# Molecular Testing and Targeted Therapies in NSCLC

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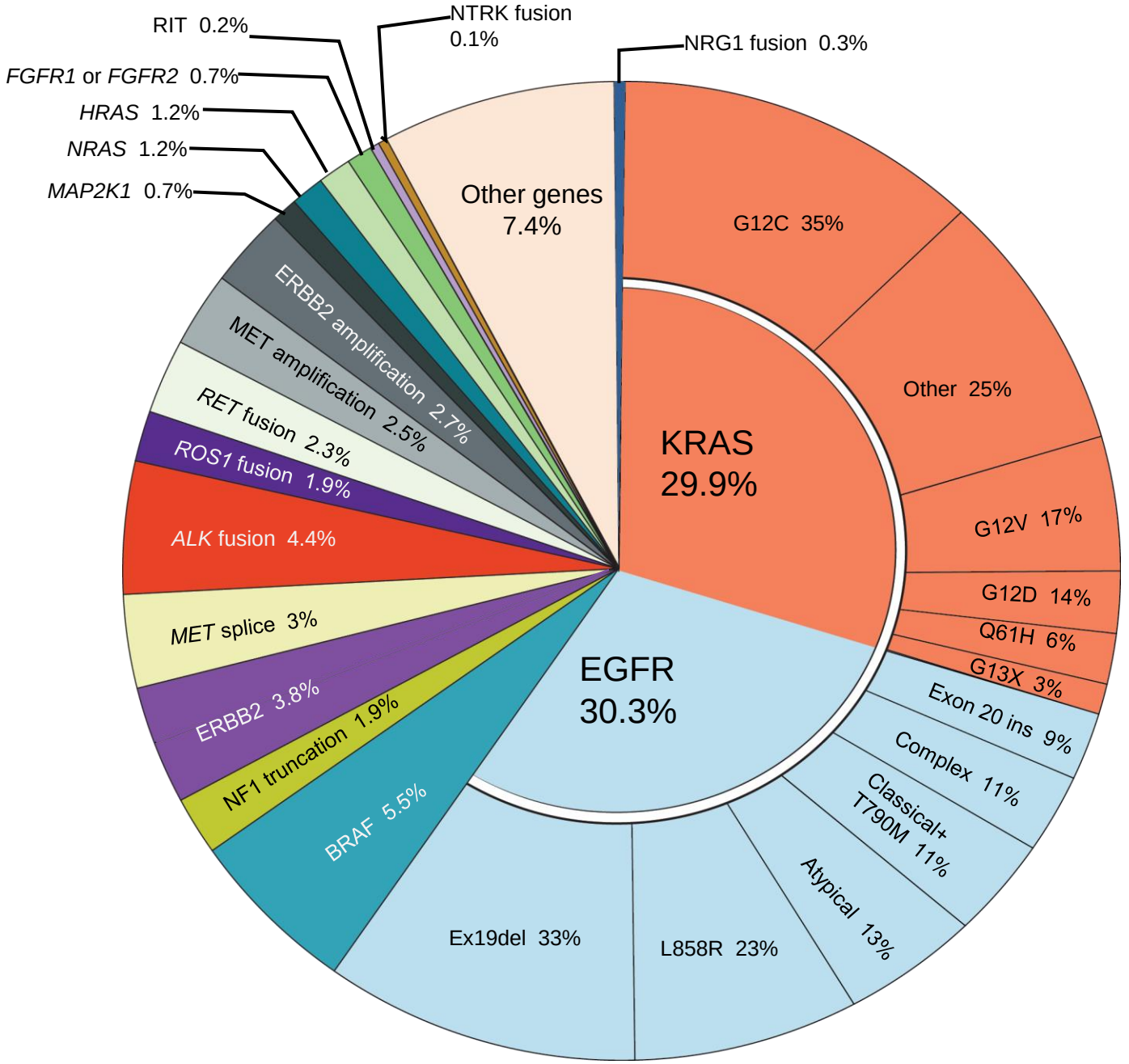
Research: Merck, CellSight, Genentech, Novartis, Abbvie, United Therapeutics, Varian, Verily, Celgene

# Agenda

- Role of biomarkers in therapy selection for lung cancer
- Molecular testing recommendations in NSCLC
- Updated data for therapy selection
  - -EGFR
  - -ALK
  - -ROS1
  - -MET
  - -Kras
  - -HER2
  - -NTRK
  - -RET

# Identification of driver mutations leads to treatment with targeted therapies in metastatic NSCLC




Slide credit: Plexus Communications

# Treatment Options: Overview

- Targeted therapies in the metastatic setting result in robust responses and prolonged disease control for NSCLC but cannot cure- RESISTANCE IS INEVITABLE
- For patients without a targetable mutation, standard firstline treatment recommendation is chemotherapy + IO, regardless of PDL-1 status
- Immunotherapy alone can be considered for patients with PDL-1>=50%

# Treatment considerations

## Who should get molecular testing?

- All patients with metastatic non-squamous NSCLC
- Consider also in patients with metastatic squamous NSCLC

## Timing of Treatment

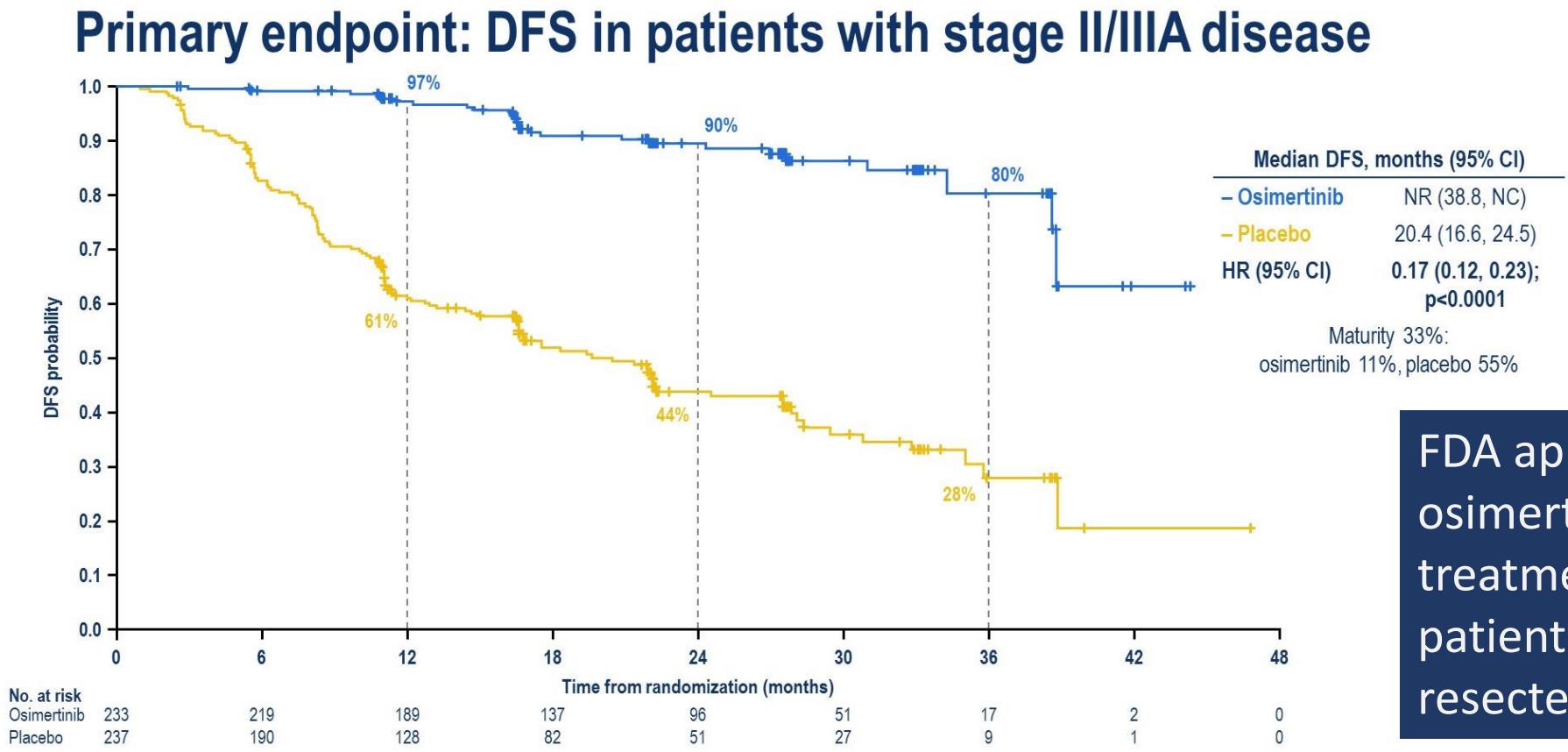
- Wait for rapid molecular testing (EGFR, ALK, ROS1, PDL-1) results prior to treatment initiation (usually 1 week)

# EGFR Mutations

- 15-20% of NSCLC
  - More frequently seen in Asian, never or light smokers
- Most common sensitizing mutations are exon 19 del and L858R
- Firstline treatment with osimertinib in stage IV (FLAURA)
- Brain metastases seen commonly with good CNS penetration of osimertinib
- Exon 20 insertions are generally resistant to classical TKIs with some variant exceptions
- Resistance to EGFR TKIs is common

# ADAURA TRIAL:

## Adjuvant osimertinib improves DFS in early stage II/IIIA EGFR+ NSCLC




FDA approved osimertinib as adjuvant treatment in Dec 2020 in patients with early stage resected EGFR+ NSCLC



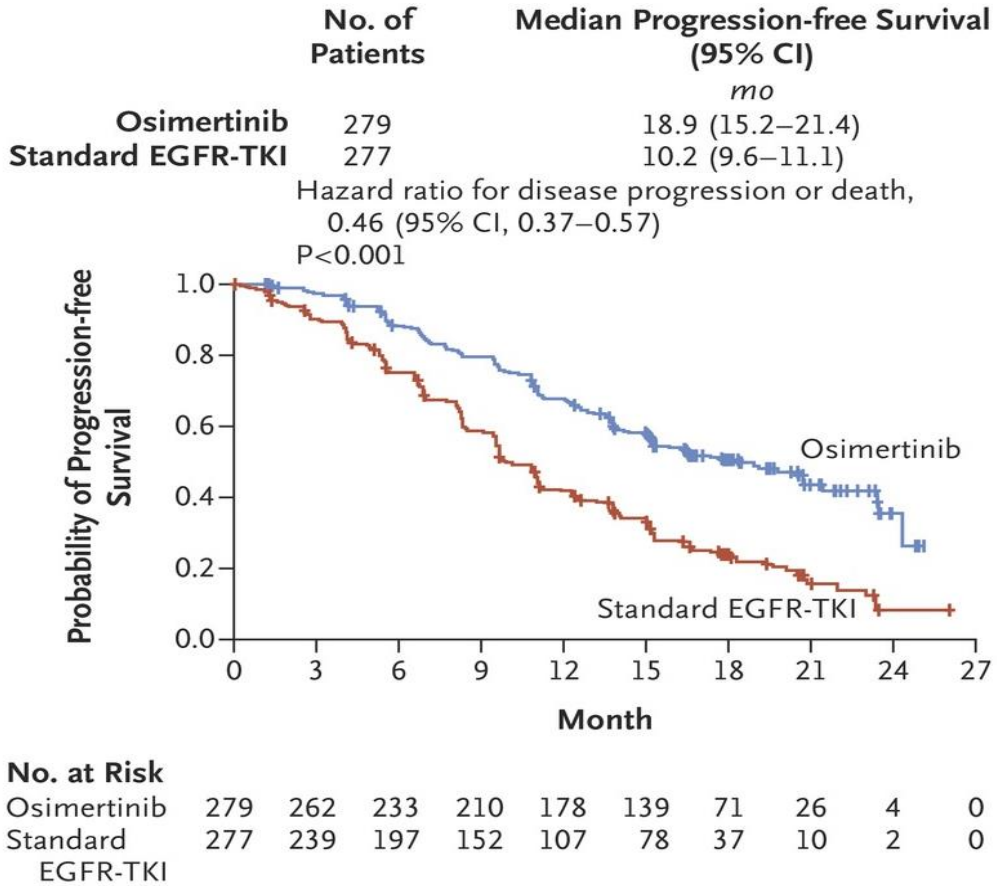


ADAURA data cut-off: January 17, 2020.
Median follow-up: osimertinib 22.1, placebo: 15.0 months;
DFS by investigator assessment; Tick marks indicate censored data.
NC, not calculable; NR, not reached.

# FLAURA TRIAL:

## Osimertinib Improves PFS & OS Compared to Older Generation EGFR TKIs in Stage IV EGFR+ NSCLC

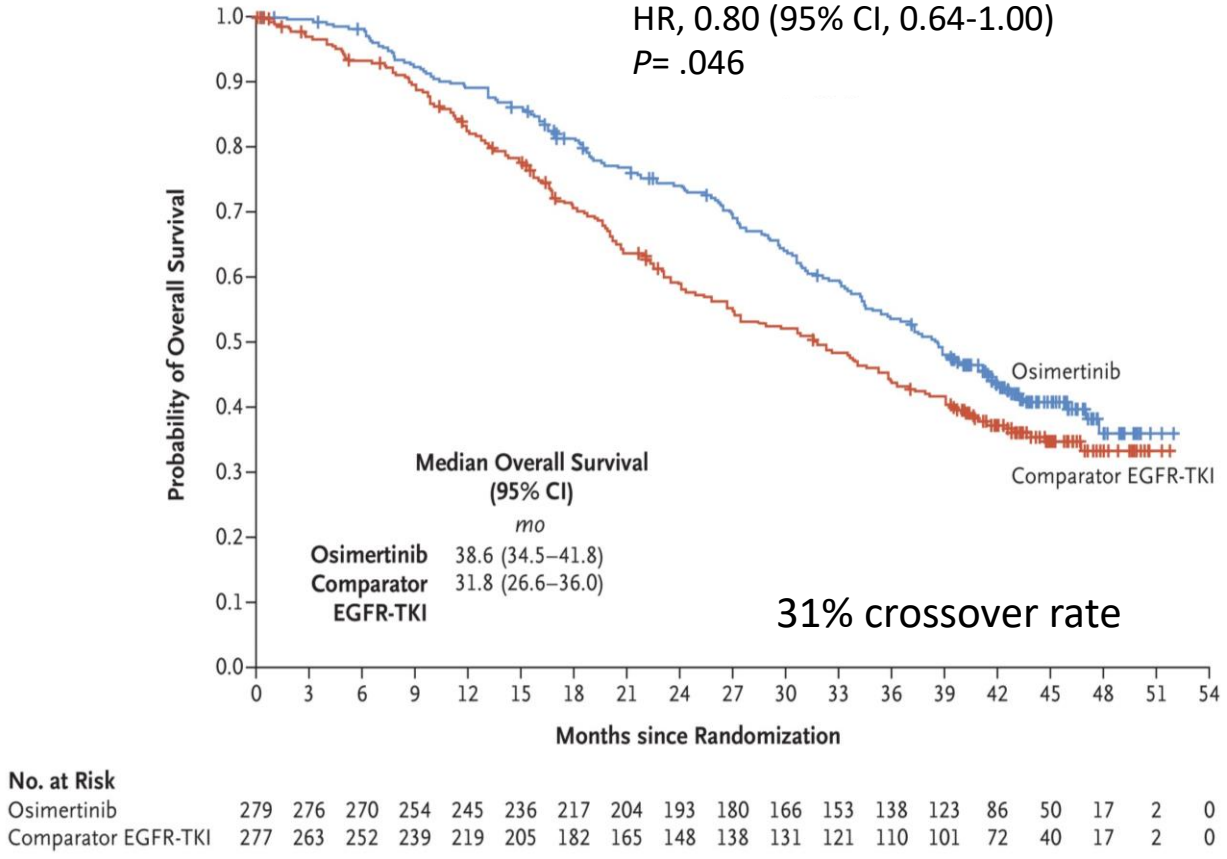
### PFS




Soria JC et al. *N Engl J Med*. 2018;378(2):113-125.

### OS

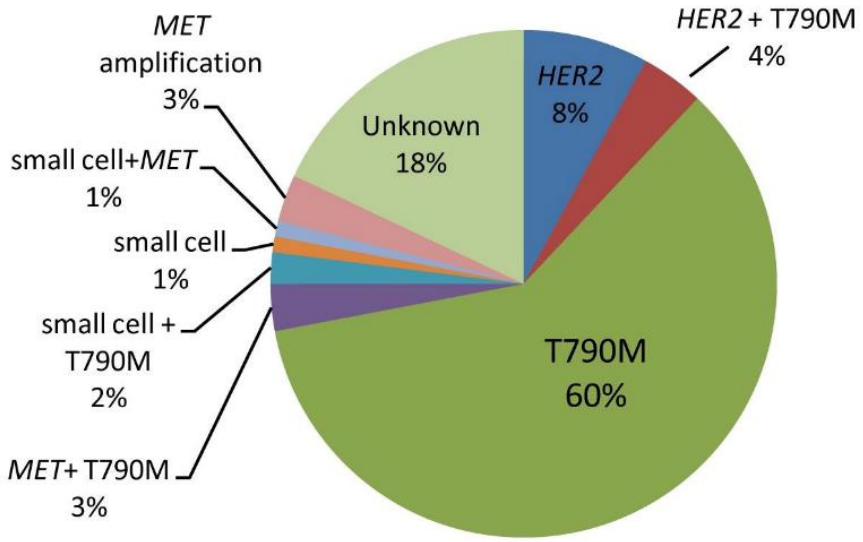
HR, 0.80 (95% CI, 0.64-1.00)
*P*= .046




31% crossover rate

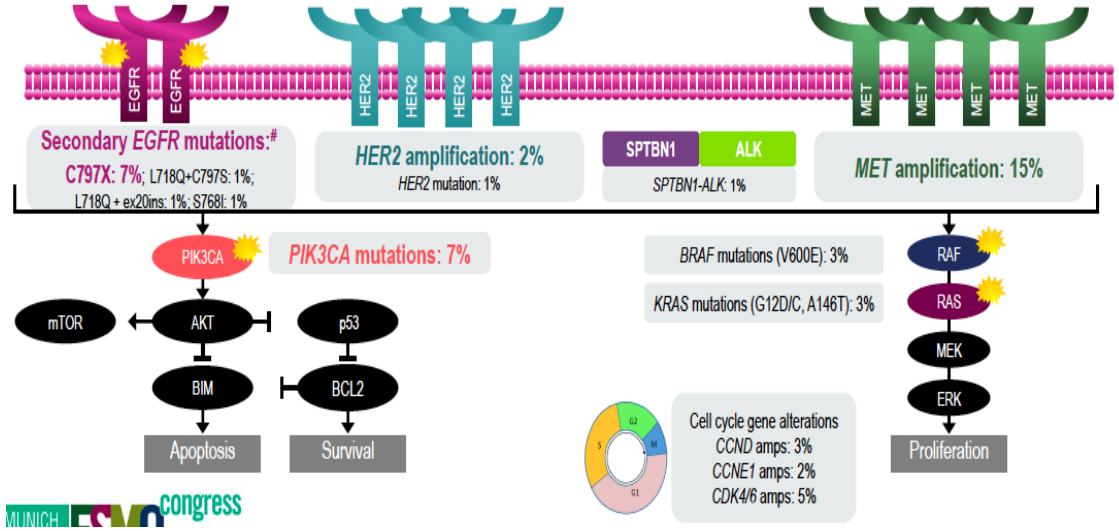
Ramalingam S, et al. *N Engl J Med*. 2020;382(1):41-50.

# Resistance to targeted therapy inevitable & resistance mechanisms more challenging with next generation drugs




Dominant mechanism of resistance for 1st generation EGFR TKIs erlotinib or gefitinib

Yu H et al. Clin Cancer Res. 2013 Apr 15;19(8):2240-7.




Heterogeneous & multiple simultaneous mechanisms of resistance to 3rd generation EGFR TKI osimertinib

Ramalingam SS et al. ESMO 2018, Munich

# CHRYSALIS: Amivantamab in Post-platinum NSCLC Patients With *EGFR* Exon20ins Mutations

## *Fully humanized, bispecific IgG1 antibody targeting EGFR/cMET*

| Response | Efficacy Population (n = 81) |
|---|---|
| ORR, % (95% CI) | 40 (29-51) |
| CBR,* % (95% CI) | 74 (63-83) |
| Best response, n (%) | |
| • CR | 3 (4) |
| • PR | 29 (36) |
| • SD | 39 (48) |
| • PD | 8 (10) |
| • NE | 1 (1) |
| Median DoR, mos (95% CI) | 11.1 (6.9-NR) |

*CBR = CR, PR, of SD at ≥ 2 disease assessments.
†Does not include 9 patients with race not reported and multiple race.

May 2021: FDA approved amivantamab for patients with NSCLC who harbor EGFR exon 20 insertion mutation and whose disease has progressed on or after platinum-based chemotherapy

## Ongoing phase III PAPILLON trial

- Firstline amivantanab + chemo vs. chemo alone in EGFR exon 20 ins patients

Park et al. J Clin Oncol. 2021;39(30):3391-3402

# CHRYSALIS: Amivantamab in Post-platinum NSCLC Patients With *EGFR* Exon20ins Mutations

| | Safety Population (n = 114), n (%) | Patients Treated at the RP2D (n=258), n (%) |
|---|---|---|
| **Any AE** | 113 (99) | 257 (100) |
| **Grade ≥ 3 AE** | 40 (35) | 101 (39) |
| **Serious AE** | 34 (30) | 79 (31) |
| **AE leading to death** | 8 (7) | 13 (5) |
| **AE leading to discontinuation** | 11 (10) | 17 (7) |
| **AE leading to dose reduction** | 15 (13) | 26 (10) |
| **AE leading to dose interruption*** | 40 (35) | 88 (34) |

- Safety profile consistent with AEs resulting from EGFR and MET pathway inhibition
- Infusion-related reactions primarily occurred during first infusion (94% of cases)
- Should be withheld if patients develop symptoms of interstitial lung disease

*Excludes infusion-related reactions.

Park et al. J Clin Oncol. 2021;39(30):3391-3402

# Mobocertinib in Post-platinum NSCLC Patients With *EGFR* Exon20ins Mutations

## *Oral small-molecule TKI that selectively target EGFR ex20ins mutations*

| Outcome | No. (%) PPP cohort (n = 114) |
|---|---|
| **IRC-assessed confirmed objective response[b]** | |
| Patients, No. (%) [95% CI] | 32 (28) [20-37] |
| Complete response | 0 |
| Partial response | 32 (28) |
| Stable disease[c] | 57 (50) |
| Not evaluable | 12 (11) |
| Confirmed disease control rate, No. (%) [95% CI][d] | 89 (78) [69-85] |
| **Investigator-assessed confirmed objective response[b]** | |
| Patients, No. (%) [95% CI] | 40 (35) [26-45] |
| Complete response | 1 (<1) |
| Partial response | 39 (34) |
| Stable disease[c] | 49 (43) |
| Not evaluable | 11 (10) |
| Confirmed disease control rate, No. (%) [95% CI][d] | 89 (78) [69-85] |
| Duration of response in confirmed responders[e] | |
| IRC-assessed | |
| No. | 32 |
| Median (95% CI), mo | 17.5 (7.4-20.3) |
| Investigator-assessed | |
| No. | 40 |
| Median (95% CI), mo | 11.2 (5.6-NR) |

Sept 2021: FDA approved mobocertinib for patients with NSCLC who harbor EGFR exon 20 insertion mutation and whose disease has progressed on or after platinum-based chemotherapy

Zhou C et al. *JAMA Oncol*. 2021;7:e214761.

# EGFR Targeted Therapy: Summary

- Recent ADAURA trial is practice changing
  - **Test all early stage patients for EGFR!**
- Strategies in development to delay or overcome resistance to osimertinib
- Usually chemotherapy is administered after resistance to osimertinib develops
- Identifying specific resistance mutations in each patient's tumor (i.e., tissue biopsy, liquid biopsy) and tailoring subsequent approach
- Newly approved drugs for EGFR exon 20 ins
  - Amivantanab
  - Mobocertinib

# ALK Targeted Therapy

## 3-5% of NSCLC

- More frequent in males
- More frequent in never or light smokers
- Brain metastases commonly seen

## Frontline treatment options

- Alectinib
- Brigatinib (approved May 2020)
- Lorlatinib (approved March 2021)

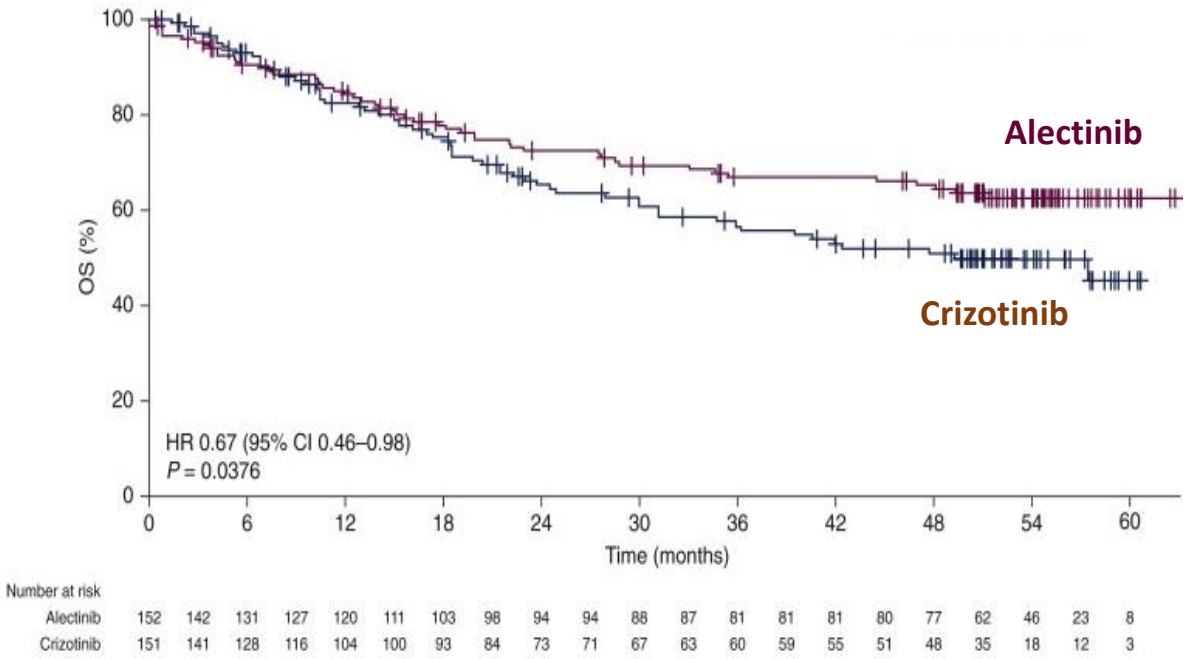
## Other ALK inhibitors

- Ceritinib, Crizotinib

# ALEX Phase III TRIAL:

## Alectinib superior to Crizotinib in Untreated *ALK*-Positive NSCLC

**Overall Survival**



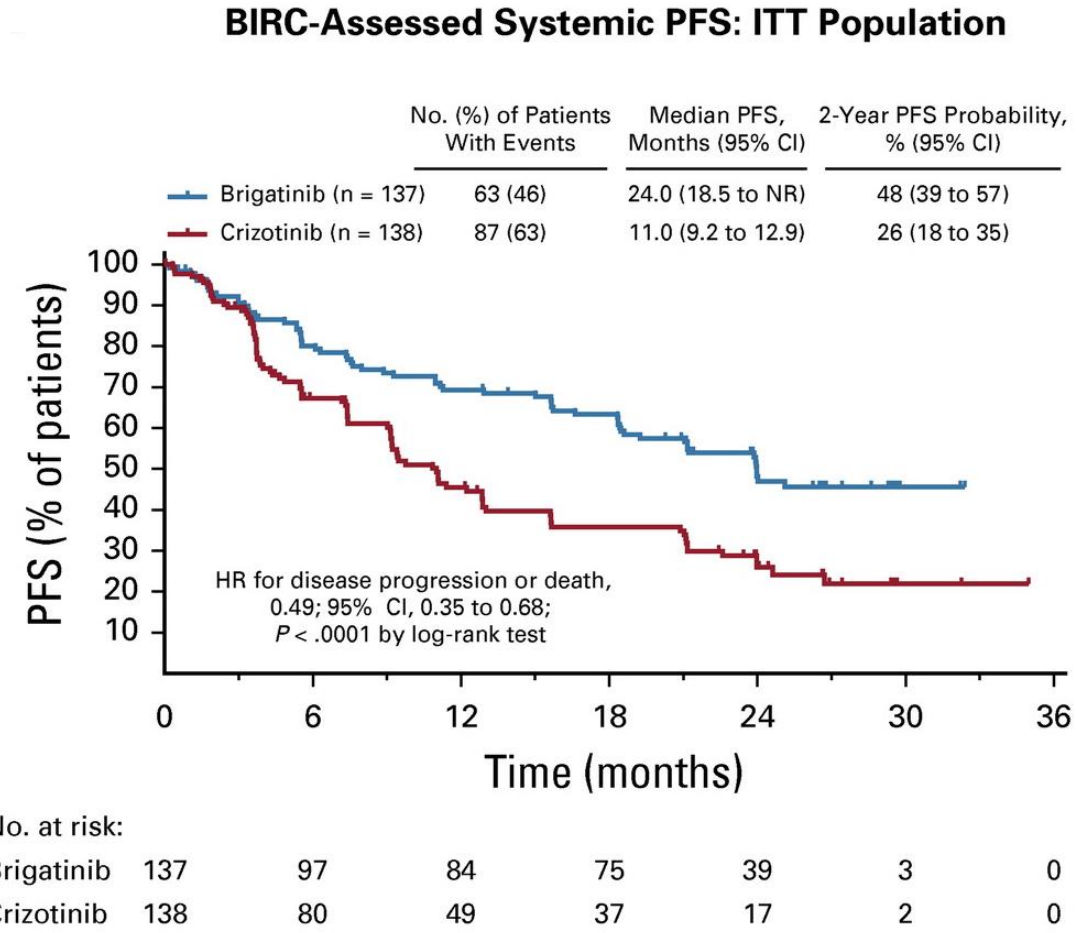

| Name | | Level | Log-rank *P* value | Hazard ratio | 95% CI | Interaction test *P* value (likelihood ratio) |
|---|---|---|---|---|---|---|
| All | | n/a | 0.0609 | 0.70 | (0.48–1.02) | |
| Age group (years) | | < 65 | 0.1481 | 0.73 | (0.48–1.12) | 0.6768 |
| | | ≥ 65 | 0.2189 | 0.63 | (0.30–1.33) | |
| Sex | | Female | 0.3020 | 0.76 | (0.45–1.28) | 0.6923 |
| | | Male | 0.1155 | 0.66 | (0.39–1.11) | |
| Race | | Asian | 0.3298 | 0.74 | (0.40–1.36) | 0.8575 |
| | | Non-Asian | 0.1161 | 0.69 | (0.43–1.10) | |
| Smoking status | *n* = 17 | Active smoker | 0.4126 | 1.97 | (0.38–10.20) | 0.5471 |
| | | Non-smoker | 0.1181 | 0.68 | (0.42–1.11) | |
| | | Past smoker | 0.1339 | 0.62 | (0.33–1.17) | |
| ECOG PS | | 0 | 0.1266 | 0.52 | (0.22–1.22) | 0.4636 |
| | | 1 | 0.0960 | 0.68 | (0.44–1.07) | |
| | *n* = 20 | 2 | 0.6440 | 1.30 | (0.43–3.90) | |

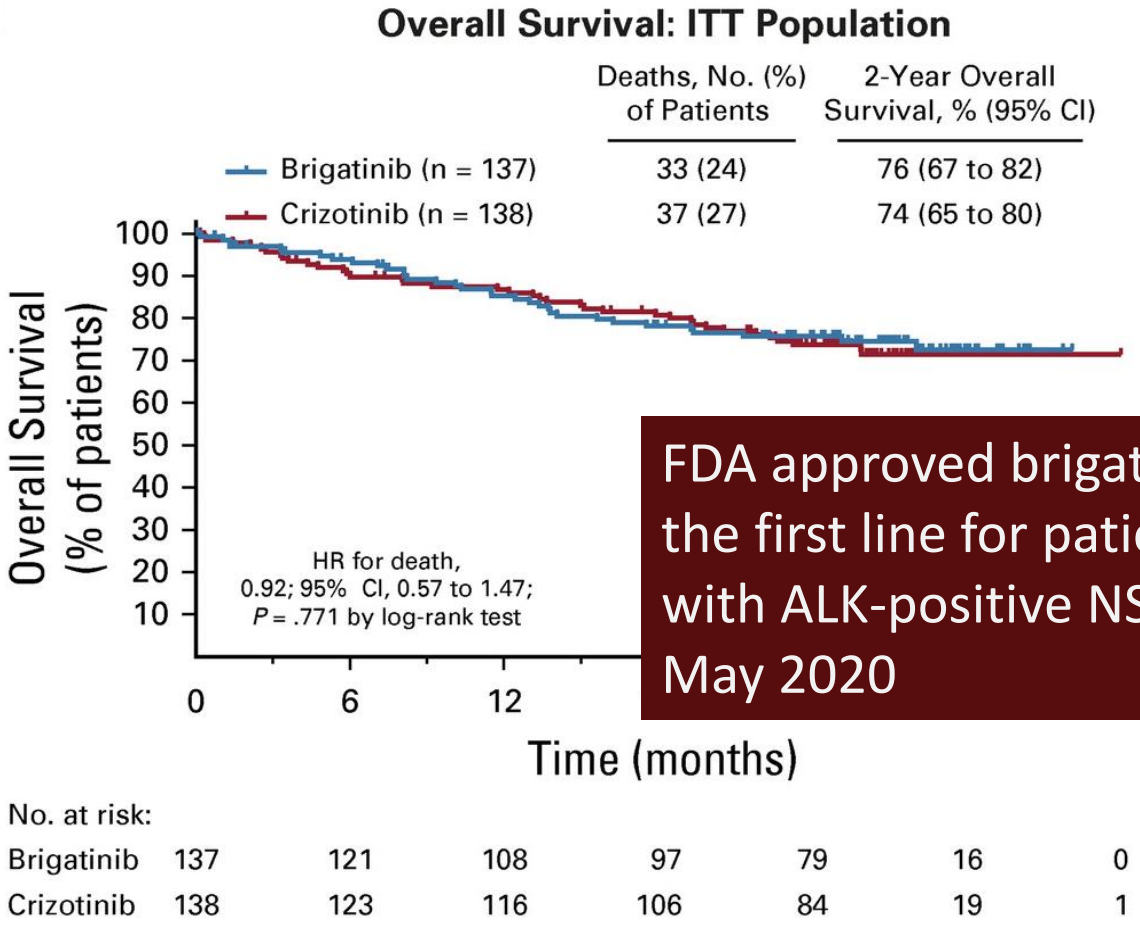
FDA approved alectinib in the first line for patients with ALK-positive NSCLC in November 2017

Peters S, et al.. *J Clin Oncol*. 2020;38(15):9518. Mok T, et al. *Ann Oncol*. 2020;31(8):1056-1064.

# ALTA-1L Phase III TRIAL:

## Brigatinib superior to Crizotinib in Untreated *ALK*-Rearranged NSCLC



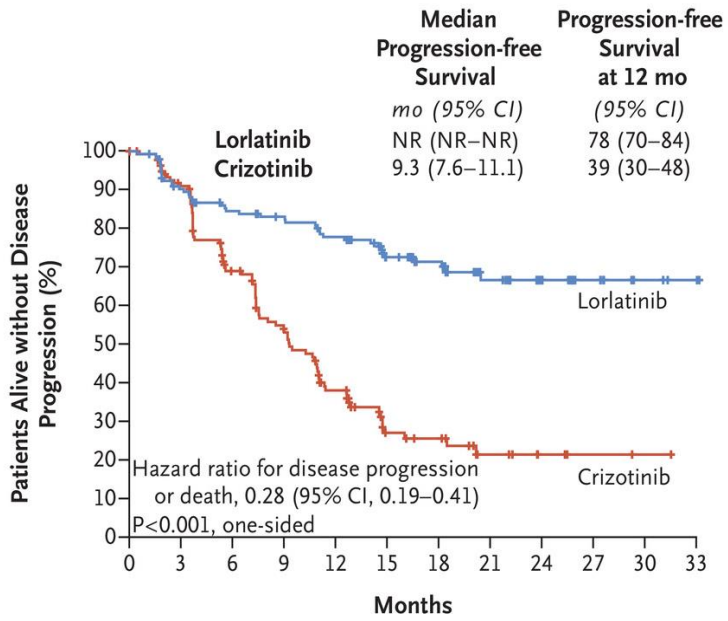

FDA approved brigatinib in the first line for patients with ALK-positive NSCLC in May 2020

Camidge DR, et al. *J Clin Oncol*. 2020;38(31):3592-3603.

# CROWN Phase III TRIAL:

## Lorlatinib superior to Crizotinib in Advanced *ALK*-Positive NSCLC

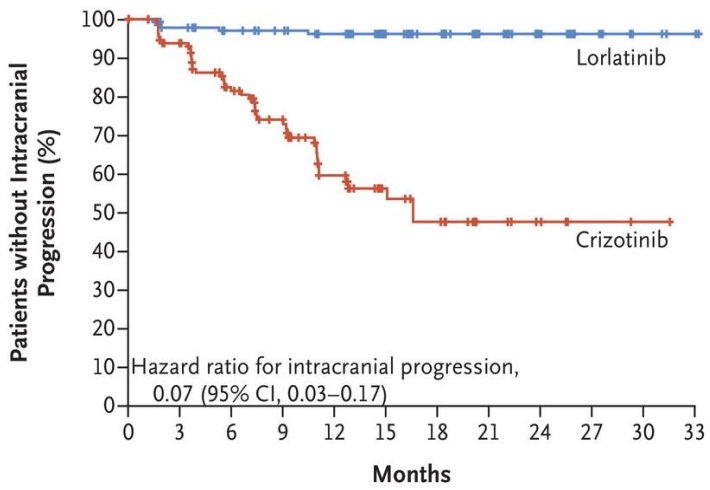
### Progression Free Survival




No. at Risk

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lorlatinib | 149 | 129 | 118 | 113 | 105 | 73 | 59 | 33 | 20 | 11 | 4 | 2 |
| Crizotinib | 147 | 120 | 84 | 62 | 39 | 19 | 16 | 8 | 4 | 2 | 1 | 0 |

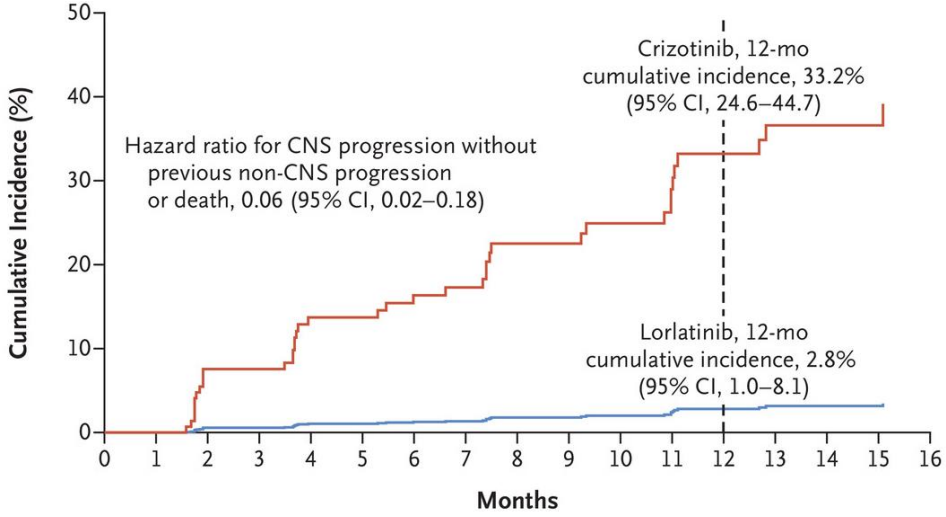
### Time to Intracranial Progression




No. at Risk

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lorlatinib | 149 | 131 | 122 | 117 | 110 | 78 | 65 | 39 | 25 | 12 | 4 | 2 |
| Crizotinib | 147 | 115 | 84 | 65 | 38 | 21 | 16 | 8 | 5 | 2 | 1 | 0 |

### Cumulative Incidence of CNS Progression as the First Event




FDA approved lorlatinib for patients with NSCLC whose tumors are *ALK*-positive in March 2021

Shaw AT, et al. *N Engl J Med*. 2020;383(21):2018-2029.

# ALK Targeted Therapy: Summary

- Multiple first line FDA approved ALK TKI options
- Alectinib is generally preferred first line given favorable side effect profile and high CNS penetration
- Resistance to ALK TKIs occurs
- Can use other ALK TKIs at the time of disease resistance (brigatinib, lorlatinib)

# ROS1 Targeted Therapy

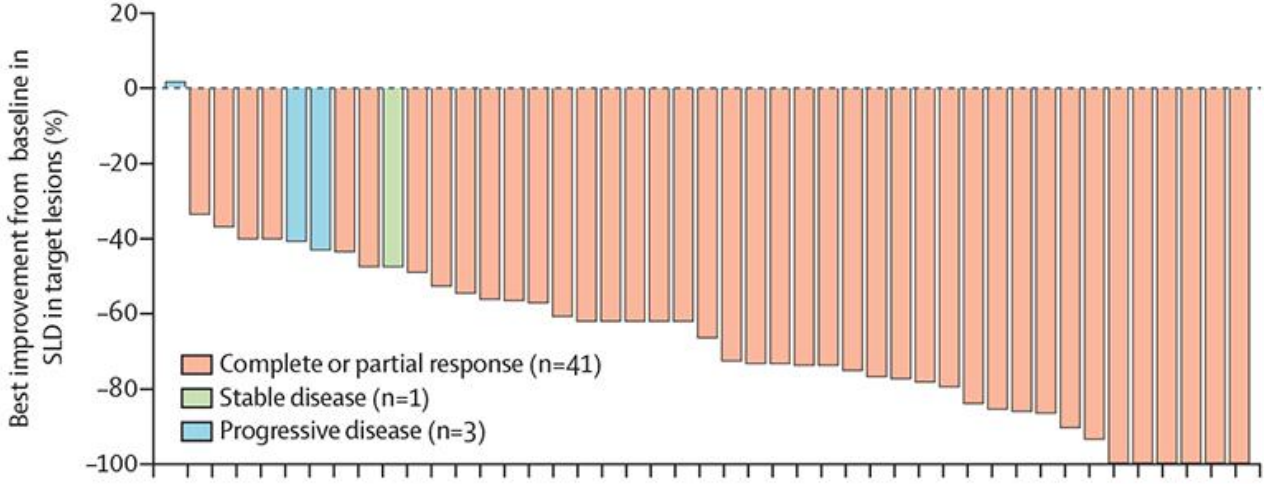
## Found in 1% of NSCLC

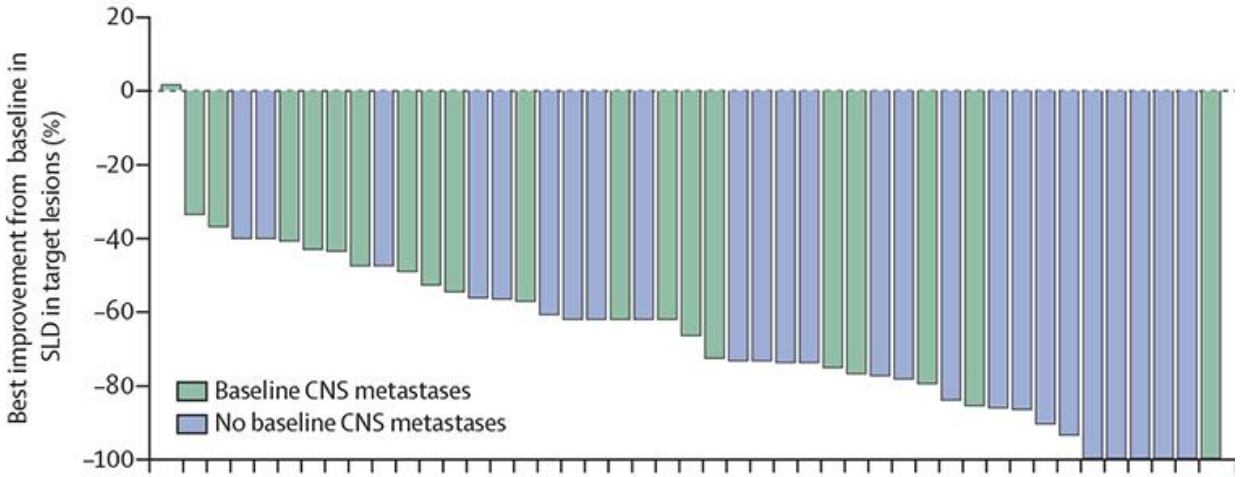
- More common in light or never smokers
- Longer median OS of patients

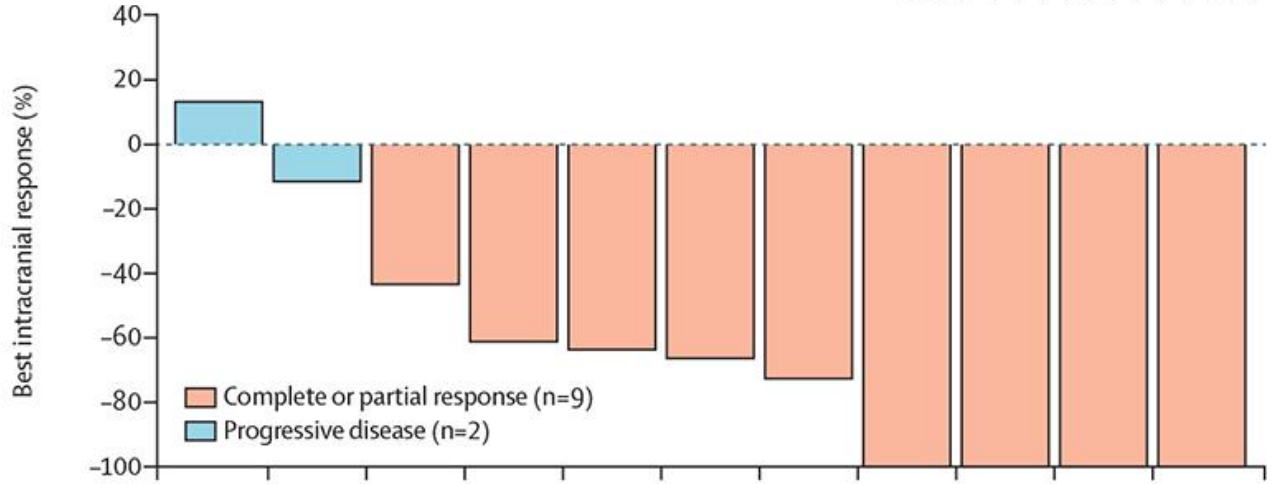
## Targeted therapies

- Crizotinib
- Entrectinib (approved Aug 2019)
- Ceritinib

# Entrectinib in *ROS1* Fusion-positive NSCLC
# Integrated Analysis of 3 Phase I/II Trials (STARTRK-1, ALKA, STARTRK-2)




FDA approved entrectinib for patients with *ROS1* *f*usion-positive NSCLC in August 2019

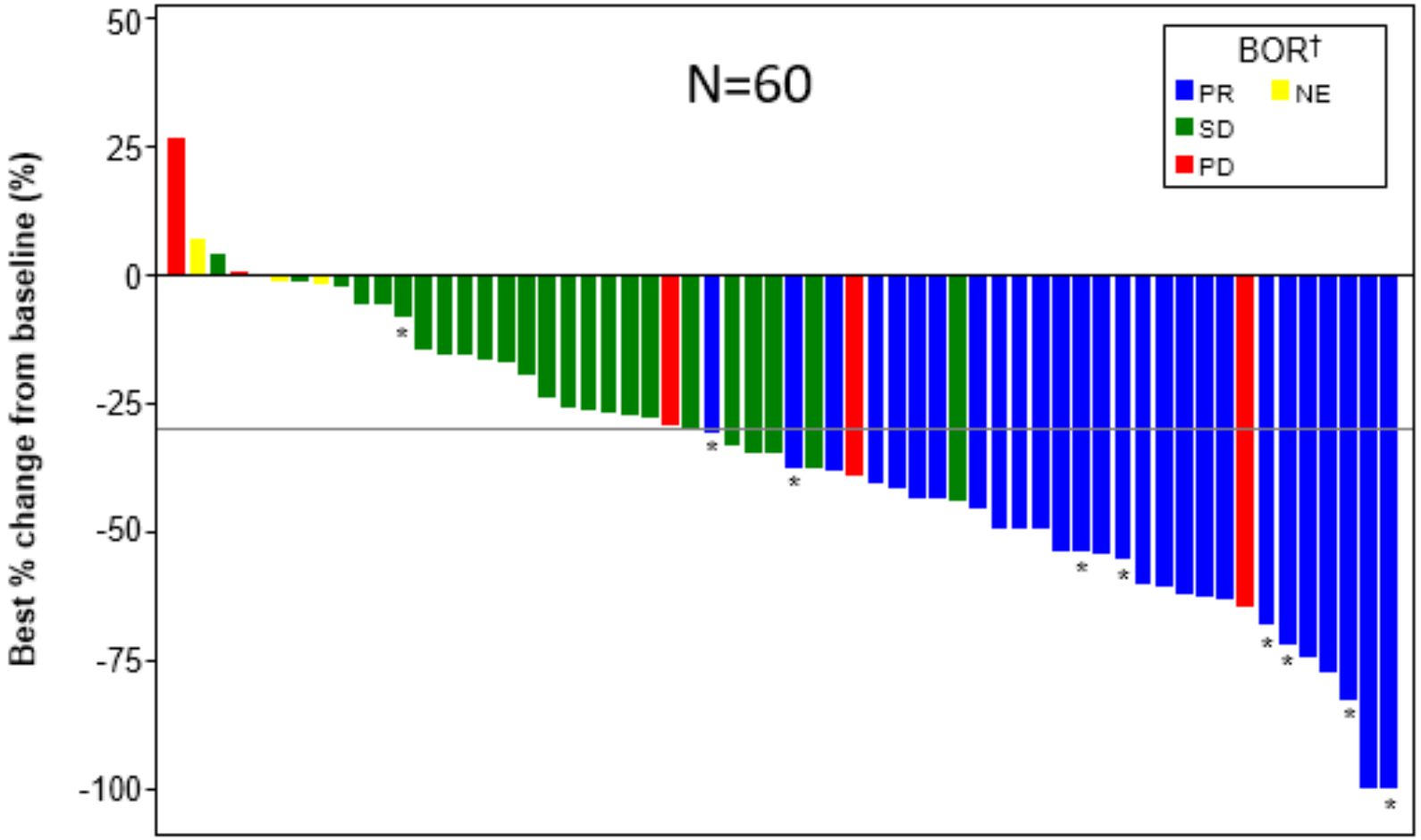
Drilon A, et al. *Lancet Oncol*. 2020;21(2):261-270.

# MET Targeted Therapy

- MET alterations occur is many solid malignancies, including NSCLC (gene amplification and exon 14 skipping mutations)
- MET antibodies and TKIs being investigated
- MET amplification seen in cases of EGFR-TKI resistance
- Capmatinib and tepotinib are FDA approved first line treatment options for patients MET exon 14 skipping mutations

# GEOMETRY mono-1 TRIAL:

## Subsequent line Capmatinib effective in *MET*ex14—mutated NSCLC



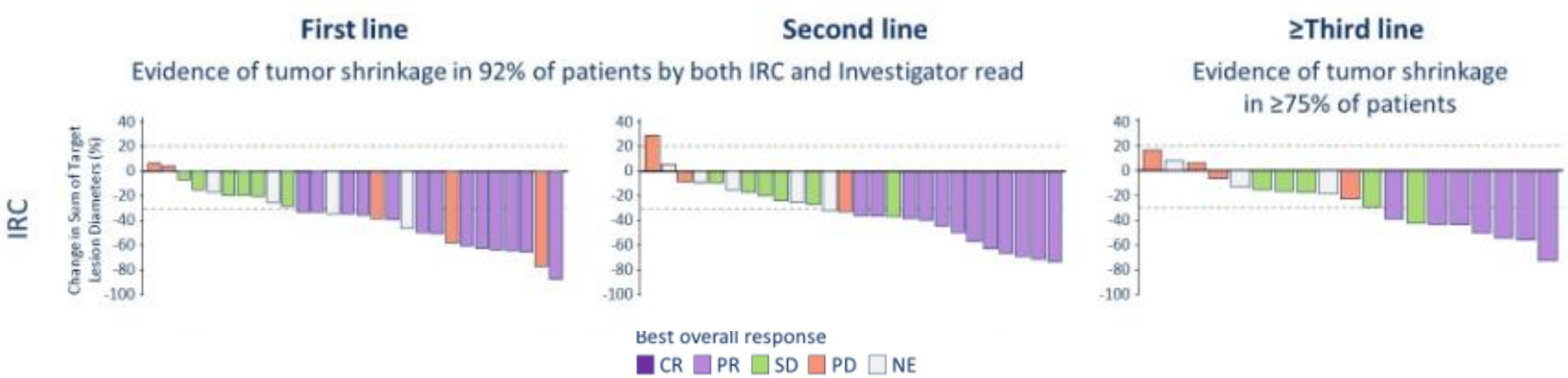

| | Subsequent line Capmatinib N=69 |
|---|---|
| ORR | 40.6% |
| mDoR | 9.7 mos |
| mPFS | 5.4 mos |

May 2020: FDA granted accelerated approval for capmatinib for patients with METex14—mutated NSCLC
Aug 2022: FDA granted regular approval

Garon et al. presented at: 2020 American Association for Cancer Research Virtual Annual Meeting I: Virtual; April 27-28, 2020. Abstract CT082

# VISION TRIAL:

## Tepotinib targets MET Exon 14 skipping mutations




| | Tepotinib N=87 |
|---|---|
| ORR | 45% |
| mDoR | 1.7mos |

February 2021: FDA granted accelerated approval for tepotinib in patients with mNSCLC harboring MET exon 14 skipping alterations

Paik et al. J Clin Oncol. 2019;37915_suppl0: 9005-9005

# MET Targeted Therapy: Summary

- Capmatinib and tepotinib are standard of care 1st line treatment for MET exon 14 skipping mutations
- Other MET targeted drugs are in clinical development

# KRAS targeted therapy

- KRAS is the common mutation in lung adenoCA (25%)
- KRAS G12C mutations found in 13% of lung adenoCA
- Up until recently, KRAS mutations were not felt to be targetable in lung cancer

# Sotorasib for Patients With Advanced *KRAS*$^{G12C}$-Mutated Advanced NSCLC Previously Treated With Standard Therapies

*Phase II Trial*

| Tumor Response to Sotorasib Therapy According to Independent Central Review | |
|---|---|
| **Variable** | **Patients (N = 124)** |
| **ORR** — % (95% CI)† | 37.1 (28.646.2) |
| **Disease control** — % (95% CI)‡ | 80.6 (72.6–87.2) |
| **Best response** — no. (%) | |
| **CR** | 4 (3.2) |
| **PR** | 42 (33.9) |
| **SD** | 54 (43.5) |
| **PD** | 20 (16.1) |
| **Could not be evaluated** | 2 (1.6) |
| **Missing scan** | 2 (1.6) |
| **Median duration of objective response** (95% CI) — mo§ | 11.1 (6.9–NE) |
| **Kaplan-meier estimate of objective response** (95% CI) — % | |
| **At 3 mo** | 90.5 (76.7–96.3) |
| **At 6 mo** | 70.8 (54.3–82.2) |
| **At 9 mo** | 57.3 (40.4–71.0) |

May 2021: FDA approved sotorasib for KRAS G12C-mutated NSCLC for patients who have received at least one prior systemic therapy

Skoulidis et al. *N Engl J Med*. 2021;384(25):2371-2381

# Adagrasib

- Phase I/II study (N=110; n = 79 with NSCLC [51 evaluable])
  - Efficacy in NSCLC
    - CR/PR: 45% of NSCLC
    - Disease control (CR/PR/SD): 96%
  - Safety
    - Most common AEs: nausea, diarrhea, vomiting, fatigue, and increased liver enzymes
    - Grade ≥3 AEs: 30%
    - 2 deaths (pneumonitis, cardiac failure)

In June 2021, adagrasib earned a breakthrough therapy designation from the FDA for patients with KRAS G12C–mutant NSCLC

# KRAS targeted therapy: Summary

- Sotorasib is a viable second line therapy option with KRAS G12 mutated NSCLC (chemo+IO still firstline)
- No targeted treatment options for other KRAS non-G12C mutations

# HER2 (ERBB2) Targeted Therapy

- Currently no standard therapies targeting HER2 pathway in NSCLC
  - Approved therapies in HER2+ gastric and breast cancers
- No clear correlation between HER2 overexpression, amplification, or mutation (not mutually exclusive)
  - HER2 mutations in 2-4% (most exon 20 ins)
  - HER2 amplification in 10-20%
  - HER2 overexpression in 2.4-38%
- HER2 alterations can represent primary driver or mechanism of acquired resistance

Jebbink et al. Cancer Treat Rev 2020;86:101996

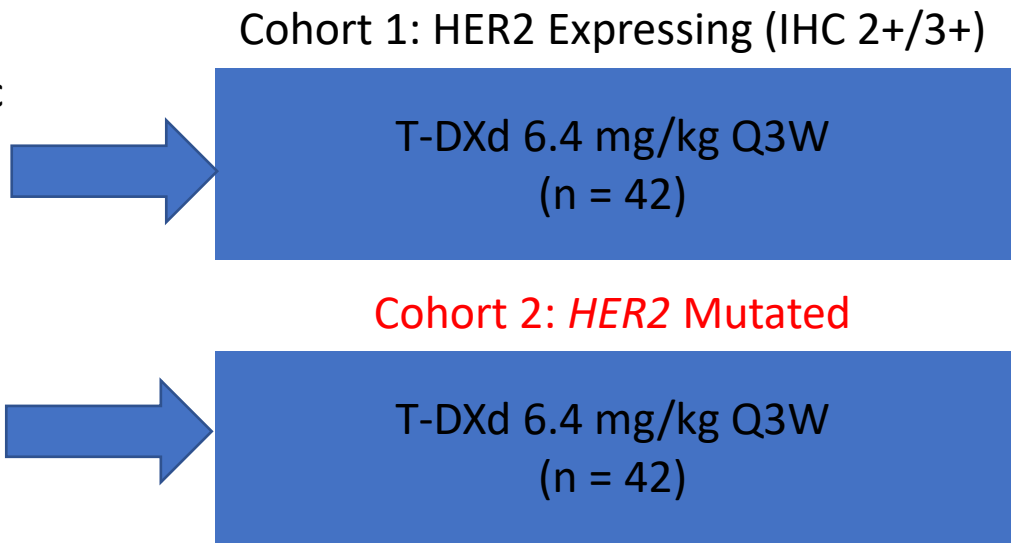
Rolfo et al. Cancer Discov 2020 May 10(50):643-645

# DESTINY-Lung01 Trial: Trastuzumab deruxtecan (HER2 Targeted Therapy)

- International, open-label, multicohort phase II trial

- Patients with unresectable/metastatic nonsquamous NSCLC that is HER2 expressing or with a *HER2*-activating mutation
- R/R to standard therapy
- No previous HER2-targeted therapy (pan-HER TKIs allowed)
- ECOG PS 0-1

(planned N = 170)



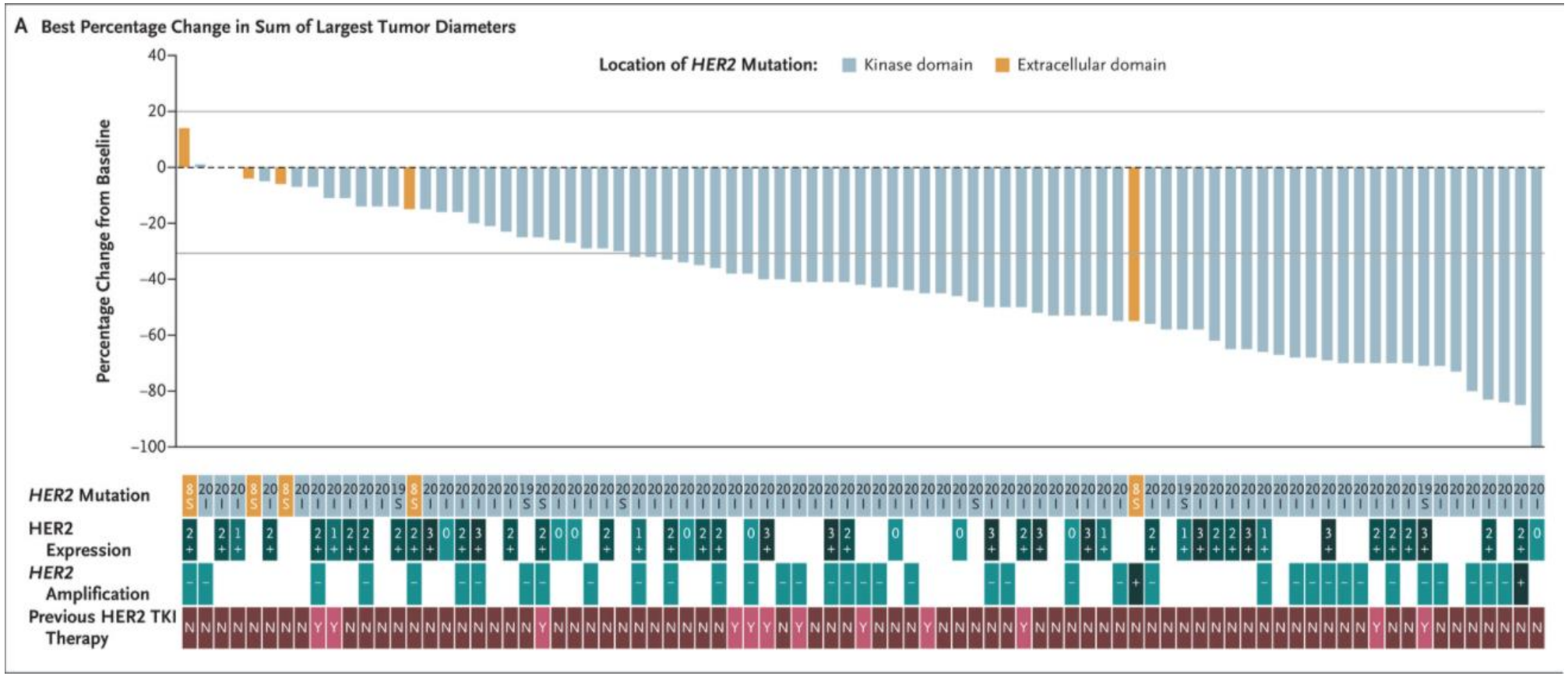

Primary endpoint: confirmed ORR per ICR

Secondary endpoints: DoR, PFS, OS

Smit. ASCO 2020. Abstr 9504. NCT03505710.

# DESTINY Lung-01 TRIAL:

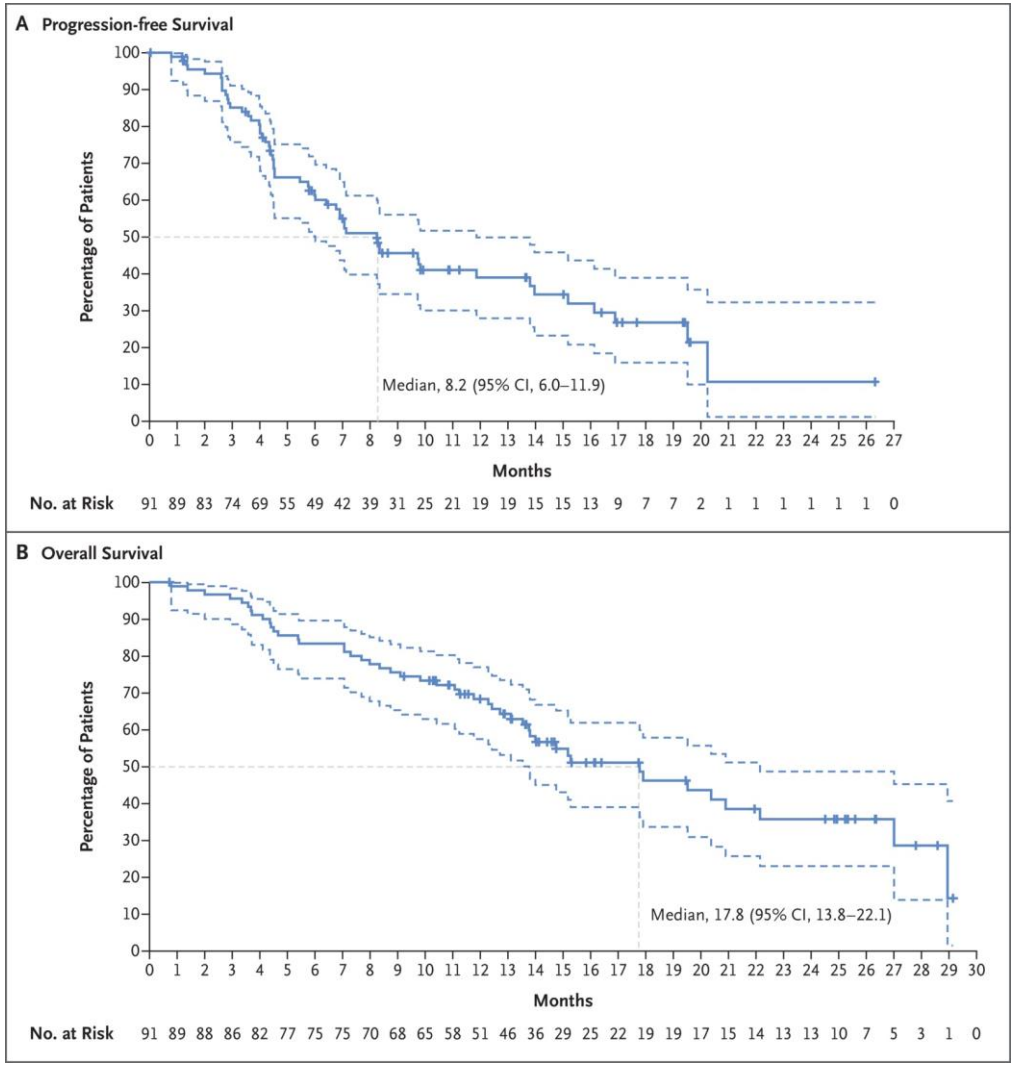
## Trastuzumab deruxtecan shows response in HER2-mutant NSCLC




Li BT et al. NEJM. 2022; 20;386(3):241-251

# DESTINY Lung-01 TRIAL:

## PFS and OS of Trastuzumab Deruxtecan in HER2-mutant NSCLC




Aug 2022: FDA granted accelerated approval to trastuzumab deruxtecan for unresectable/metastatic NSCLC patients with HER2 mutations who have received a prior systemic therapy

Li et al. N Engl J Med. 2022; 20;386(3):241-251

# HER2 Targeted Therapy

| | First author | Overall response rate *HER2* mutation | Overall response rate *HER2* amplification |
|---|---|---|---|
| **Dacomitinib** | Kris | 3/26 (12%) | 0/4 (0%) |
| **Neratinib** | Hyman | 1/26 (4%) | NA |
| **Neratinib** | Gandhi | 0/17 (0%) | NA |
| **Neratinib + temsirolimus** | Gandhi | 8/43 (19%) | NA |
| **Afatinib** | Smit | 0/13 (0%) | NA |
| **Afatinib** | Lai | 3/22 (14%) | NA |
| **Trastuzumab** | Gatzemeier | NA | NA* |

* Negative randomized phase 2 trial cisplatin/gemcitabine ± trastuzumab in HER2 IHC2+/3+ lung cancers.

- TKIs are minimally effective with overall low response rates
- Poziotinib, a more potent inhibitor of EGFR and HER2 exon 20 mutations, being studied in phase II trial

Jebbink et al. Cancer Treat Rev 2020;86:101996

# HER2 Targeted Therapy: Poziotinib

IASLC | 2020 World Conference on Lung Cancer Singapore

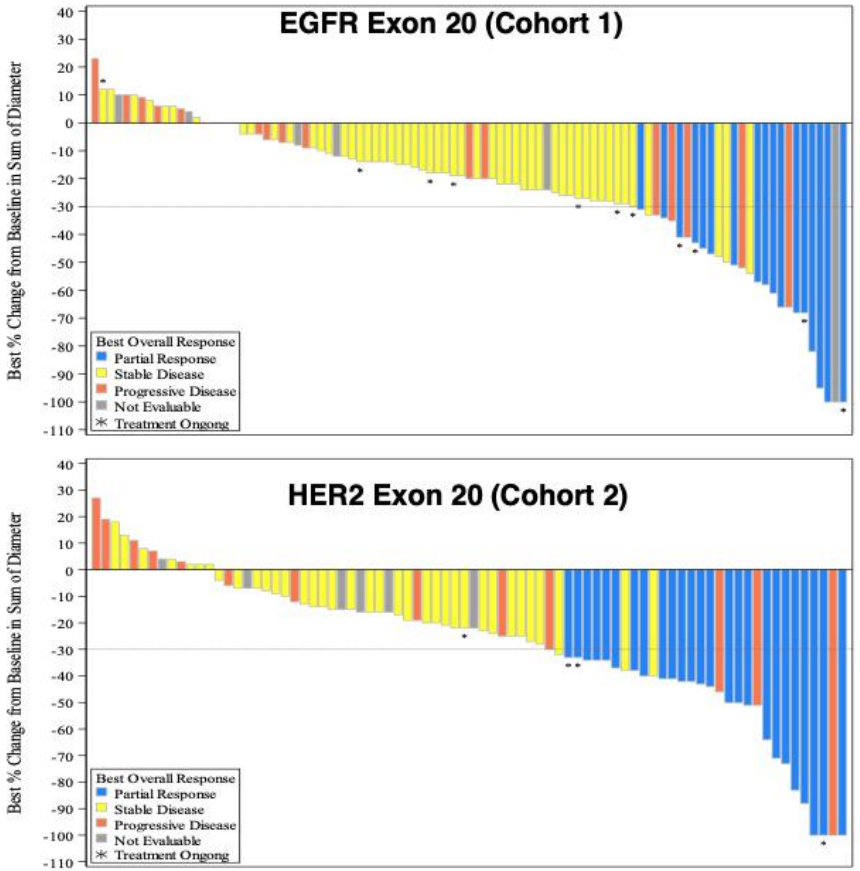
wclc2020.IASLC.com | #WCLC20

CONQUERING THORACIC CANCERS WORLDWIDE

## Primary Efficacy and Safety

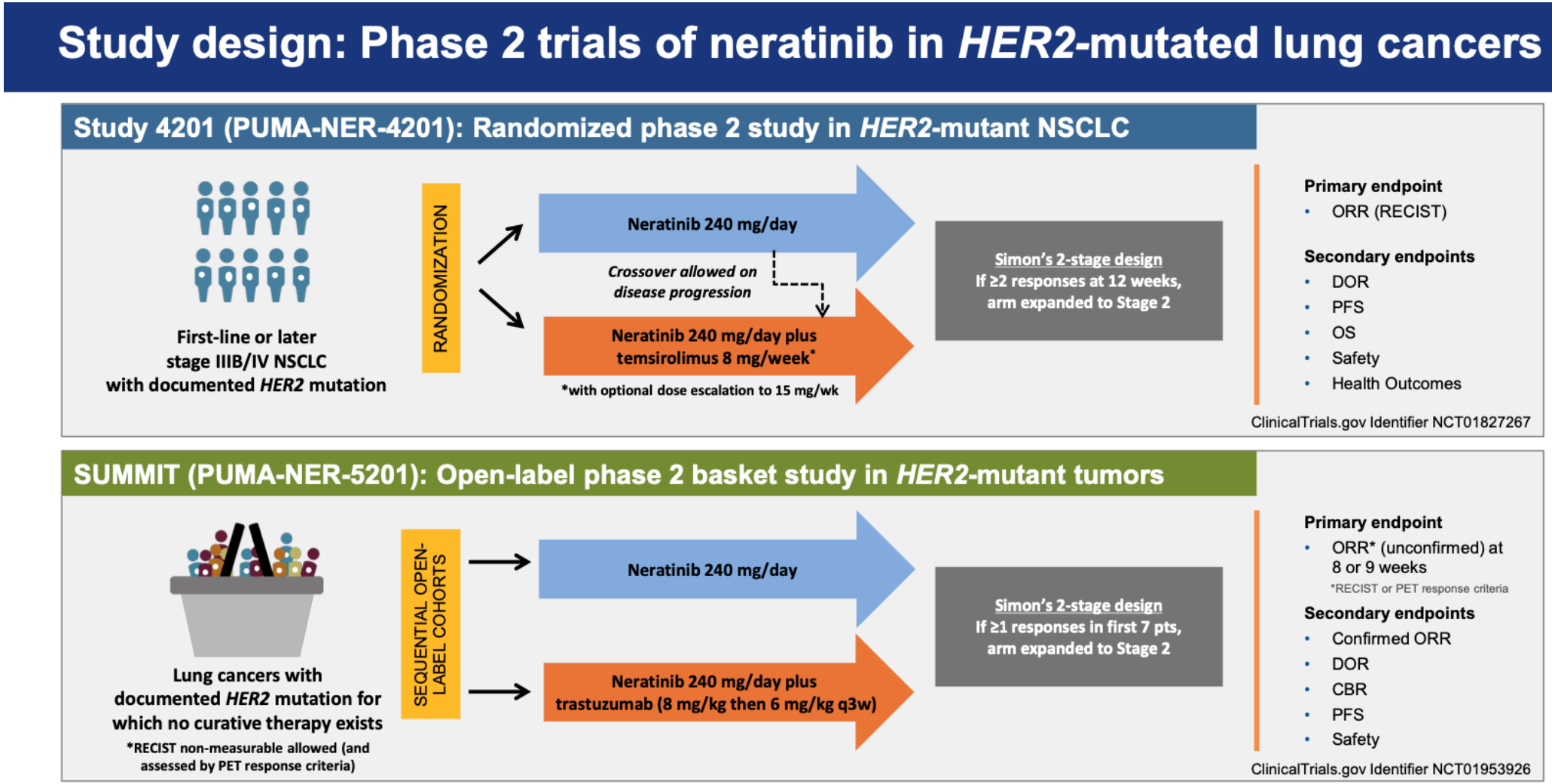
- Cohort 2 (2L HER2 exon 20) primary endpoint was met
- Median age 61yrs; median prior therapy = 2 (1-9); 66% females; 67% non-smokers; 13% stable brain metastases at entry
- Common Grade 3 TRAEs: Diarrhea (26%), Rash (29%), mucosal inflammation (10%)

| | 2L EGFR Exon 20 (N=115) | 2L HER2 Exon 20 (N=90) |
|---|---|---|
| ORR (n), [95% CI] | **14.8%** (17) [8.9, 22.6%] | **27.8%** (25) [18.9, 38.2%] |
| Unconfirmed ORR (n), [95% CI] | **19.1%** (22) [12.4, 27.5%] | **31.1%** (28) [21.8, 41.7%] |
| DCR (n), [95% CI] | **68.7%** (79) [59.4, 77.0%] | **70.0%** (63) [59.4, 79.2%] |
| DoR, median (months), [95% CI] | **7.4** [3.7, 9.7] | **5.1** [4.2, 5.5] |
| PFS, median (months), [95% CI] | **4.2** [3.7, 6.6] | **5.5** [3.9, 5.8] |




Cornelissen R et al. Presented at: 2020 World Conference on Lung Cancer Singapore; January 28-31; Virtual Abstract MA11.04

# HER2 Targeted Therapy: Neratinib



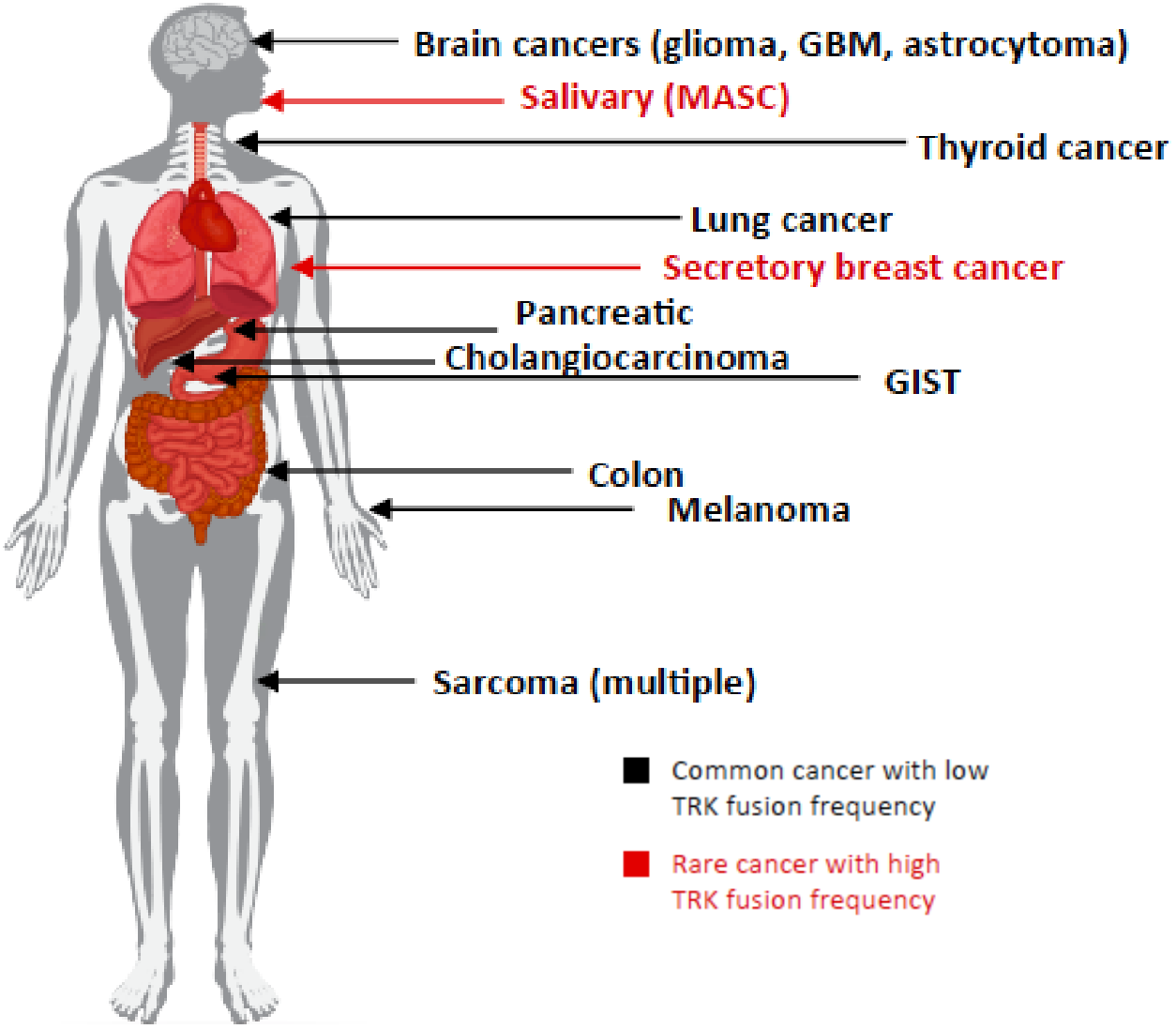

Li B et al. Presented at 2020 World Conference on Lung Cancer Singapore; January 28-31; Virtual Abstract FP14.15

# HER2 Targeted Therapy: Summary

- Recent FDA approval of trastuzumab-deruxtecan
- Existing and emerging small molecule TKIs are only modestly active
- Poziotinib demonstrates increased activity against HER2 mutated NSCLC compared to other TKIs

# Other less common actionable targets: NTRK, RET

# NTRK Targeted Therapy



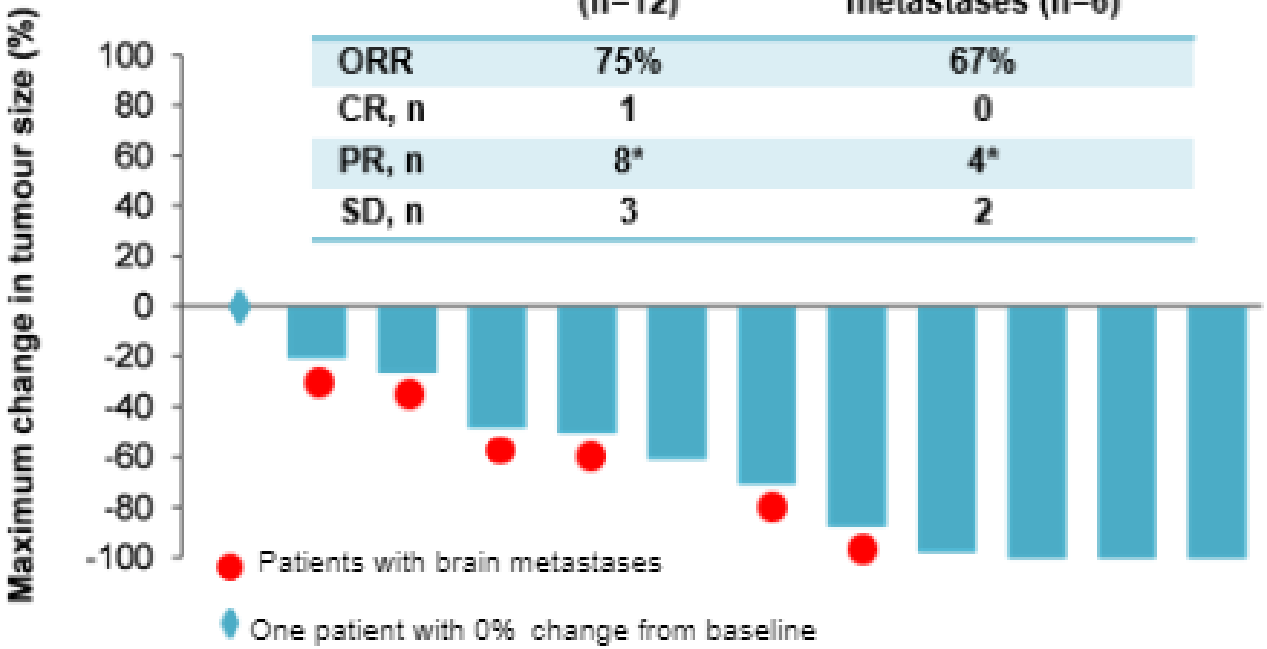

NTRK fusions are found across multiple cancer histologies

1500-5000 patients in United States annually

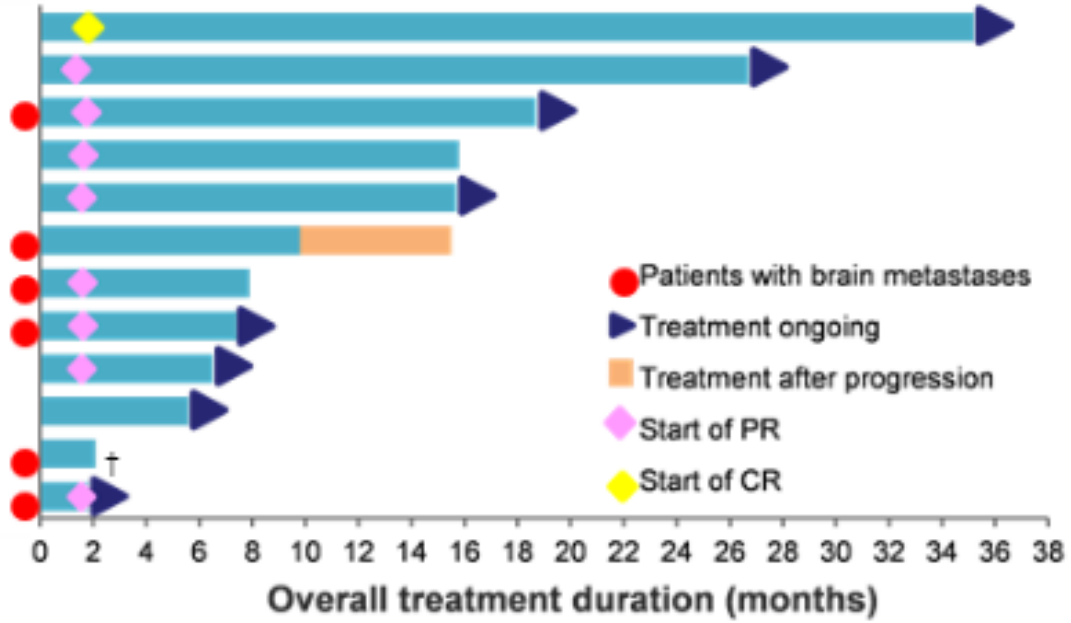
Hyman et al presented as ASCO Annual Meeting 2017

# LOXO-TRK-14001/SCOUT/NAVIGATE TRIALS:
## Larotrectinib with efficacy in solid tumors with NTRK gene fusion

| | All patients (n=12) | Patients with brain metastases (n=6) |
|---|---|---|
| ORR | 75% | 67% |
| CR, n | 1 | 0 |
| PR, n | 8* | 4* |
| SD, n | 3 | 2 |




Median duration of response not reached (range 3.9+ to 25.9+ months)
(median follow-up of 12.8 months)



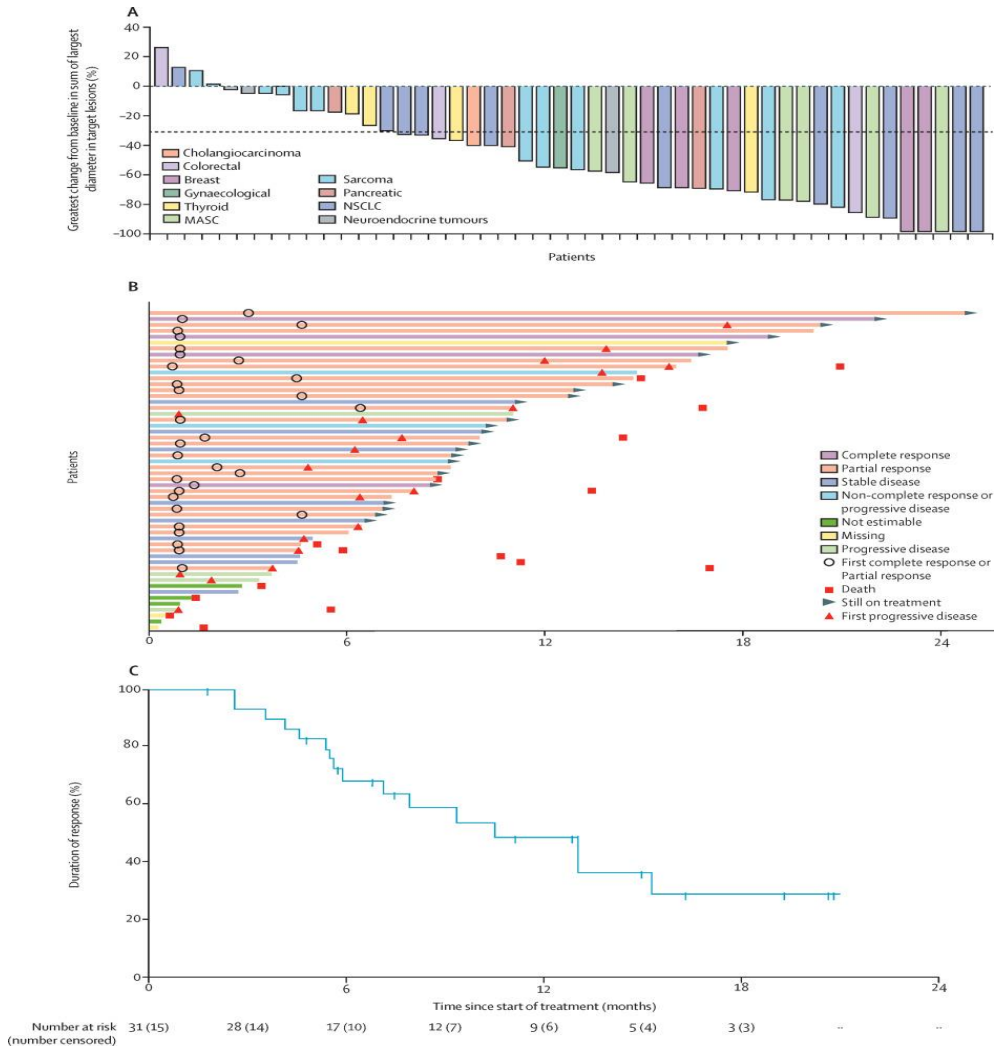

Duration of treatment: 1.8+ to 35.2+

November 2018: FDA approved larotrectinib for solid tumors harboring NTRK gene fusion

Farago et al presented at World Conference on Lung Cancer 2019

# ALKA-372-001/STARTRK-1/STARTRK-2 TRIALS:

## Entrectinib with efficacy in solid tumors with NTRK gene fusion




- Pooled analysis of 3 phase I/II trials
- 10 different tumor types
- 31 of 54 patients had objective response
  - 7% CR
  - 50% PR
- Most common AEs
  - Increased weight
  - Anemia
  - Cognitive disorder

August 2019: FDA approved entrectinib for solid tumors harboring NTRK gene fusion

Doebele et al Lancet Oncol 2020;21(2):271-282

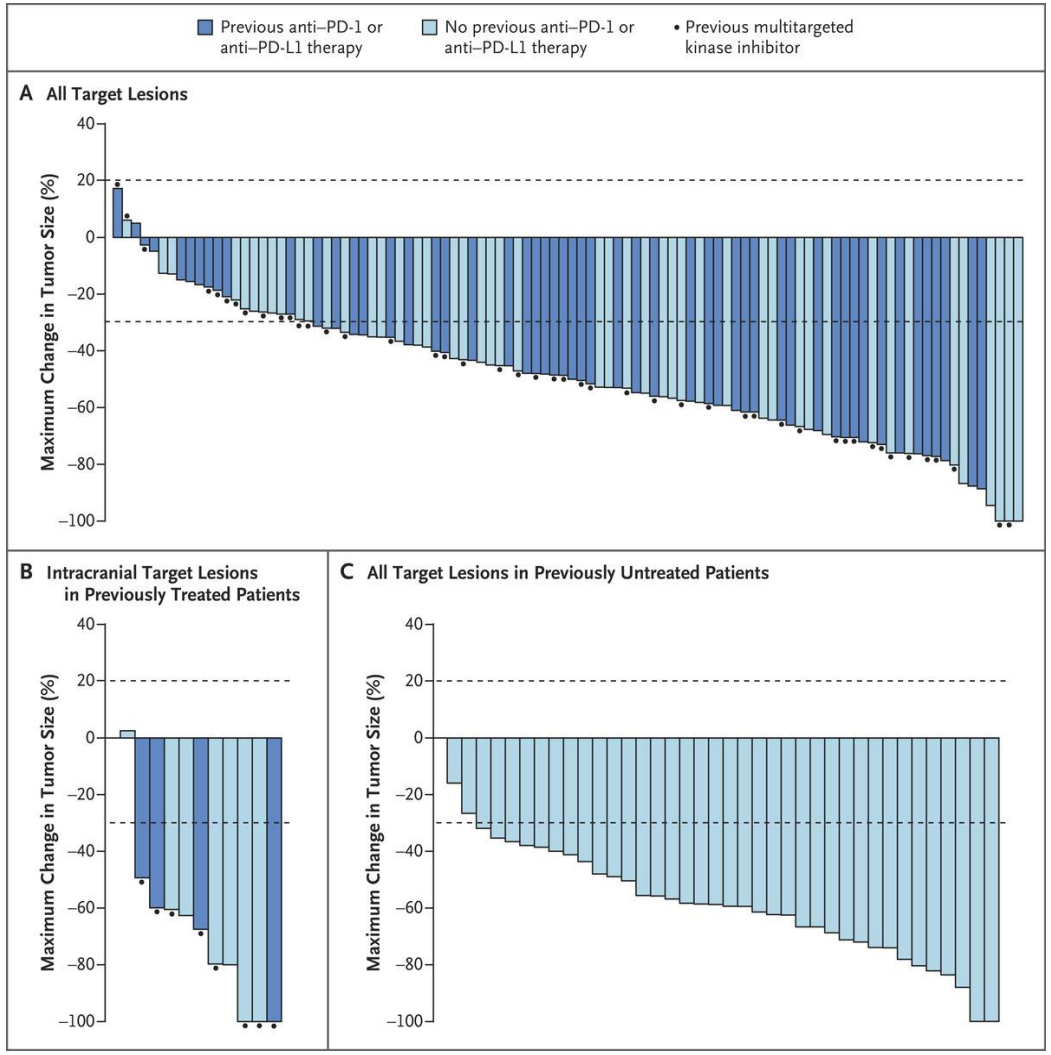
# NTRK Targeted Therapies: Summary

- NTRK is an uncommon mutation in NSCLC (<0.5%)
- NTRK inhibitors larotrectinib and entrectinib are FDA approved for NTRK positive solid tumors, including NSCLC
- High response rates (>70%) and generally well tolerated

# RET Alterations

- Seen in 1-2% of NSCLC
- Associated with high risk of CNS metastases
- Multi-kinase inhibitors target various kinases and other receptors (including RET)
  - Sunitinib, sorafenib, vandetanib, cabozantinib, regorafenib, lenvatinib, alectinib
    - Limited clinical benefit
    - Dose-limiting off target toxic effects
- Recent FDA approvals of selpercatinib and pralsetinib

# LIBRETTO-001 TRIAL:
## Selpercatinib effective in *RET*-fusion-positive NSCLC




- 105 patients with RET positive NSCLC
- ORR= 64%
- Intracranial response: 91%
  - Noted in 10/11 patients with CNS mets
- Most common AEs
  - HTN
  - Increased AST

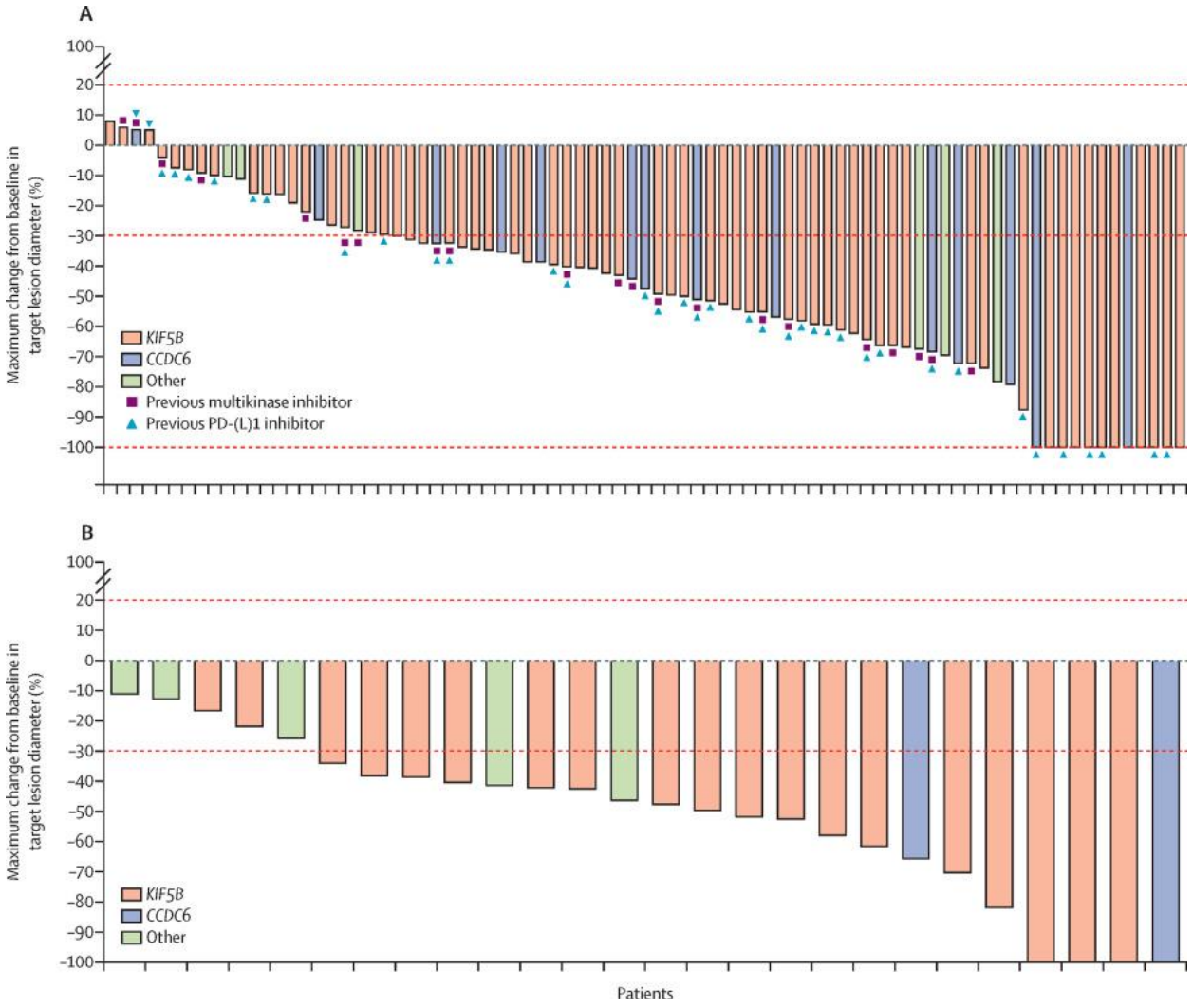
May 2020: FDA accelerated approval of selpercatinib for patients for RET+ NSCLC

Sept 2022: FDA approved selpercatinib for patients for advanced or metastatic tumors with RET gene fusion

Drillon et al NEJM 2020;383:813-834

# ARROW TRIAL:

## Pralsetinib effective in *RET*-fusion-positive NSCLC

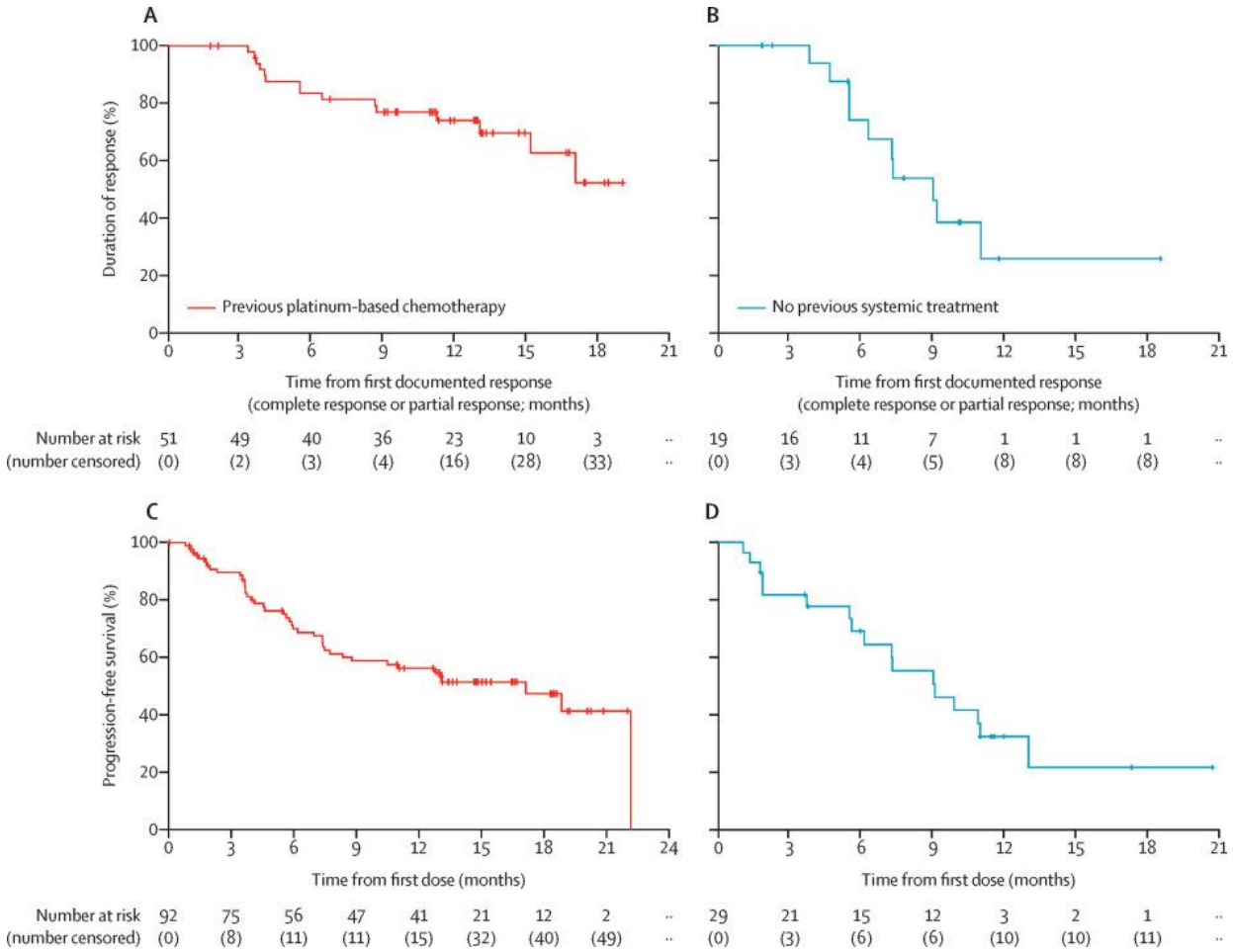



- Phase I/II study
- 233 patients with RET positive NSCLC
  - 92 patients with prior platinum-based chemo (ORR= 61%)
  - 29 patients were treatment naïve (ORR= 70%)
- Most common AEs
  - Neutropenia
  - HTN
  - Anemia

December 2020: FDA accelerated approval for pralsetinib for patients with RET+ NSCLC

Gainor et al. Lancet Oncol 2021;22(7):959-969

# Pralsetinib




- Shrinkage of CNS mets noted in all 9 patients with measurable intracranial metastases
  - 5/9 patients had intracranial response (with 3 CRs)

Gainor et al. Lancet Oncol 2021;22(7):959-969

# RET Targeted Therapy: Summary

- RET fusions seen in 1-2% of NSCLC
- Associated with high risk of CNS metastases
- Selpercatinib and pralsetinib are newly FDA approved options for RET-rearranged NSCLC

# Conclusions

- Obtain sufficient tissue for molecular testing, even in early stage patients
- Driver mutations (even rare subsets) are being identified on NGS panels in NSCLC tumor specimens
- Novel targeted therapeutics offer better outcomes with many recent FDA approvals
- Cancer Moonshot initiative
  - Accelerate research, making more therapies available through precision oncology
  - Bench to bedside