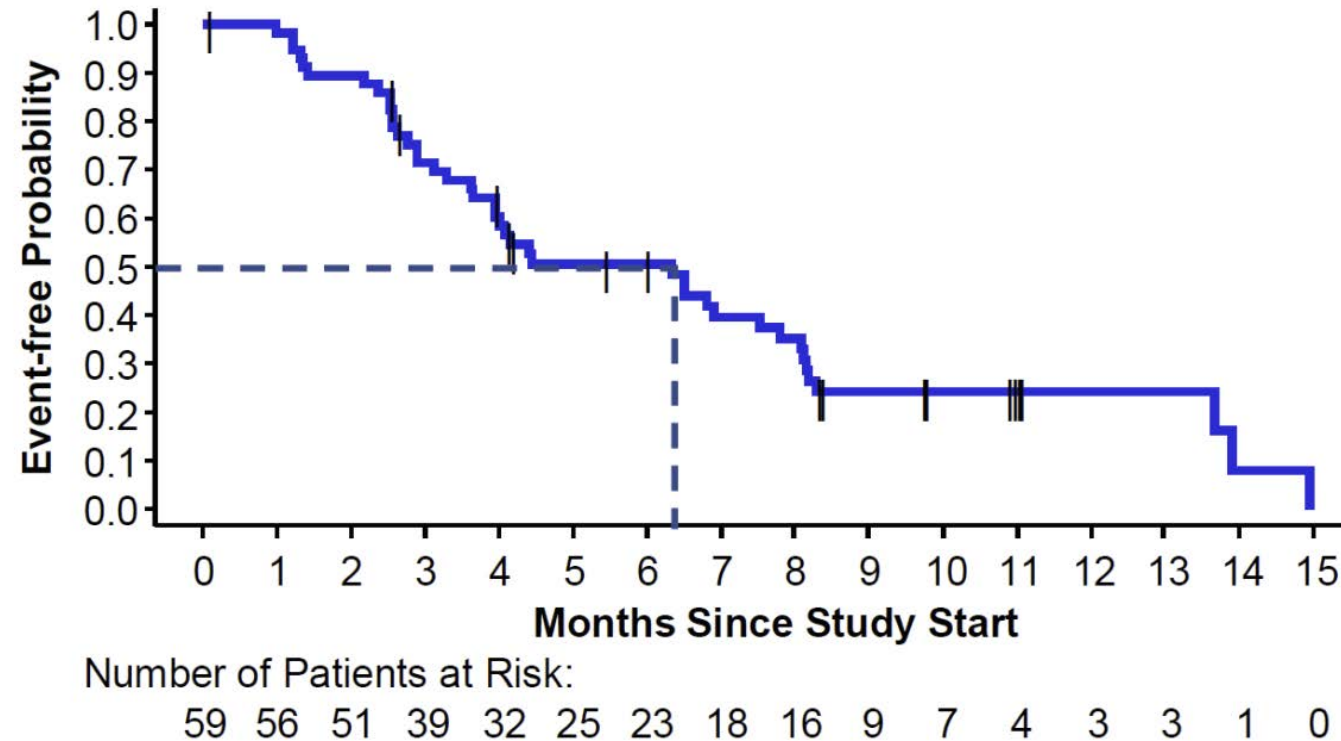
Phase 1 study design (CodeBreaK100: NCT03600883)



AMG510 (sotorasib) efficacy



AMG510 (sotorasib) efficacy



Median PFS: 6.3 (range 0.0+ to 14.9) months



AMG510 (sotorasib) adverse events

Treatment-related Adverse Events	All Patients (N = 59) n (%)		
	Any Grade	Grade ≥3	Grade ≥4
Any	39 (66.1)	11 (18.6)	1 (1.7)
Diarrhea	15 (25.4)	3 (5.1)	0 (0.0)
ALT increased	12 (20.3)	6 (10.2)	1 (1.7)*
AST increased	12 (20.3)	3 (5.1)	0 (0.0)
Fatigue	6 (10.2)	0 (0.0)	0 (0.0)
Nausea	6 (10.2)	0 (0.0)	0 (0.0)
Alkaline phosphatase increased	5 (8.5)	2 (3.4)	0 (0.0)
Decreased appetite	4 (6.8)	0 (0.0)	0 (0.0)

Treatment-related Adverse Events	All Patients (N = 59) n (%)		
	Any Grade	Grade ≥3	Grade ≥4
Vomiting	4 (6.8)	0 (0.0)	0 (0.0)
Abdominal distension	3 (5.1)	0 (0.0)	0 (0.0)
Abdominal pain	3 (5.1)	0 (0.0)	0 (0.0)
Anemia	2 (3.4)	2 (3.4)	0 (0.0)
Lymphocyte count decreased	2 (3.4)	1 (1.7)	0 (0.0)
GGT increased	1 (1.7)	1 (1.7)	0 (0.0)
Hepatitis	1 (1.7)	1 (1.7)	0 (0.0)
Hyponatremia	1 (1.7)	1 (1.7)	0 (0.0)



Cases from the Community: Investigators Discuss Emerging Research and Actual Patients with Hepatocellular Carcinoma (Part 1 of a 3-Part Series)

**Wednesday, January 27, 2021
5:00 PM – 6:30 PM ET**

Faculty

**Richard S Finn, MD
Tim Greten, MD
James J Harding, MD
Ahmed Omar Kaseb, MD, CMQ**

Moderator

Neil Love, MD

Thank you for joining us!

CME and MOC credit information will be emailed to each participant within 5 business days.