

# 23<sup>rd</sup> Advances in Oncology: Updates in GI Cancers

Cathy Eng, MD, FACP, FASCO

David H. Johnson Endowed Chair in Surgical and Medical Oncology

Professor of Medicine, Hematology and Oncology

Director for Strategic Relations

Co-Director, GI Oncology

Co-Leader, Gastrointestinal Cancer Research Program

Director, Young Adults Cancer Program

Co-Chair, NCI GI Steering Committee

October 29, 2022

Contact Info: [cathy.eng@vumc.org](mailto:cathy.eng@vumc.org)

Twitter: @cathyengmd

FB: cathy eng-mdcancer

[www.youngadultswithcancer.com](http://www.youngadultswithcancer.com)



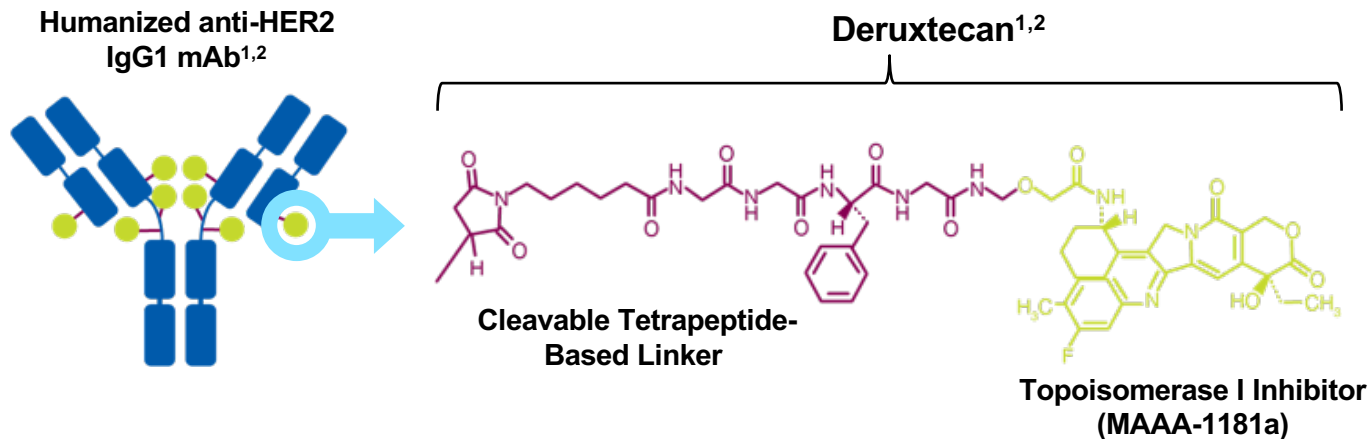
 VANDERBILT-INGRAM CANCER CENTER



# T-DXd Was Designed With 7 Key Attributes

## An ADC composed of 3 components<sup>1,2</sup>:

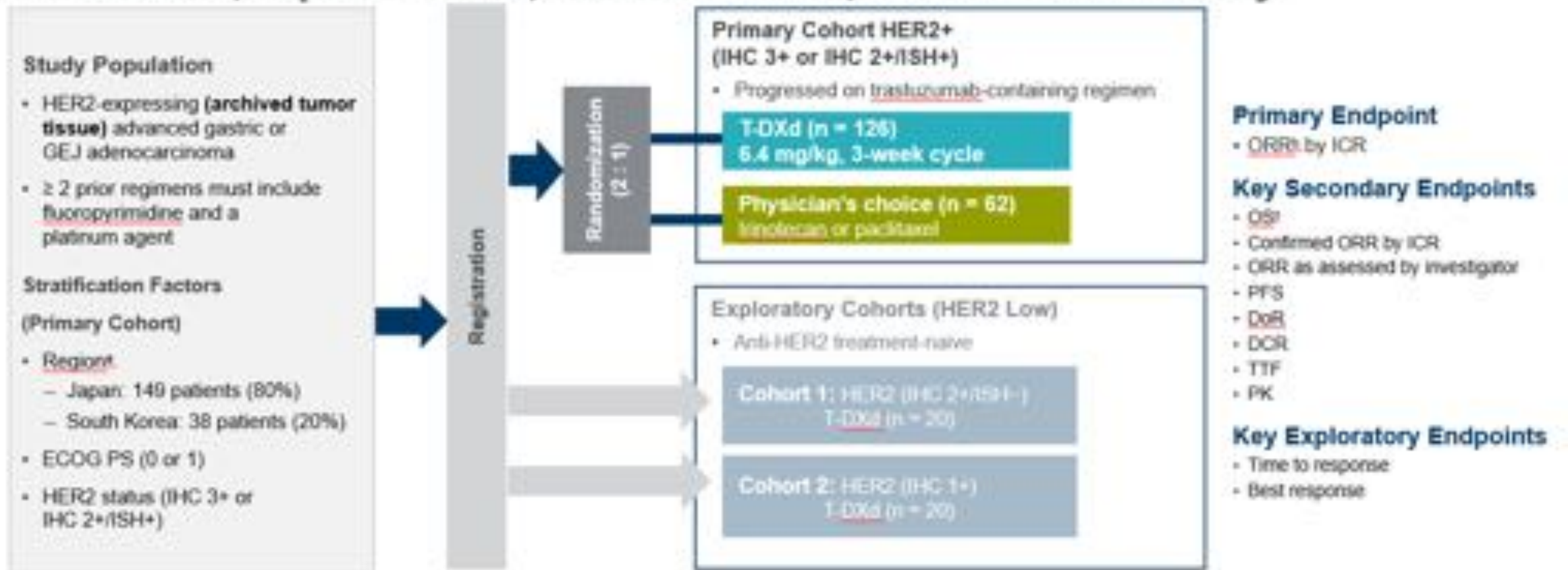
- A humanized anti-HER2 IgG1 mAb with the same amino acid sequence as trastuzumab, covalently linked to:
  - A topoisomerase I inhibitor, an exatecan derivative, via
  - A tetrapeptide-based cleavable linker



- Payload MOA: topoisomerase I inhibitor
- High potency of payload
- High DAR  $\approx 8$
- Payload with short systemic half-life
- Stable linker-payload
- Tumor-selective cleavable linker
- Membrane permeable payload

# Overview of the Safety and Efficacy From the DESTINY-Gastric01 Clinical Trial

## A Phase 2, Open-Label, Randomized, Multicenter Study



# Overview of the Safety and Efficacy From the DESTINY-Gastric01 Clinical Trial

## *DESTINY-Gastric01 Primary Cohort*

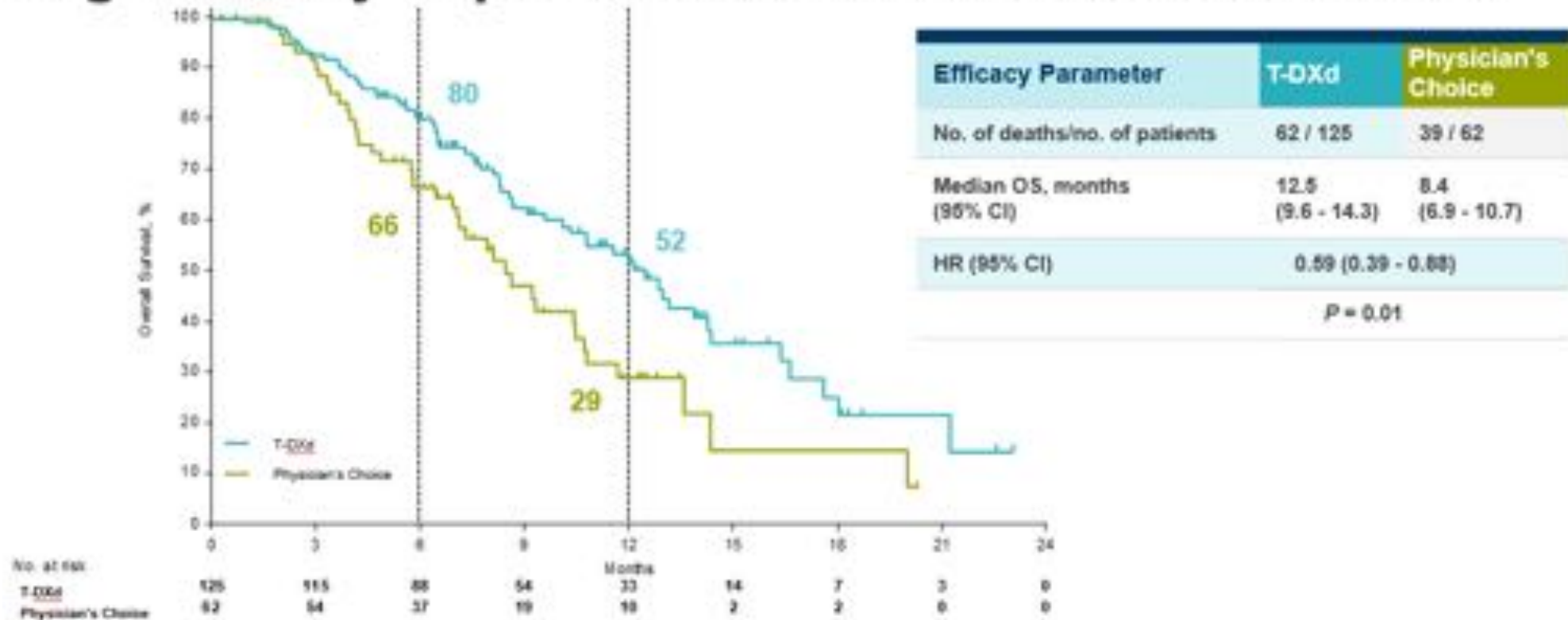
### Baseline Demographics and Clinical Characteristics

Characteristic for All Treated Patients	T-DXd (n = 125)	Physician's Choice (n = 62)
Age, median (range), years <sup>a</sup>	65 (34-82)	66 (28-82)
Female, n (%)	30 (24%)	15 (24%)
Region, n (%)		
Japan	99 (79%)	50 (81%)
Korea	26 (21%)	12 (19%)
ECOG PS, n (%)		
0	62 (50%)	30 (48%)
1	63 (50%)	32 (52%)
Primary site, n (%)		
Gastric	108 (86%)	55 (89%)
GEJ	17 (14%)	7 (11%)
Histological subtype, n (%)		
Intestinal	89 (71%)	38 (61%)
Diffuse	28 (22%)	18 (29%)
Other	8 (6%)	6 (10%)
HER2 expression, n (%) <sup>b</sup>		
IHC 3+	96 (77%)	47 (76%)
IHC 2+ or ISH+	29 (23%)	15 (24%)

# Overview of the Safety and Efficacy From the DESTINY-Gastric01 Clinical Trial

*DESTINY-Gastric01 Primary Cohort*

## Significantly Improved Overall Survival With T-DXd





# TOPAZ-1 study design

TOPAZ-1 is a double-blind, multicenter, global, Phase 3 study

## Key eligibility

- Locally advanced or metastatic BTC (ICC, ECC, GBC)
- Previously untreated if unresectable or metastatic at initial diagnosis
- Recurrent disease >6 months after curative surgery or adjuvant therapy
- ECOG PS 0 or 1

## Stratification factors

- Disease status
  - (initially unresectable versus recurrent)
- Primary tumor location
  - (ICC versus ECC versus GBC)

R (1:1)  
N=685

Durvalumab 1500 mg Q3W  
+ GemCis (up to 8 cycles)

Durvalumab 1500 mg  
Q4W until PD

Placebo Q3W  
+ GemCis (up to 8 cycles)

Placebo  
Q4W until PD

## Primary objective

- Overall survival

## Secondary objectives

- Progression-free survival
- Objective response rate
- Duration of response
- Efficacy by PD-L1 status
- Safety

GemCis treatment: gemcitabine 1000 mg/m<sup>2</sup> and cisplatin 25 mg/m<sup>2</sup> on Days 1 and 8 Q3W administered for up to 8 cycles.

BTC, biliary tract cancer; ECC, extrahepatic cholangiocarcinoma; ECOG, Eastern Cooperative Oncology Group; GBC, gallbladder cancer; GemCis, gemcitabine and cisplatin; ICC, intrahepatic cholangiocarcinoma.

PD, progressive disease; PD-L1, programmed cell death ligand-1; PS, performance status; Q3W, every 3 weeks; R, randomization.

# Patient demographics and baseline characteristics

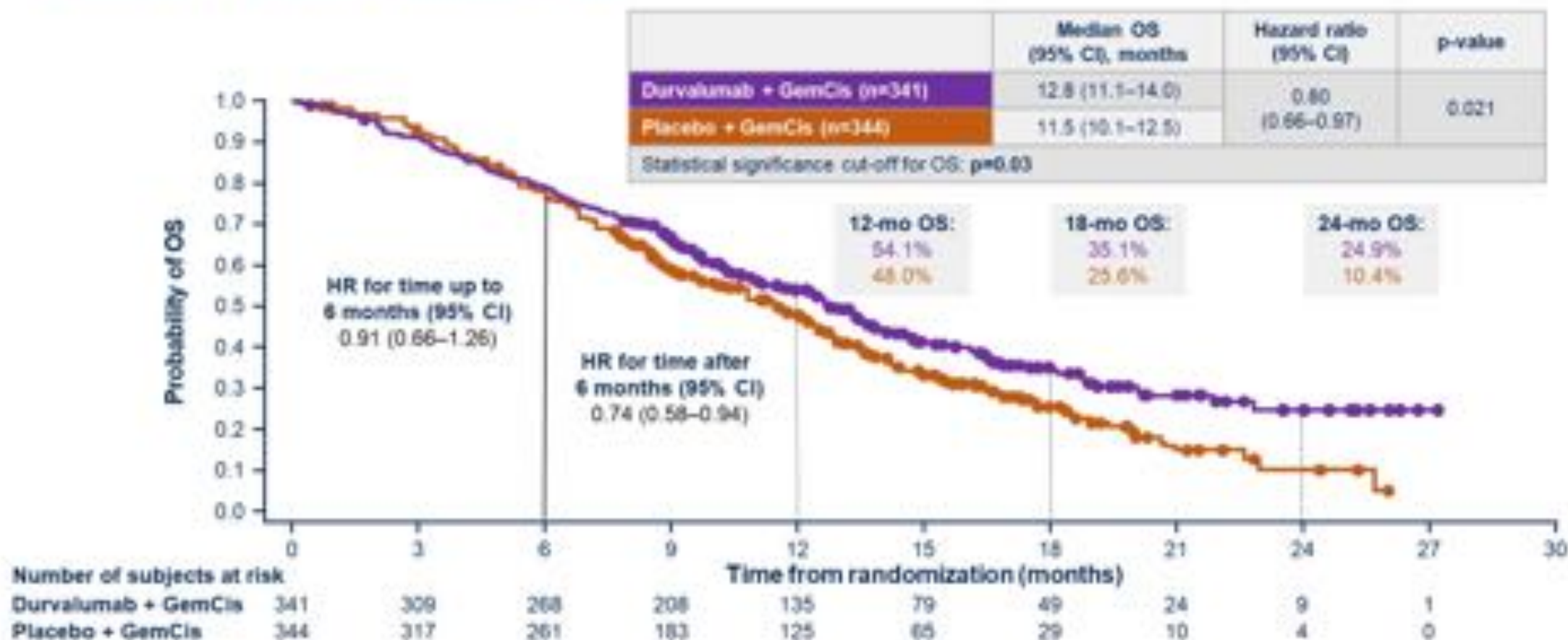
	Durvalumab + GemCis (n=341)	Placebo + GemCis (n=344)
Median age (range), years	64 (20–84)	64 (31–85)
Sex, female, n (%)	172 (50.4)	168 (48.8)
Race, n (%)		
Asian	165 (54.3)	201 (58.4)
White	131 (38.4)	124 (36.0)
Black or African American	8 (2.3)	6 (1.7)
American Indian or Alaska Native	0	1 (0.3)
Other	17 (5.0)	12 (3.5)
Region, n (%)		
Asia	178 (52.2)	196 (57.0)
Rest of the world	163 (47.8)	148 (43.0)
ECOG PS 0 at screening, n (%)	173 (50.7)	163 (47.4)
Primary tumor location at diagnosis, n (%)		
Intrahepatic cholangiocarcinoma	190 (55.7)	193 (56.1)
Extrahepatic cholangiocarcinoma	66 (19.4)	65 (18.9)
Gallbladder cancer	85 (24.9)	86 (25.0)
Disease status at randomization, n (%)		
Initially unresectable	274 (80.4)	279 (81.1)
Recurrent	67 (19.6)	64 (18.6)
Disease classification at diagnosis,* n (%)		
Metastatic	303 (88.9)	286 (83.1)
Locally advanced	38 (11.1)	57 (16.6)
PD-L1 expression,* n (%)		
TAP ≥1%	197 (57.8)	205 (59.6)
TAP <1%	103 (30.2)	103 (29.9)

\*Data missing for remaining patients. Unless otherwise indicated, measurements were taken at baseline.

ECOG, Eastern Cooperative Oncology Group; GemCis, gemcitabine and cisplatin; PD-L1, programmed cell death ligand-1; PS, performance status; TAP, tumor area positivity.



# Primary endpoint: OS



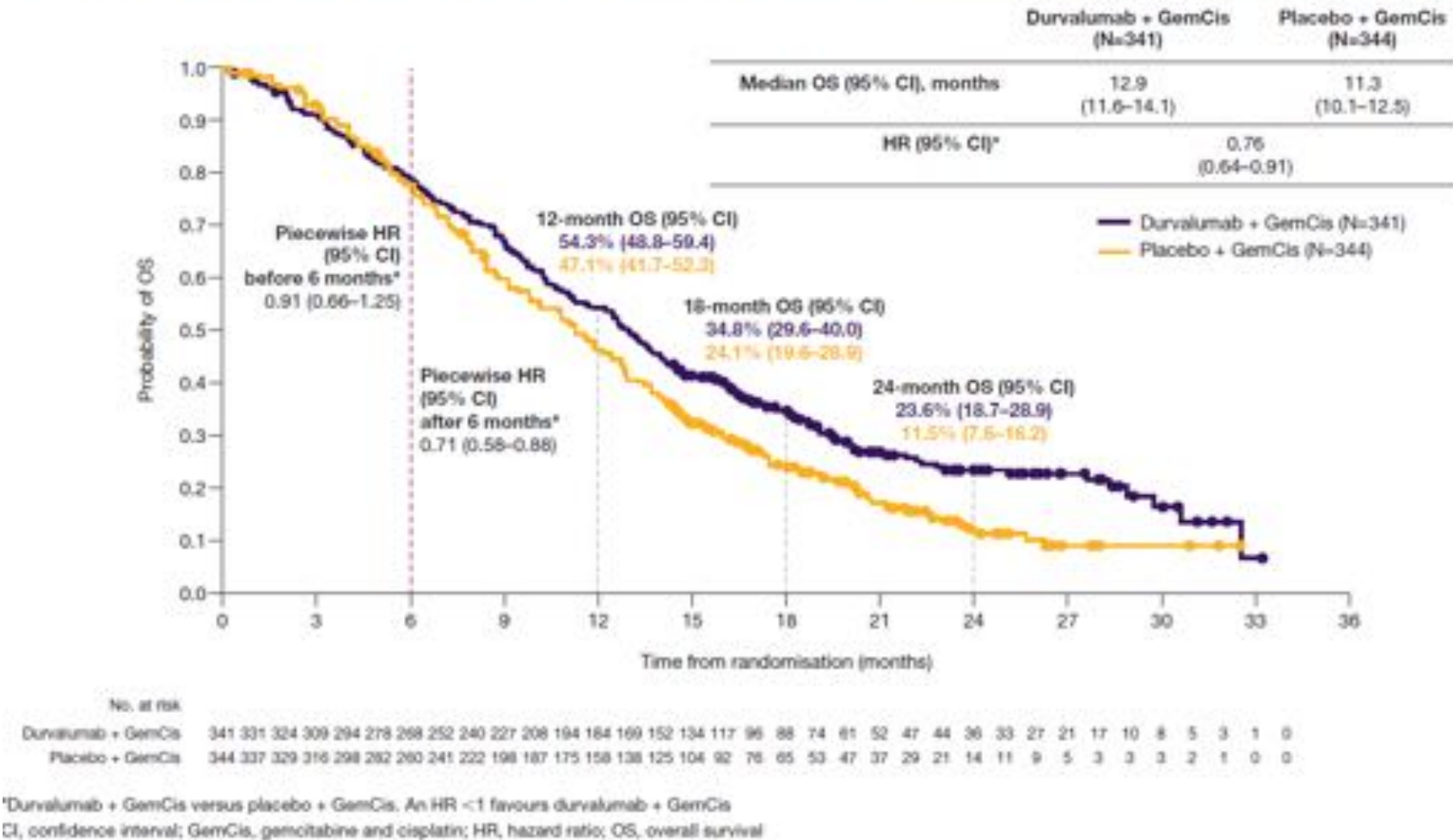
Median duration of follow-up (95% CI) was 16.8 (14.8–17.7) months with durvalumab + GemCis and 15.9 (14.9–16.8) months with placebo + GemCis.

CI, confidence interval; GemCis, gemcitabine and cisplatin; HR, hazard ratio; mo, month; OS, overall survival.



# ESMO 2022: Median 23M of Follow-Up

Figure 2. Kaplan-Meier curve of overall survival



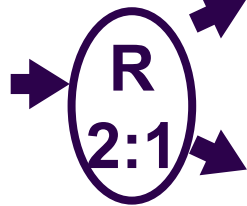
# S1815: Gemcitabine Hydrochloride and Cisplatin With or Without Nab-Paclitaxel in Treating Patients With Newly Diagnosed Advanced Biliary Tract Cancers NCT03768414

N = 268 → NOW 441

CLOSED TO ACCRUAL  
on 2/15/2021!!

\*Prespecified  
stratifications factors:  
tumor type, PS, locally-  
advanced vs metastatic

First line, advanced  
cholangiocarcinoma  
and gallbladder cancer



Gemcitabine  
+ Cisplatin +  
Nab-Paclitaxel  
IV  
Days 1, 8 of a  
21-day cycle

Gemcitabine +  
Cisplatin IV  
Days 1, 8 of a  
21-day cycle

Restage every 3 cycles  
until progression

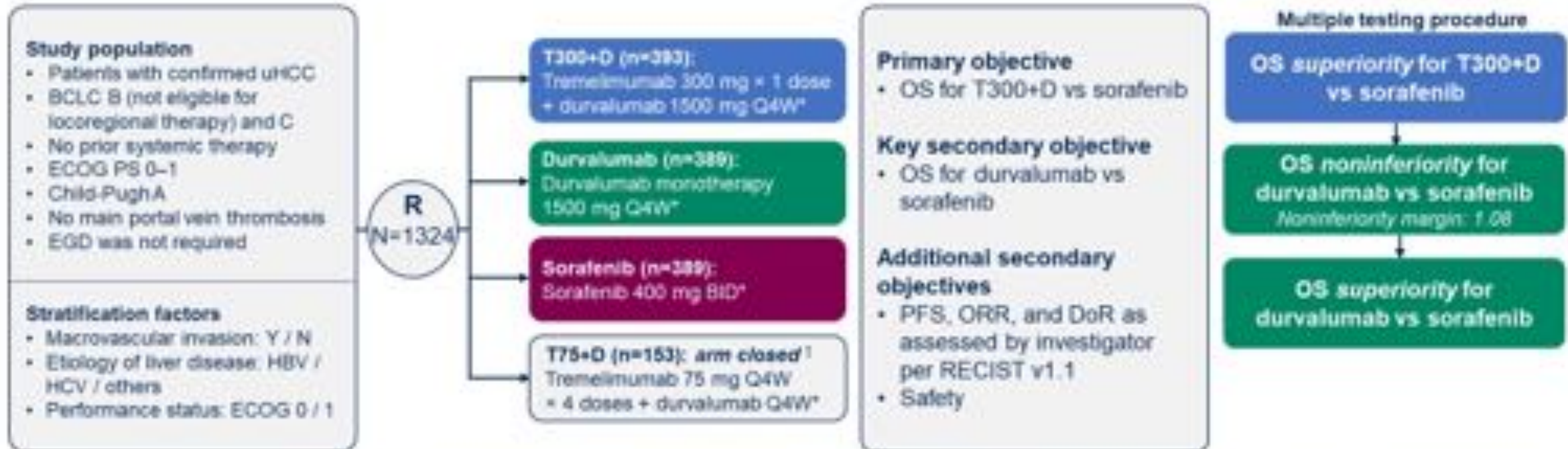
Primary EP: OS; Target HR 0.7

Secondary: ORR, PFS, DCR, safety, CA 19-9 changes

Archival blood and tissue  
specimens to be banked

# HIMALAYA study design

HIMALAYA was an open-label, multicenter, global, Phase 3 trial



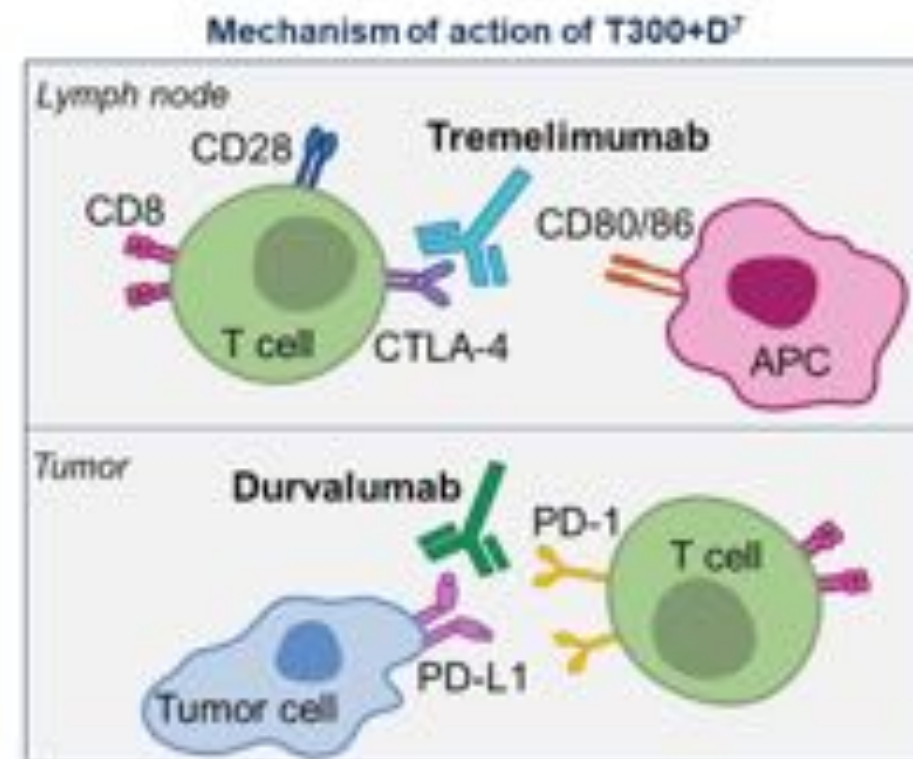
\*Treatment continued until disease progression. Patients with progressive disease who, in the investigator's opinion, continued to benefit from treatment and met the criteria for treatment in the setting of progressive disease could continue treatment. <sup>1</sup>The T75+D arm was closed following a preplanned analysis of a Phase 2 study. Patients randomized to this arm (n=153) could continue treatment following arm closure. Results from this arm are not reported in this presentation.

BID, twice a day; EGD, esophagogastroduodenoscopy; Q4W, every 4 weeks.



# Background

- Until recently, first-line treatment options for uHCC were limited to the multi-kinase inhibitors sorafenib and lenvatinib, which have been associated with median OS of approximately one year and toxicities that impact quality of life<sup>1,2</sup>
- Atezolizumab (anti-PD-L1) plus bevacizumab (anti-VEGF) showed significant survival benefit vs sorafenib in IMbrave150<sup>3</sup> and has become a standard of care following approval in 2020<sup>4,5</sup>
- The STRIDE (Single Tremelimumab Regular Interval Durvalumab; T300+D) regimen, a novel combination featuring a single high-priming dose of tremelimumab (anti-CTLA-4) and regular interval durvalumab (anti-PD-L1), showed encouraging clinical activity and was well tolerated in a Phase 2 trial in uHCC<sup>6</sup>



**Here, we present results from the final analysis of the Phase 3 HIMALAYA trial (NCT03298451), evaluating the STRIDE (T300+D) regimen and durvalumab monotherapy versus sorafenib for the first-line treatment of patients with uHCC**

T300+D, tremelimumab 300 mg × 1 dose + durvalumab 1500 mg Q4W; uHCC, unresectable hepatocellular carcinoma.

1. Llovet et al. *N Engl J Med* 2008;359:378–390. 2. Kudo et al. *Lancet* 2018;391:1163–1173. 3. Finn et al. *N Engl J Med* 2020;382:1894–1905. 4. AxiASTIN [prescribing information]. South San Francisco, CA: Genentech, Inc.; 2020. 5. Benson et al. *J Natl Compr Canc Netw* 2021;19:541–565. 6. Kelley et al. *J Clin Oncol* 2021;39:2991–3001. 7. Kudo. *Liver Cancer* 2019;8:413–426.



# Baseline characteristics

Characteristic	T300+D (n=383)	Durvalumab (n=389)	Sorafenib (n=389)
Male sex, n (%)	327 (83.2)	323 (83.0)	337 (86.6)
Median age (range), years	65.0 (22–86)	64.0 (20–86)	64.0 (18–88)
Region, n (%)			
Asia (excluding Japan)	156 (39.7)	167 (42.9)	156 (40.1)
Rest of world (including Japan)	237 (60.3)	222 (57.1)	233 (59.9)
Viral etiology, <sup>a,†</sup> n (%)			
HBV	122 (31.0)	119 (30.6)	119 (30.6)
HCV	110 (28.0)	107 (27.5)	104 (26.7)
Nonviral	161 (41.0)	163 (41.9)	166 (42.7)
ECOG PS, n (%)			
0	244 (62.1)	237 (60.9)	241 (62.0)
1	148 (37.7)	150 (38.6)	147 (37.8)
BCLC, <sup>‡</sup> n (%)			
B	77 (19.6)	80 (20.6)	66 (17.0)
C	316 (80.4)	309 (79.4)	323 (83.0)

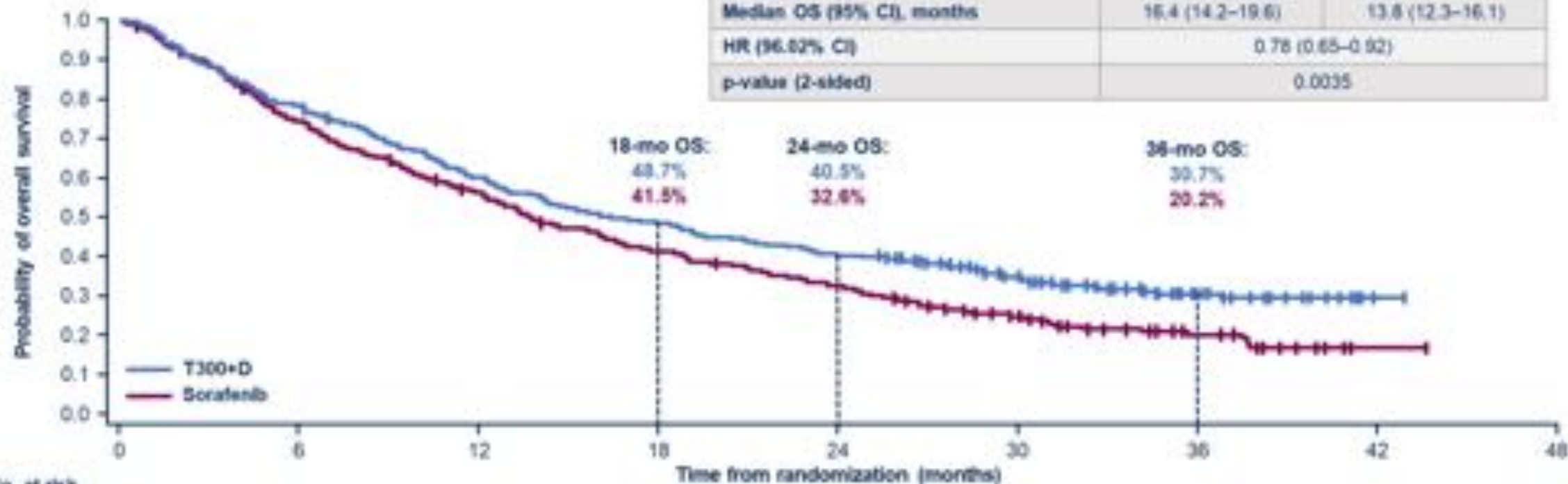
Characteristic	T300+D (n=383)	Durvalumab (n=389)	Sorafenib (n=389)
Child-Pugh classification, <sup>†</sup> n (%)			
A	392 (99.7)	388 (99.7)	386 (99.2)
B	0	1 (0.3)	3 (0.8)
Missing	1 (0.3)	0	0
ALBI grade, n (%)			
1	217 (55.2)	198 (50.9)	203 (52.2)
2	174 (44.3)	189 (48.6)	185 (47.6)
3	1 (0.3)	2 (0.5)	1 (0.3)
MVI, <sup>‡</sup> n (%)	103 (26.2)	94 (24.2)	100 (25.7)
EHS, <sup>‡</sup> n (%)	209 (53.2)	212 (54.5)	203 (52.2)
PD-L1 positive, <sup>‡</sup> n (%)	148 (37.7)	154 (39.6)	148 (38.0)
AFP ≥400 ng/mL, <sup>‡</sup> n (%)	145 (36.9)	137 (35.2)	124 (31.9)

<sup>a</sup>HBV: patients who tested positive for HBsAg or anti-HBc with detectable HBV DNA; HCV: patients who tested positive for HCV or had history of HCV infection; Nonviral: no active viral hepatitis identified. <sup>†</sup>Determined at screening. <sup>‡</sup>Defined as tumor area positivity score ≥1%.

T300+D: trematinumab 300 mg + 1 dose + durvalumab 1500 mg Q4W.

# Primary objective: overall survival for T300+D vs sorafenib

	T300+D (n=393)	Sorafenib (n=389)
OS events, n (%)	262 (66.7)	293 (75.3)
Median OS (95% CI), months	16.4 (14.2–19.6)	13.8 (12.3–16.1)
HR (96.02% CI)	0.78 (0.65–0.92)	
p-value (2-sided)	0.0035	



No. at risk

T300+D	393	308	235	190	158	98	32	1	0
Sorafenib	389	283	211	155	121	62	21	1	0

Data cut-off: August 27, 2021. Median duration of follow-up was 33.18 (95% CI, 31.74–34.53) months for T300+D and 32.23 (95% CI, 30.42–33.71) months for sorafenib.

CI, confidence interval; HR, hazard ratio; OS, overall survival; T300+D, tremelimumab 300 mg + 1 dose + durvalumab 1500 mg Q4W.



# LEAP-002 Study Design (NCT03713593): HCC

## Patients

- Confirmed diagnosis of HCC\*
- No prior systemic therapy for advanced HCC
- Not amenable to curative therapy
- Child-Pugh class A
- ECOG PS 0 or 1
- EGD within 3 mo of randomization
- No main portal vein invasion (Vp4)

R (1:1)  
N=794

**Lenvatinib**  
8 mg (BW <60 kg) or  
12 mg (BW ≥60 kg) oral QD

**Pembrolizumab**  
200 mg IV Q3W

**Lenvatinib**  
8 mg (BW <60 kg) or  
12 mg (BW ≥60 kg) oral QD

**Placebo (saline)**  
IV Q3W

## Treatment until

- Disease progression, intolerable toxicity, investigator/patient decision to withdraw
- Maximum 35 cycles for pembrolizumab or placebo

## Stratification Factors

- Geographic region (Asia vs Japan and rest of world)
- Macroscopic portal vein invasion/extrahepatic spread (yes vs no)
- AFP level (≤400 vs >400 ng/mL)
- ECOG PS (0 vs 1)

## Dual primary endpoints:

- OS
- PFS<sup>†</sup> per RECIST v1.1 by BICR

## Secondary endpoints included:

- ORR and DOR per RECIST v1.1 and mRECIST by BICR
- Safety/tolerability

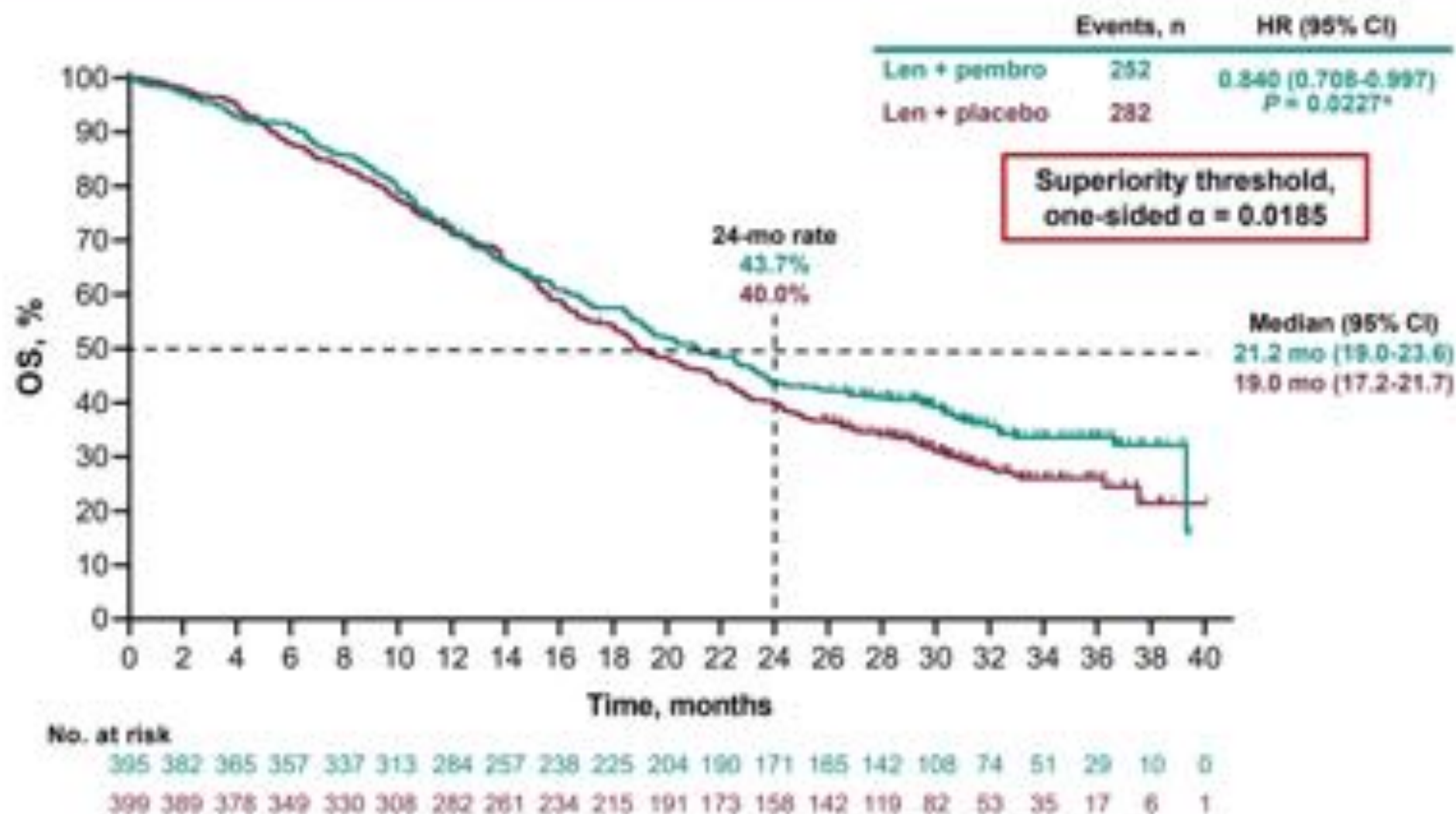
## Post-treatment follow-up to assess

- Safety
- Disease status
- Survival status

Finn et al: ESMO 2022

\*Diagnosis to be confirmed by radiology, histology, or cytology (fibrolamellar and mixed hepatocellular/choleangiocarcinoma subtypes are not eligible). Radiologic confirmation of diagnosis is provided by the study site. Clinically confirmed diagnosis of HCC (with liver mass ≥1 cm and arterial hypervascularity with washout in the venous phase seen with either triphasic CT or MRI) per American Association for the Study of Liver Diseases criteria. <sup>†</sup>Radiological imaging assessment performed Q3W.

# Overall Survival, ITT, FA



\*Did not reach superiority threshold, one-sided  $\alpha = 0.0185$ .  
Data cutoff date for ITT: 21 June 2022; median follow-up: 32.1 months.



# **Nimotuzumab Combined with Gemcitabine versus Placebo plus Gemcitabine in K-Ras Wild-type locally Advanced or Metastatic Pancreatic Cancer: A Prospective, Randomized-controlled, Double-blinded, Multicenter and Phase III Clinical Trial (Notable Study)**

Shukui Qin, MD<sup>1</sup>; Jin Li, MD<sup>2</sup>; Yuxian Bai, MD<sup>3</sup>; Zishu Wang, MD<sup>4</sup>; Zhendong Chen, MD<sup>5</sup>; Ruihua Xu, MD<sup>6</sup>; Jianming Xu, MD<sup>7</sup>; Hongmei Zhang, MD<sup>8</sup>; Jia Chen, MD<sup>9</sup>; Ying Yuan, MD<sup>10</sup>; Tianshu Liu, MD<sup>11</sup>; Lin Yang, MD<sup>12</sup>; Haijun Zhong, MD<sup>13</sup>; Donghui Chen, MD<sup>14</sup>; Lin Shen, MD<sup>15</sup>; Chunyi Hao, MD<sup>16</sup>; Deliang Fu, MD<sup>17</sup>; Ying Cheng, MD<sup>18</sup>; Jianwei Yang, MD<sup>19</sup>; Qiong Wang, MD<sup>20</sup>; Baoli Qin, MD<sup>21</sup>; Qingshan Zheng, MD<sup>22</sup>; Xian hong Bai, MD<sup>23</sup>

<sup>1</sup>Jinling Hospital, Nanjing University of Chinese Medicine, China; <sup>2</sup>Shanghai East Hospital, China; <sup>3</sup>Harbin Medical University Cancer Hospital, China; <sup>4</sup>The First Affiliated Hospital of Bengbu Medical College, China; <sup>5</sup>The Second Affiliated Hospital of Anhui Medical University, China; <sup>6</sup> Sun Yat-sen University Cancer Center, China; <sup>7</sup> Oncology, The Fifth Medical Center, General Hospital of PLA, China; <sup>8</sup>Xijing Hospital, Air Force Medical University of PLA, China; <sup>9</sup>Jiangsu Cancer Hospital, China; <sup>10</sup>, The Second Affiliated Hospital Zhejiang University School of Medicine, China; <sup>11</sup> Zhongshan Hospital, Fudan University, China; <sup>12</sup>Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, China; <sup>13</sup> Zhejiang Cancer Hospital, China; <sup>14</sup> First People's Hospital, School of Medicine, Shanghai Jiao Tong University, China; <sup>15</sup> Peking University Cancer Hospital & Institute, China; <sup>16</sup>Beijing Cancer Hospital, China; <sup>17</sup> Huashan Hospital, Fudan University, China; <sup>18</sup>Jilin Cancer Hospital, China; <sup>19</sup> Fujian Cancer Hospital, Fuzhou, China; <sup>20</sup>Jiangyin People's Hospital, China; <sup>21</sup>Liaoning Cancer Hospital & Institute, China; <sup>22</sup>Shanghai University of traditional Chinese medicine, China; <sup>23</sup>Biotech Pharmaceutical Ltd., Corp, China.

# Notable Study design (NCT01074021)

## ● A Prospective, Randomized-controlled, Double-blinded, Multicenter Phase III Clinical trial, the Registered & Pivotal Study

### Key eligibility criteria:

- Aged 18-75 years;
- Histologically confirmed locally advanced or metastatic pancreatic cancer;
- At least one measurable lesion evaluated by RECIST version 1.1;
- K-Ras wild-type;
- Karnofsky Performance Status  $\geq 60$ .

R  
1:1

**Nimotuzumab (400mg, weekly)  
+ Gemcitabine (1000mg/m<sup>2</sup>, on days 1, 8,  
and 15, every four weeks), until disease  
progression or intolerable toxicity**

#### ● Stratification factors:

- Head vs. body or tail
- Previous surgery (yes vs no).
- Previous treatment of biliary obstruction (yes vs no).
- Previous adjuvant chemotherapy (yes vs no).

**Placebo (400mg,QW)  
+ Gemcitabine (1000mg/m<sup>2</sup>, on days 1, 8,  
and 15, every four weeks), until disease  
progression or intolerable toxicity**

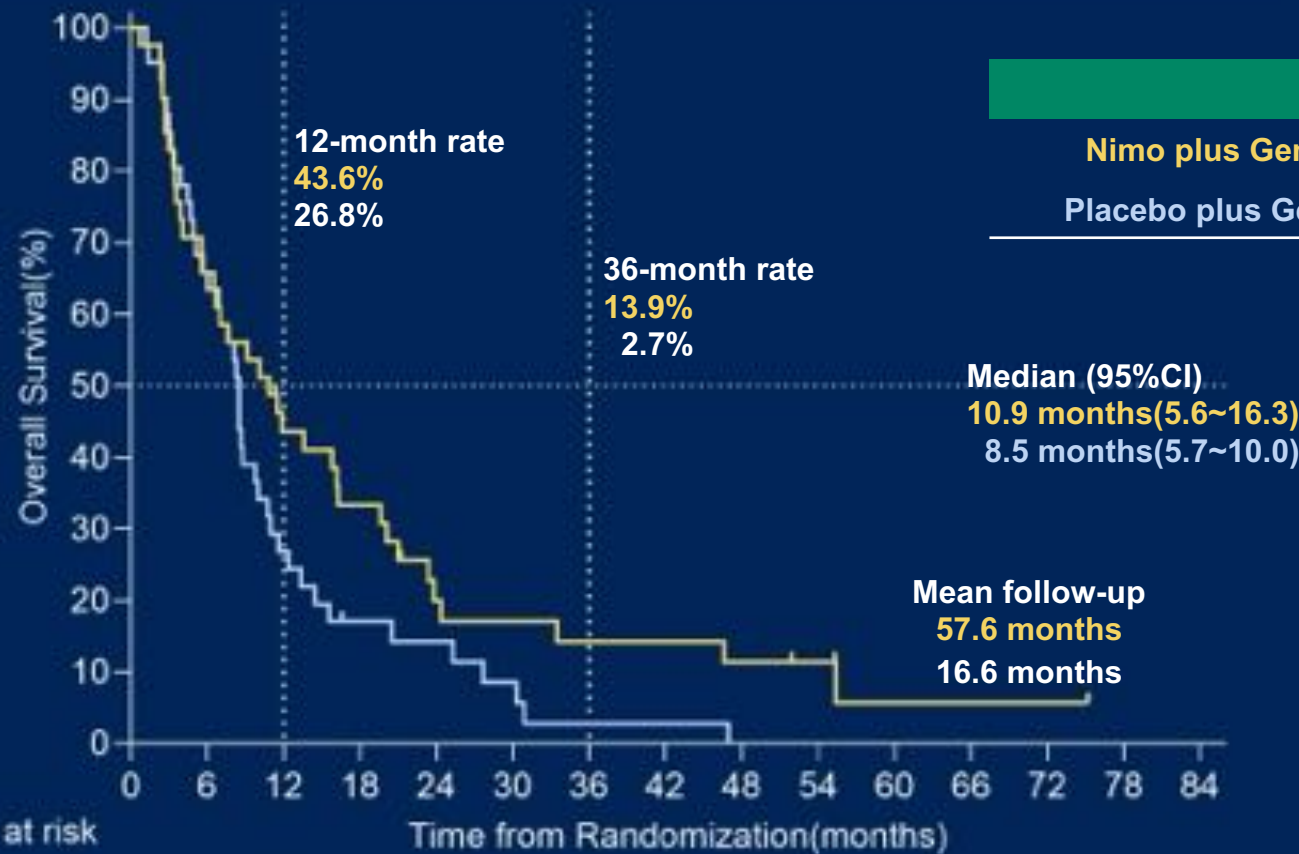
Follow  
up

*A sample size of 79 patients, the study would have 80% power to detect a 5.95 months difference of mOS with Nimo (11.62 months) vs. Placebo (5.65 months) at a two-sided alpha level of 0.05. Finally it will be a sample size of 92 patients at 20% drop out.*

- **Primary endpoint:** OS
- **Secondary endpoints:** PFS, TTP, ORR, DCR, CBR & Safety

\* OS, overall survival; PFS, progression-free survival; TTP, time to disease progression; ORR, objective response rate; DCR, disease control rate, CBR, clinical benefit response

# Overall Survival (Full Analysis Set)



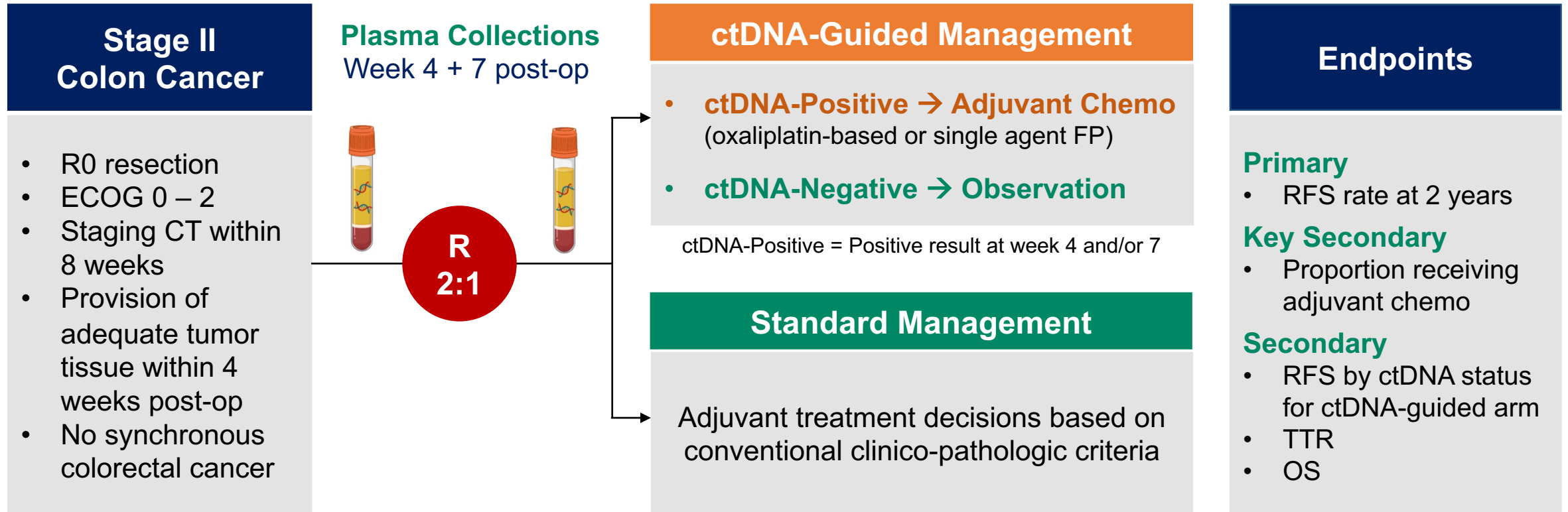
	mOS	HR(95%CI)	P
Nimo plus Gem	10.9 months	0.50	RMST-Log
Placebo plus Gem	8.5 months	(0.06-0.94)	P=0.024

- **Nimo plus Gem regime improved mOS compared with Placebo plus Gem, with a decrease of 50% mortality risk.**

\* There was a violation of the proportional hazards (PH) because the two survival curves cross. Restricted Mean Survival Time (RMST) method (RMSTREG procedure, log-linear models) was used to estimate hazard risk. The adjusted HR with 95% CI was used as primary estimate of the difference between the arms, stratified by tumor location, previous surgery history, previous treatment of bile obstruction, previous adjuvant chemotherapy history at baseline. Data cut-off, Nov.23,2021.

# DYNAMIC Adjuvant Chemotherapy Guided by Circulating Tumor DNA Analysis in Stage II Colon Cancer

ACTRN12615000381583



## Stratification Factors

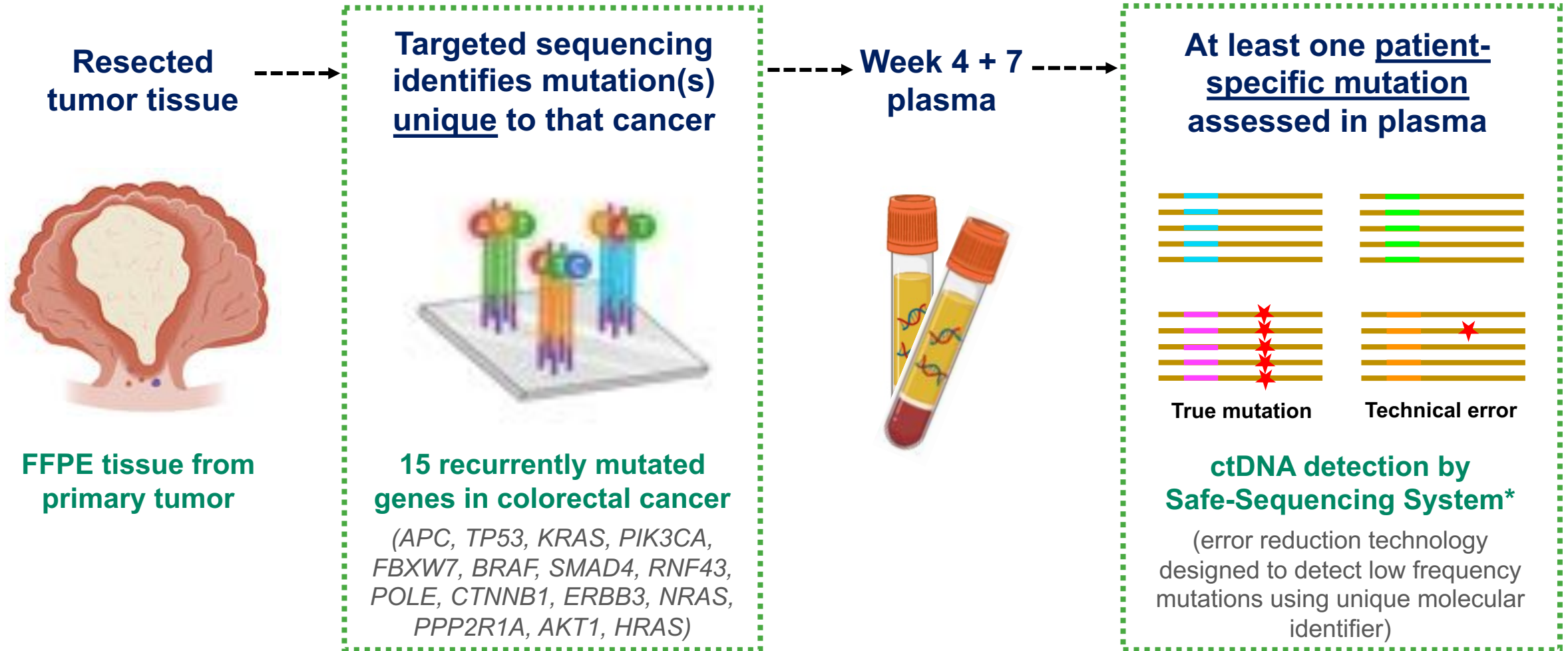
- T stage (T3 vs T4)
- Type of participating center (metropolitan vs regional)

## Surveillance:

- CEA → 3-monthly for 24M, then 6-monthly for 36M
- CT C/A/P → 6-monthly for 24M, then at 36M



# ctDNA Analysis: Tumor-Informed Personalized Approach



\*Kinde *et al.* Proc Natl Acad Sci U S A. 2011;108(23):9530-5

# Baseline Characteristics

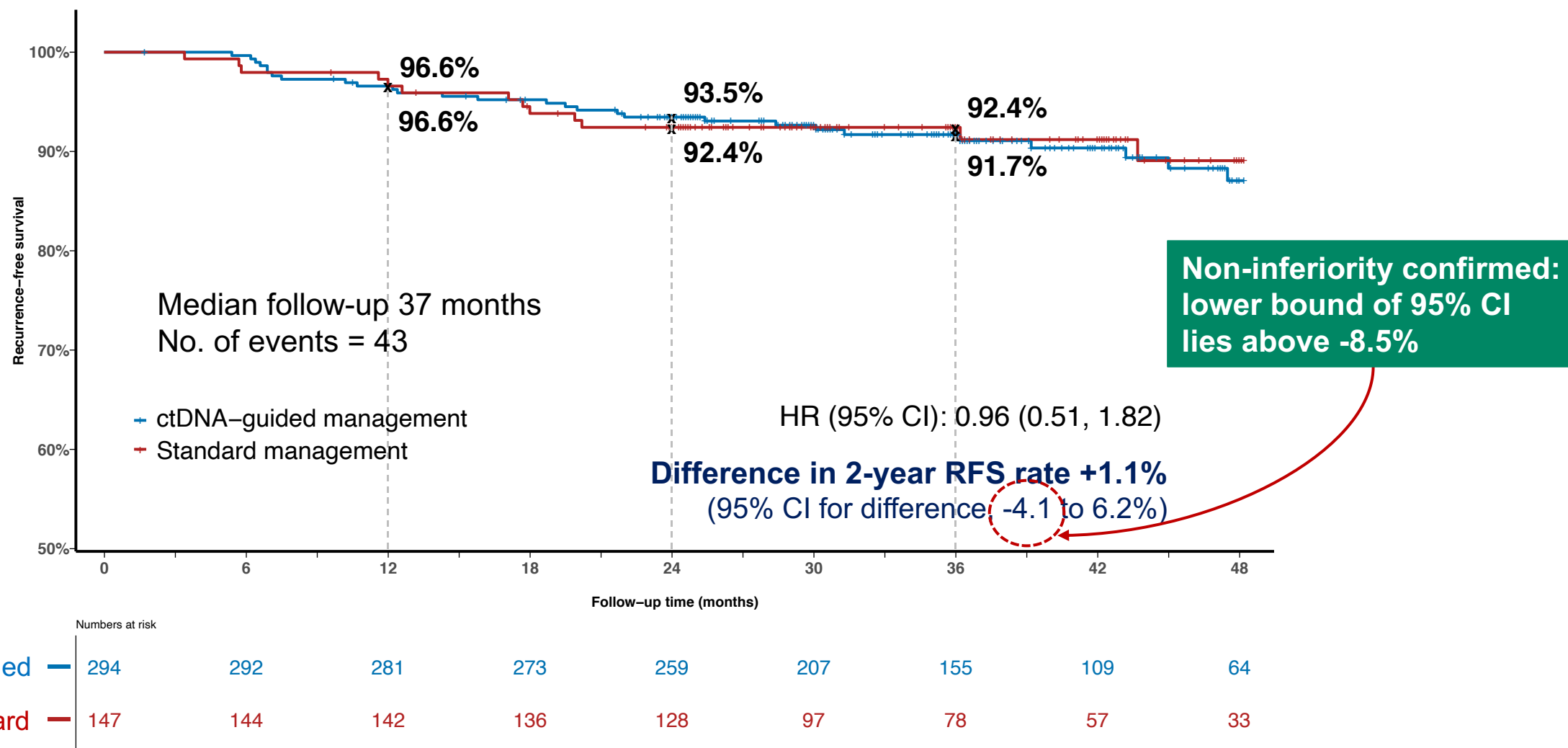
Characteristics	ctDNA-Guided Management N = 294, N (%)	Standard Management N = 147, N (%)
Age, median (range), years	65 (30 , 94)	62 (28 , 84)
Sex, Male	154 (52)	81 (55)
ECOG, 0	226 (77)	124 (84)
Center type, metropolitan	240 (82)	121 (82)
Primary tumor site, left-sided	126 (43)	78 (53)
Tumor stage, T3	250 (85)	127 (86)
Tumor differentiation, poor	43 (15)	17 (12)
Lymph node yield, < 12	13 (4)	7 (5)
Lymphovascular invasion, present	82 (28)	38 (26)
MMR, deficient	59 (20)	27 (18)
Clinical risk group, high*	116 (40)	60 (41)

\*High clinical risk = proficient MMR + ≥1 high-risk feature (T4, poor tumor differentiation, <12 lymph node yield, LVI, tumor perforation and/or bowel obstruction)

# Adjuvant Treatment Delivery

Treatment Information	ctDNA-Guided N = 294	Standard Management N = 147	P-value
Adjuvant Chemotherapy received, n	45 (15%)	41 ( <b>28%</b> )	0.0017
Chemotherapy regimen received, n			
Oxaliplatin-based doublet	28/45 ( <b>62%</b> )	4/41 (10%)	<.0001
Single agent fluoropyrimidine	17/45 (38%)	37/41 ( <b>90%</b> )	
Time from surgery to commencing chemotherapy, median (IQR), days	<b>83</b> (76, 89)	53 (49, 61)	<.0001
Treatment duration, median (IQR), weeks	<b>24</b> (19, 24)	24 (21, 24)	0.9318
Completed planned treatment, n	38 (85%)	32 (78%)	0.7036
Percentage of full dose delivered, median (IQR)	78 (56, 100)	84 (64, 100)	0.6194

# Recurrence-Free Survival (RFS)

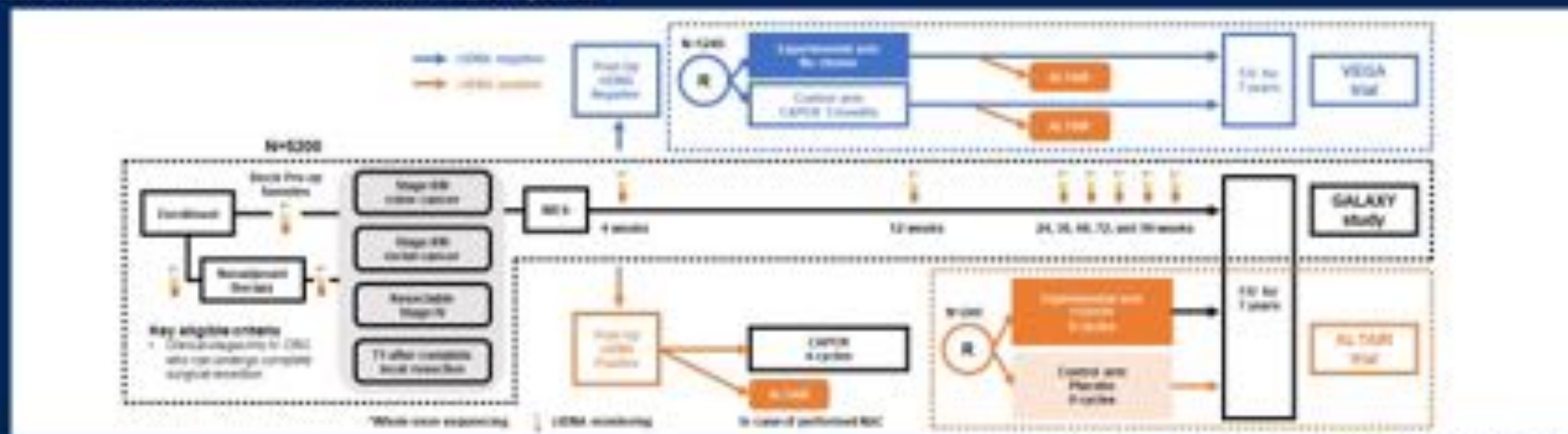




# Background

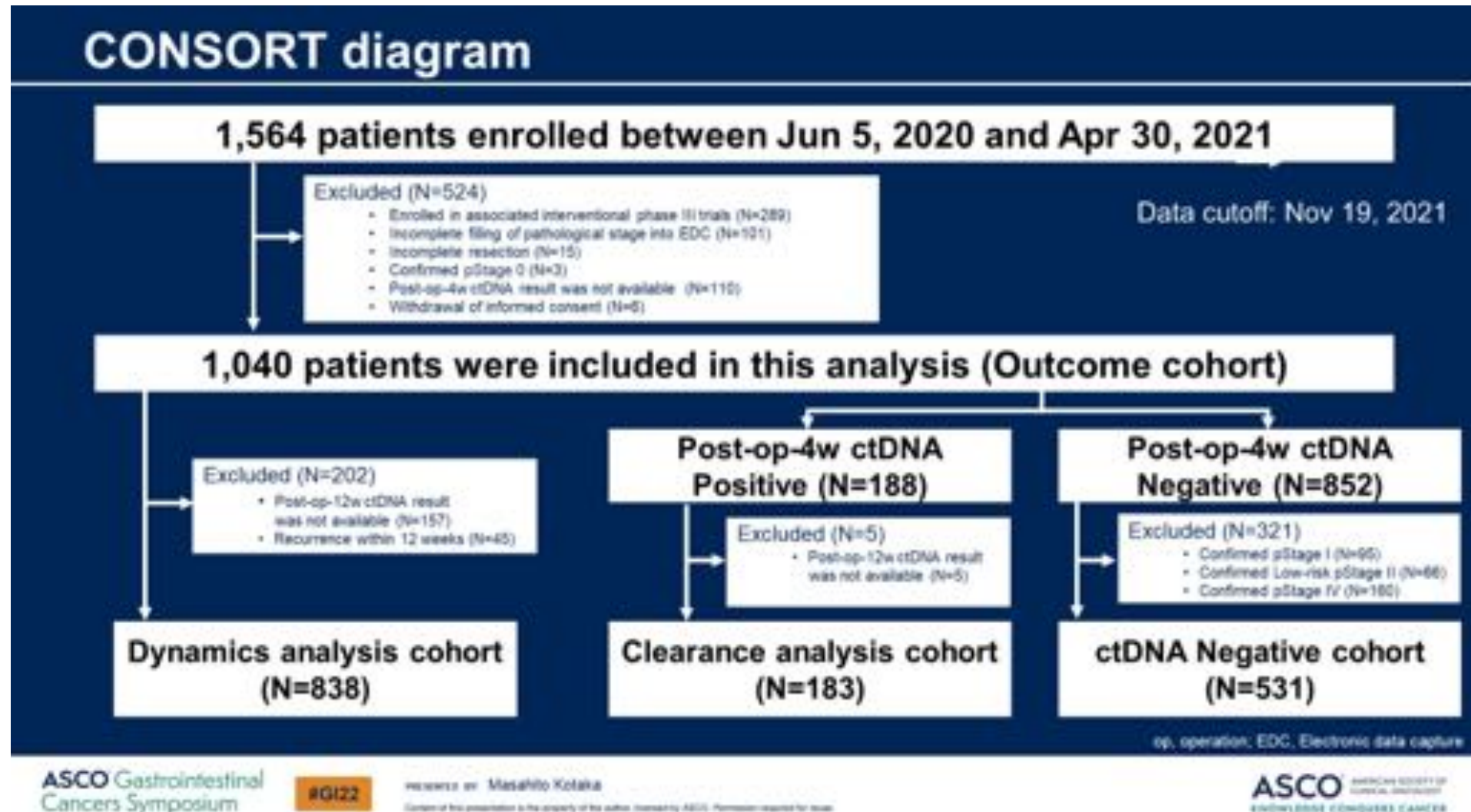
- Circulating tumor DNA (ctDNA)-based molecular residual disease (MRD) has the potential to select patients who may benefit more from standard-of-care (SOC) adjuvant chemotherapy (ACT) by accurately assessing recurrence-risk post-surgery and by evaluating ACT efficacy.
- CIRCULATE-Japan project is a large platform enrolling patients with clinical stage II–IV resectable colorectal cancer (CRC) to evaluate the clinical utility of ctDNA MRD analysis. The study comprises of one observational (GALAXY study) and two randomized phase III trials (VEGA and ALTAIR trials)<sup>1,2</sup>.

## Schema of CIRCULATE-Japan project



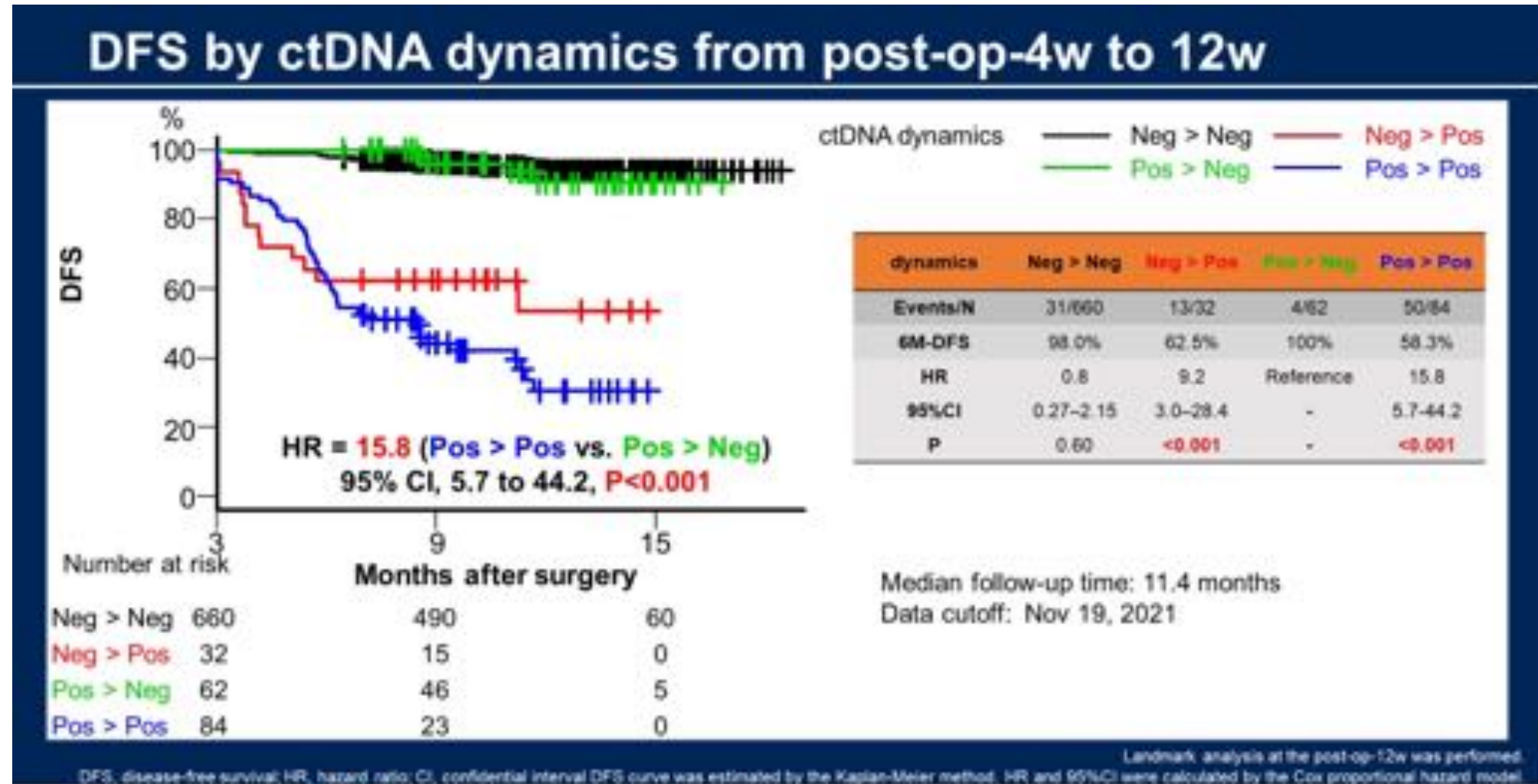
1. Taniguchi H, et al. Cancer Sci 2021, 2. Miyo M, et al. Cancer Sci 2021.

# CIRCULATE-JAPAN (GALAXY Study) Results





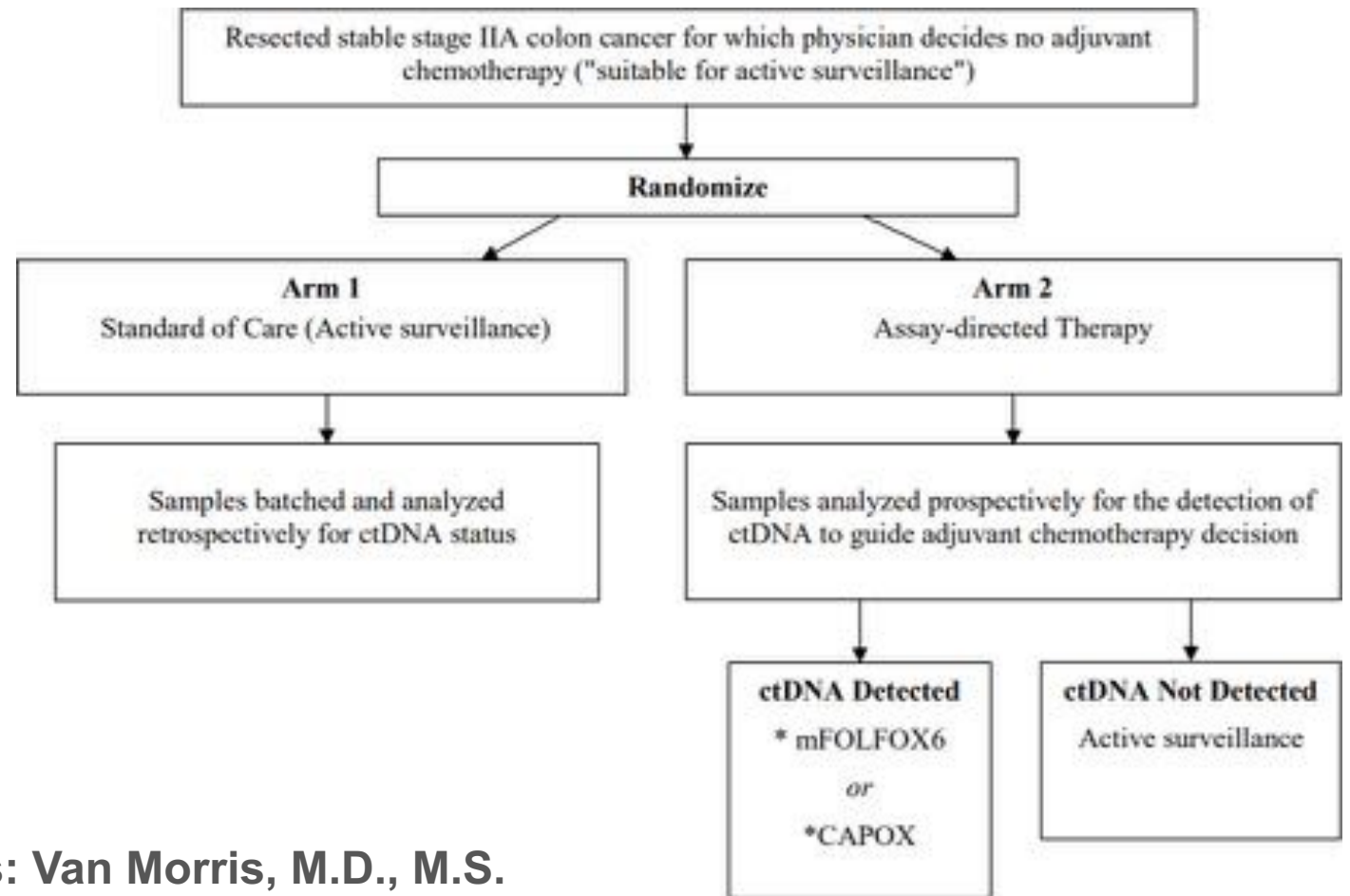
# ctDNA May Guide Adjuvant Treatment for CRC





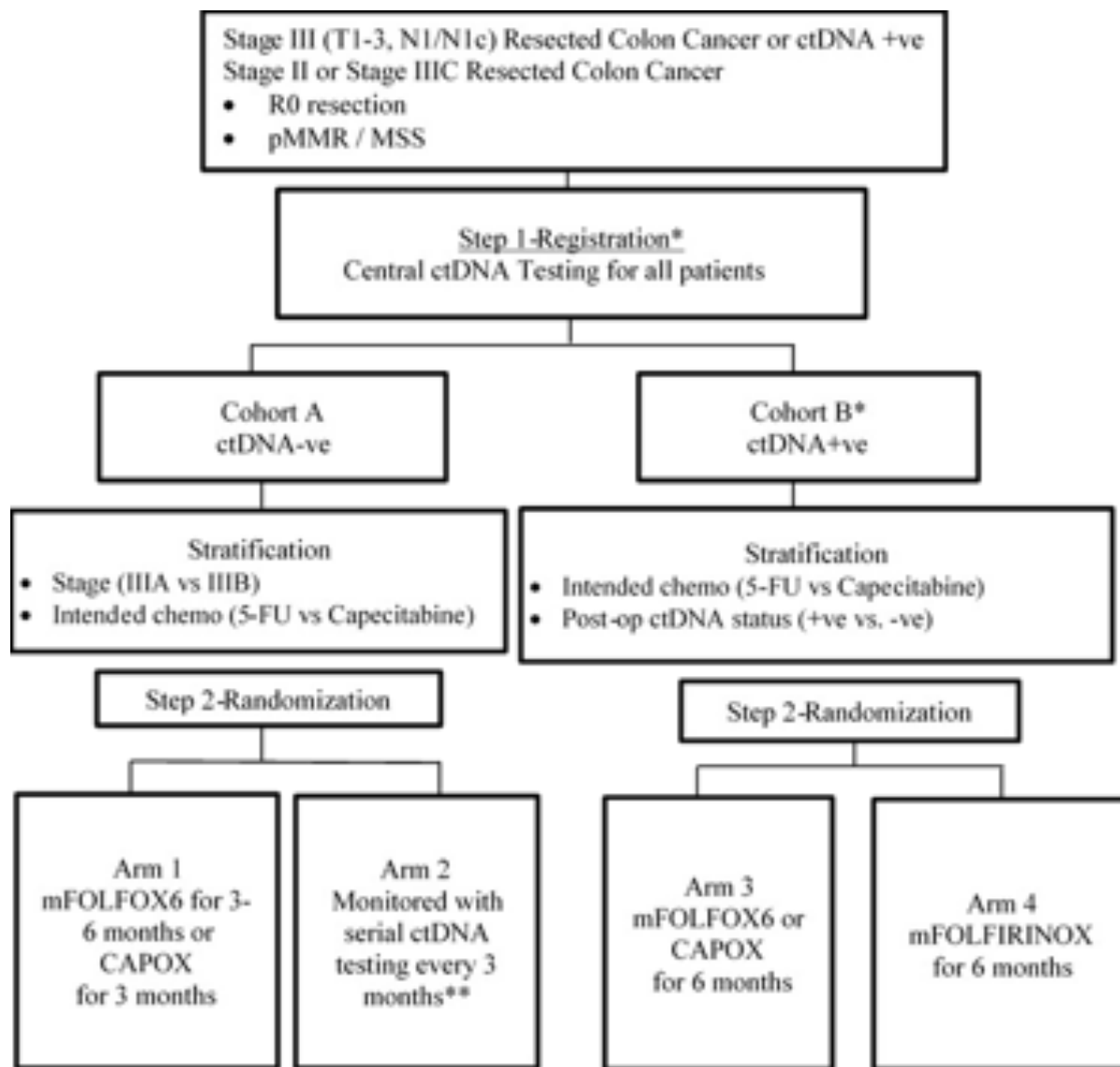
# NRG GI-005 (COBRA)

- **Phase II** - To compare the rate of ctDNA clearance in "ctDNA detected" patients treated with or without adjuvant chemotherapy following resection of stage IIA colon cancer.
- **Phase III** - To compare recurrence-free survival (RFS) in "ctDNA detected" patients treated with or without adjuvant chemotherapy following resection of stage IIA colon cancer
- **Platform:** Guardant



PI's: Van Morris, M.D., M.S.  
Greg Yothers, Ph.D.,  
Scott Kopetz, M.D., Ph.D,  
Thom George, M.D.

# Study Schema



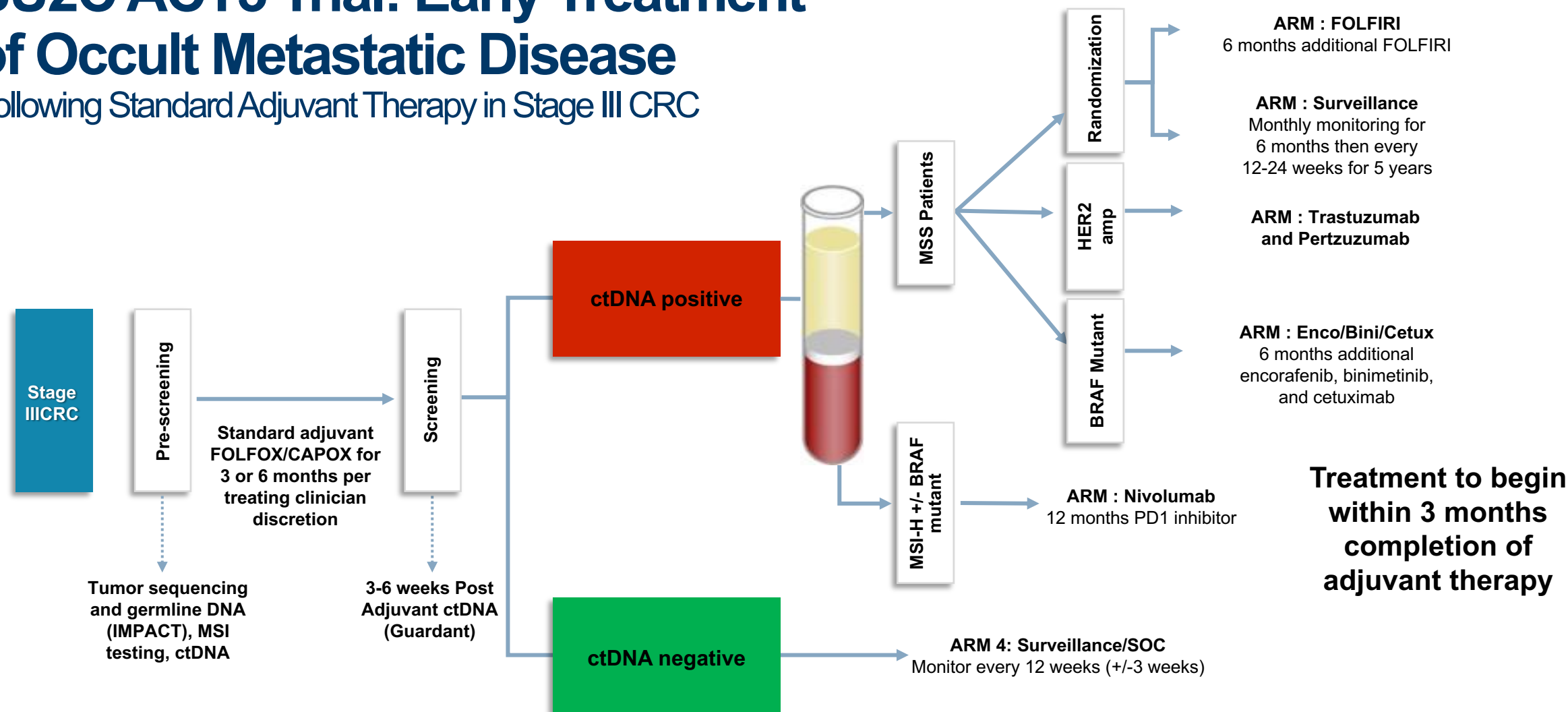
\*Patients with completely resected stages II or IIIC colon cancer who are ctDNA +ve as determined by a Signatera ctDNA test performed outside of the trial through routine clinical care and who otherwise meet all eligibility criteria for Step 1-Registration are eligible for enrollment into Cohort B.

\*\*Patients in Cohort A (Arm 2) who develop a ctDNA +ve assay during serial monitoring may transition to the ctDNA+ve cohort (Cohort B) and undergo a second randomization.

NCT04089631

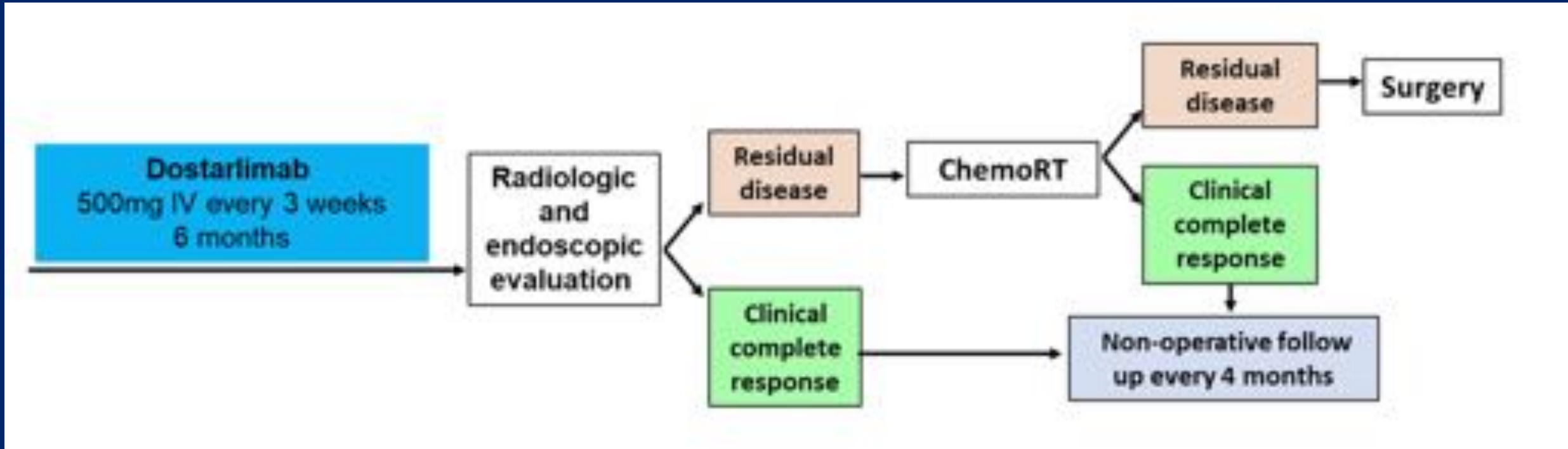
# SU2C ACT3 Trial: Early Treatment of Occult Metastatic Disease

Following Standard Adjuvant Therapy in Stage III CRC





# PD-1 Blockade in Locally Advanced MSI-H Rectal Cancer



**Patient population:** Stage II and III mismatch repair deficient rectal cancer

**Target Enrollment:** 30 subjects

**Study Design:** Simon's two stage minimax design

# Demographic and disease characteristics of the patients at baseline

	Value (%)
Sex	
Male	6 (33)
Female	12 (67)
Age, median (range)	54 (26-78)
Race/Ethnicity	
White non-Hispanic	11 (61)
Hispanic	1 (6)
Black or African American	3 (17)
Asian-Far East/Indian Subcontinent	3 (17)
Tumor Staging	
T1/2	4 (22)
T3, T4	14 (78)
Nodal Staging	
Node-positive	17 (94)
Node-negative	1 (6)
Germline Mutation Status n=17	
MSH2, MLH1, MSH6, or PMS2	10 (59)
Negative	7 (41)
BRAF V600E wild type	18 (100)
Tumor Mutational Burden (mut/Mb), mean (range)	67 (36 -106)

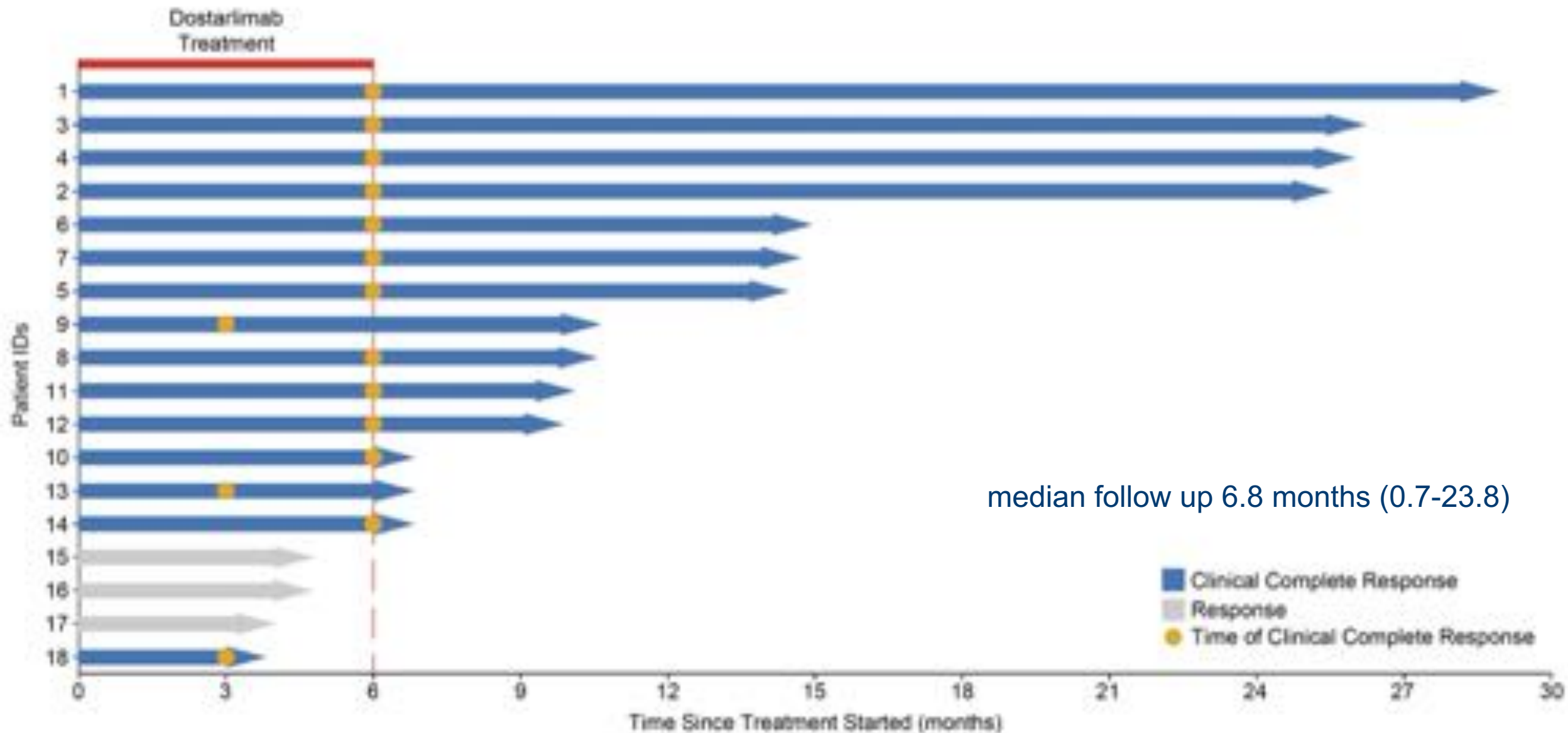


# Individual responses to PD-1 blockade with dostarlimab

Patients who completed 6-months of dostarlimab

ID	Age	Stage T	Stage N	FU (months)	Digital rectal exam response	Endoscopic best response	Rectal MRI best response	Overall response <b>100%</b>
1	38	T4	N+	23.8	CR	CR	CR	cCR
2	30	T3	N+	20.5	CR	CR	CR	cCR
3	61	T1/2	N+	20.6	CR	CR	CR	cCR
4	28	T4	N+	20.5	CR	CR	CR	cCR
5	53	T1/2	N+	9.1	CR	CR	CR	cCR
6	77	T1/2	N+	11.0	CR	CR	CR	cCR
7	77	T1/2	N+	8.7	CR	CR	CR	cCR
8	55	T3	N+	5.0	CR	CR	CR	cCR
9	68	T3	N+	4.9	CR	CR	CR	cCR
10	78	T3	N-	1.7	CR	CR	CR	cCR
11	55	T3	N+	4.7	CR	CR	CR	cCR
12	27	T3	N+	4.4	CR	CR	CR	cCR
13	26	T3	N+	0.8	CR	CR	CR	cCR
14	43	T3	N+	0.7	CR	CR	CR	cCR

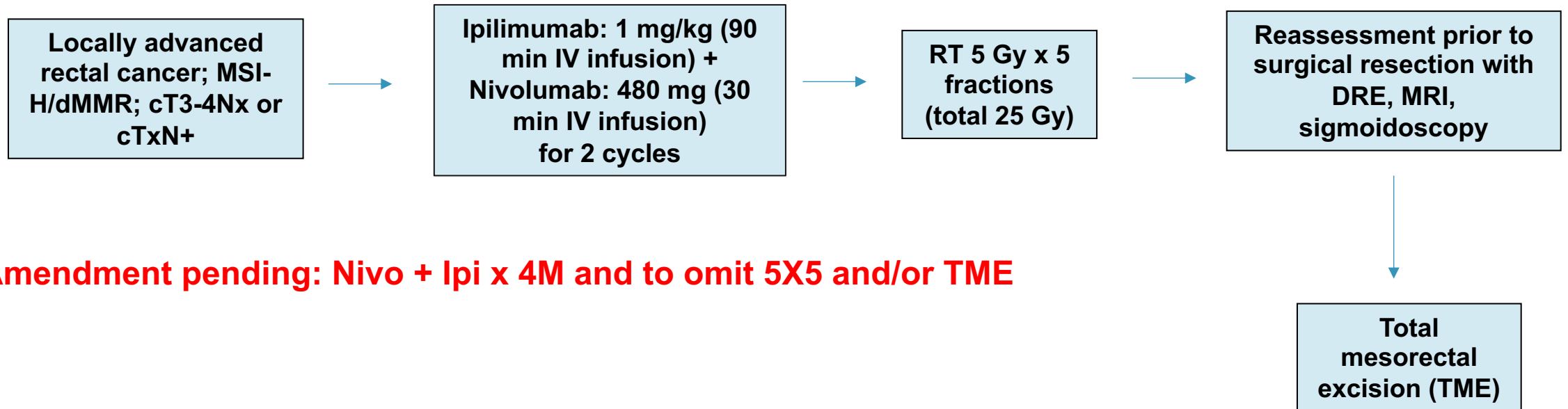
# Duration of response



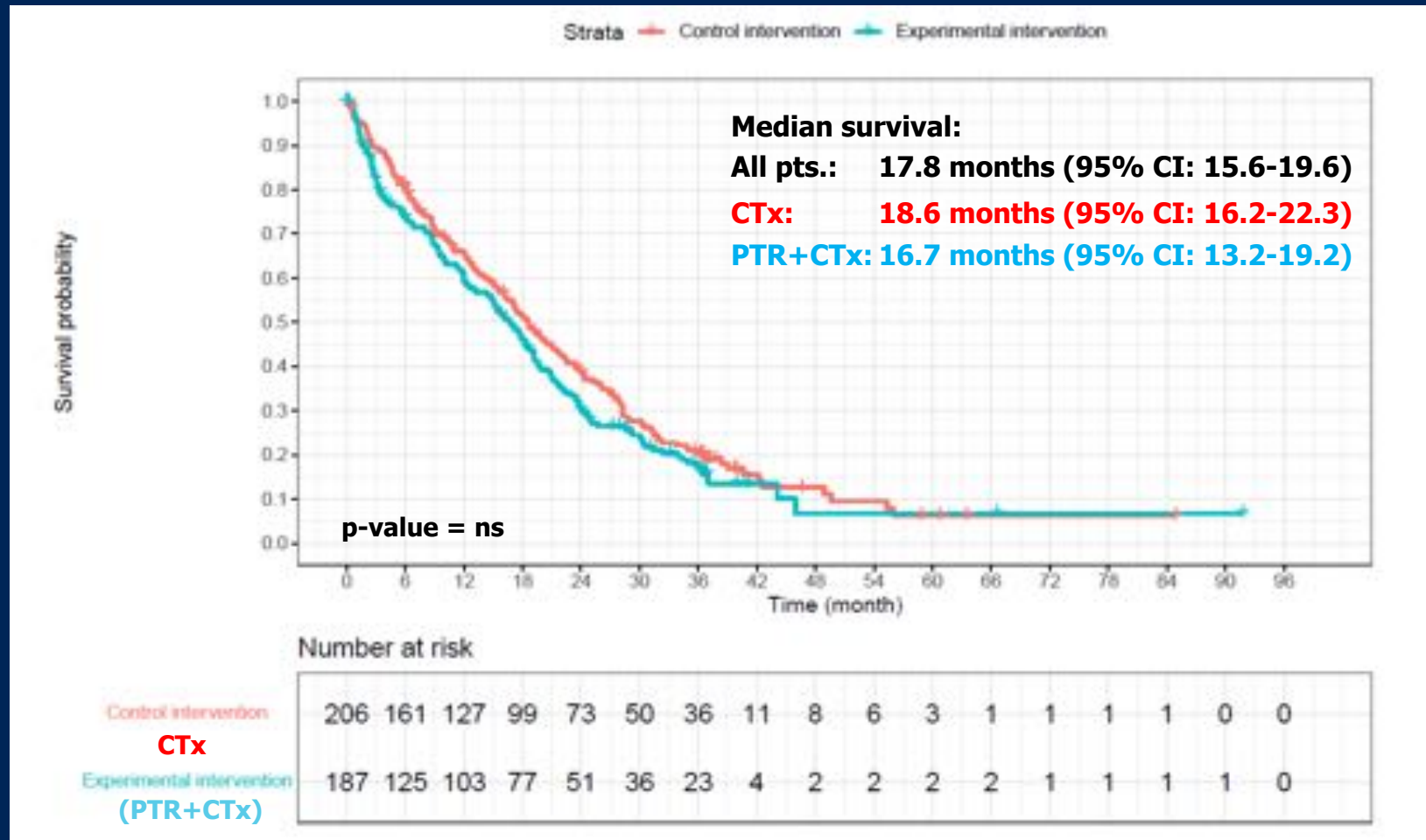


# EA2201: Phase II Study of Neoadjuvant Nivolumab plus Ipilimumab +/- Short Course Radiation in MSI-H Rectal Tumors

- Rectal adenocarcinoma
- T3-4Nx or TxN+ disease based on imaging
- MSI-H/dMMR based on IHC or PCR
- Integral biomarker
- ECOG PS 0-2



# Primary Endpoint: Overall Survival (ITT)



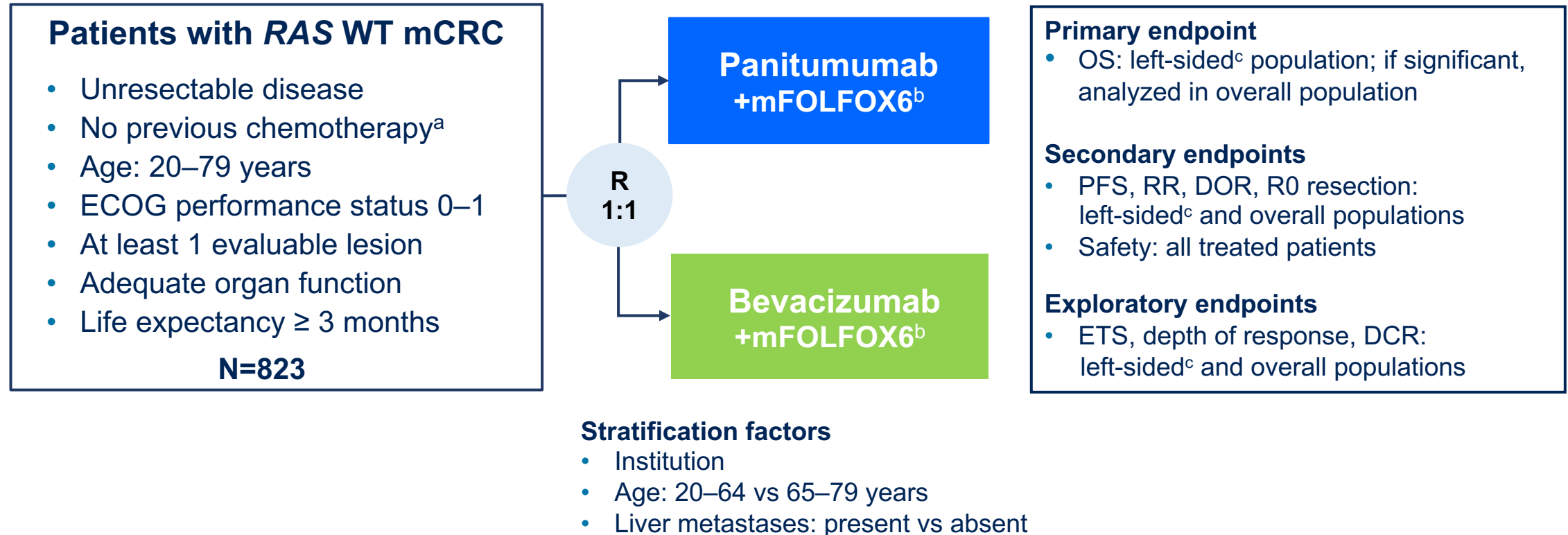
# Panitumumab plus mFOLFOX6 versus Bevacizumab plus mFOLFOX6 as first-line treatment in patients with *RAS* wild-type metastatic colorectal cancer: results from the phase 3 PARADIGM trial

**Takayuki Yoshino**<sup>1</sup>, Jun Watanabe<sup>2</sup>, Kohei Shitara<sup>1</sup>, Kentaro Yamazaki<sup>3</sup>, Hisatsugu Ohori<sup>4</sup>, Manabu Shiozawa<sup>5</sup>, Hirofumi Yasui<sup>4</sup>, Eiji Oki<sup>6</sup>, Takeo Sato<sup>7</sup>, Takeshi Naitoh<sup>8</sup>, Yoshito Komatsu<sup>9</sup>, Takeshi Kato<sup>10</sup>, Masamitsu Hihara<sup>11</sup>, Junpei Soeda<sup>11</sup>, Kouji Yamamoto<sup>12</sup>, Kiwamu Akagi<sup>13</sup>, Atsushi Ochiai<sup>14</sup>, Hiroyuki Uetake<sup>15</sup>, Katsuya Tsuchihara<sup>16</sup>, Kei Muro<sup>17</sup>

<sup>1</sup>Department of Gastroenterology and Gastrointestinal Oncology, National Cancer Center Hospital East, Kashiwa, Japan; <sup>2</sup>Gastroenterological Center, Yokohama City University Medical Center, Yokohama, Japan; <sup>3</sup>Division of Gastrointestinal Oncology, Shizuoka Cancer Center, Shizuoka, Japan; <sup>4</sup>Division of Medical Oncology, Japanese Red Cross Ishinomaki Hospital, Miyagi, Japan; <sup>5</sup>Division of Gastrointestinal Surgery, Kanagawa Cancer Center, Kanagawa, Japan; <sup>6</sup>Department of Surgery and Science, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; <sup>7</sup>Research and Development Center for Medical Education, Department of Clinical Skills Education, Kitasato University School of Medicine, Sagamihara, Japan; <sup>8</sup>Department of Lower Gastrointestinal Surgery, Kitasato University School of Medicine, Sagamihara, Japan; <sup>9</sup>Division of Cancer Chemotherapy, Hokkaido University Hospital Cancer Center, Sapporo, Japan; <sup>10</sup>Department of Surgery, National Hospital Organization Osaka National Hospital, Osaka, Japan; <sup>11</sup>Japan Medical Affairs, Japan Oncology Business Unit, Takeda Pharmaceutical Company Ltd., Tokyo, Japan; <sup>12</sup>Department of Biostatistics, Yokohama City University School of Medicine, Yokohama, Japan; <sup>13</sup>Division of Molecular Diagnosis and Cancer Prevention, Saitama Cancer Center, Saitama, Japan; <sup>14</sup>Pathology Division, Exploratory Oncology Research & Clinical Trial Center, National Cancer Center, Chiba, Japan; <sup>15</sup>National Hospital Organization, Disaster Medical Center, Tokyo, Japan; <sup>16</sup>Division of Translational Informatics, Exploratory Oncology Research & Clinical Trial Center, National Cancer Center, Chiba, Japan; <sup>17</sup>Department of Clinical Oncology, Aichi Cancer Center Hospital, Nagoya, Japan

# PARADIGM Trial Design

Phase 3, randomized, open-label, multicenter study (NCT02394795)



DCR, disease control rate; DOR, duration of response; ECOG, Eastern Cooperative Oncology Group; ETS, early tumor shrinkage; mCRC, metastatic colorectal cancer; OS, overall survival; PFS, progression free survival; RR, response rate; R0, curative resection; WT, wild type.

<sup>a</sup>Adjuvant fluoropyrimidine monotherapy allowed if completed > 6 months before enrollment. <sup>b</sup>Until disease progression, unacceptable toxicity, withdrawal of consent or investigator's judgement or curative intent resection.

<sup>c</sup>Primary tumor in descending colon, sigmoid colon, rectosigmoid, and rectum.

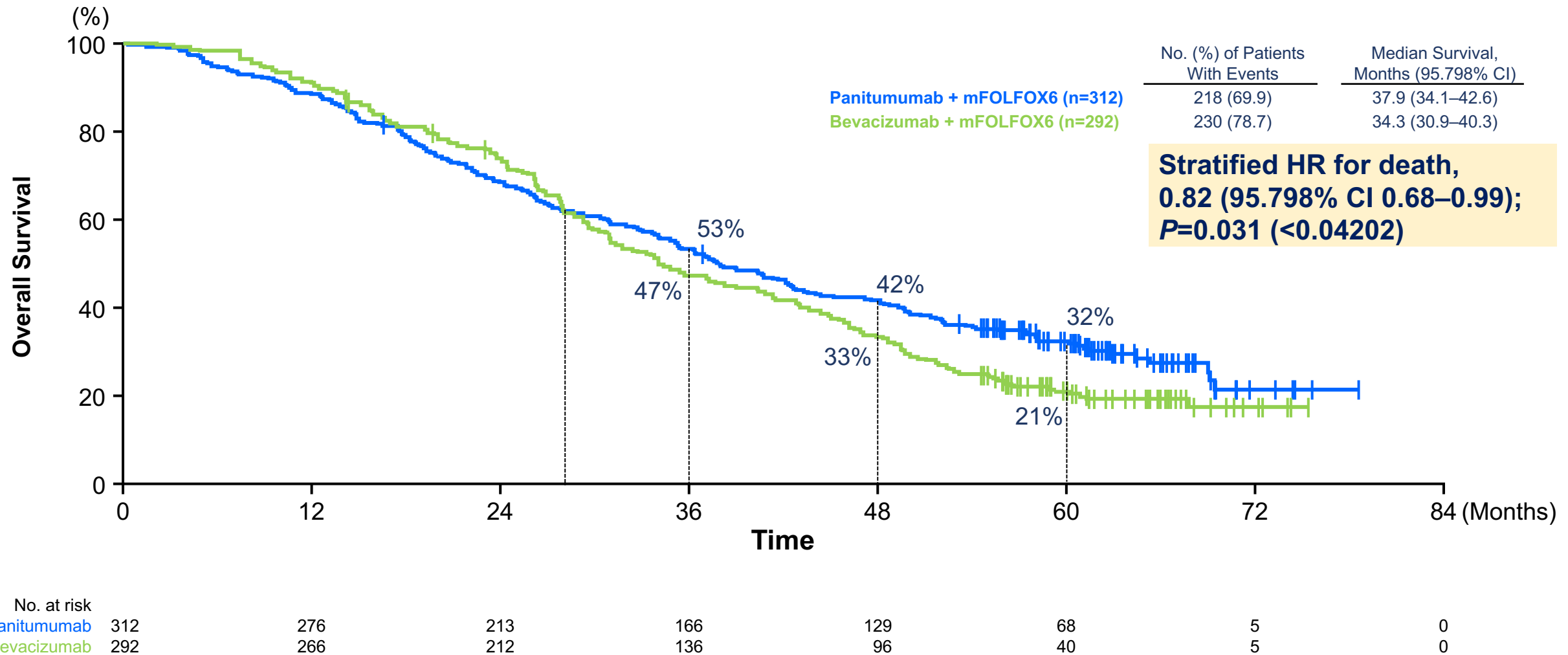


# Baseline Patient Characteristics

Characteristic	Left-sided Population		Overall Population	
	Panitumumab + mFOLFOX6 (n=312)	Bevacizumab + mFOLFOX6 (n=292)	Panitumumab + mFOLFOX6 (n=400)	Bevacizumab + mFOLFOX6 (n=402)
<b>Age category, n (%)</b>				
20–64 years	138 (44.2)	127 (43.5)	164 (41.0)	168 (41.8)
65–79 years	174 (55.8)	165 (56.5)	236 (59.0)	234 (58.2)
<b>Sex, female, n (%)</b>	104 (33.3)	91 (31.2)	148 (37.0)	134 (33.3)
<b>ECOG performance status, n (%)</b>				
0	261 (83.7)	231 (79.1)	328 (82.0)	319 (79.4)
1	51 (16.3)	61 (20.9)	71 (17.8)	83 (20.6)
<b>Primary tumor location, n (%)<sup>a</sup></b>				
Left-sided	312 (100.0)	292 (100.0)	312 (78.0)	292 (72.6)
Right-sided	0	0	84 (21.0)	103 (25.6)
<b>Number of metastatic organs, n (%)</b>				
1	155 (49.7)	147 (50.3)	196 (49.0)	194 (48.3)
≥2	157 (50.3)	145 (49.7)	204 (51.0)	208 (51.7)
<b>Metastatic site, n (%)</b>				
Liver	225 (72.1)	206 (70.5)	275 (68.8)	278 (69.2)
Liver as only site of metastasis	90 (28.8)	89 (30.5)	105 (26.3)	113 (28.1)
<b>Prior treatment, n (%)</b>				
Primary tumor resection	185 (59.3)	193 (66.1)	239 (59.8)	272 (67.7)
Radiotherapy	2 (0.6)	2 (0.7)	2 (0.5)	3 (0.7)
Adjuvant chemotherapy <sup>b</sup>	17 (5.4)	16 (5.5)	22 (5.5)	20 (5.0)

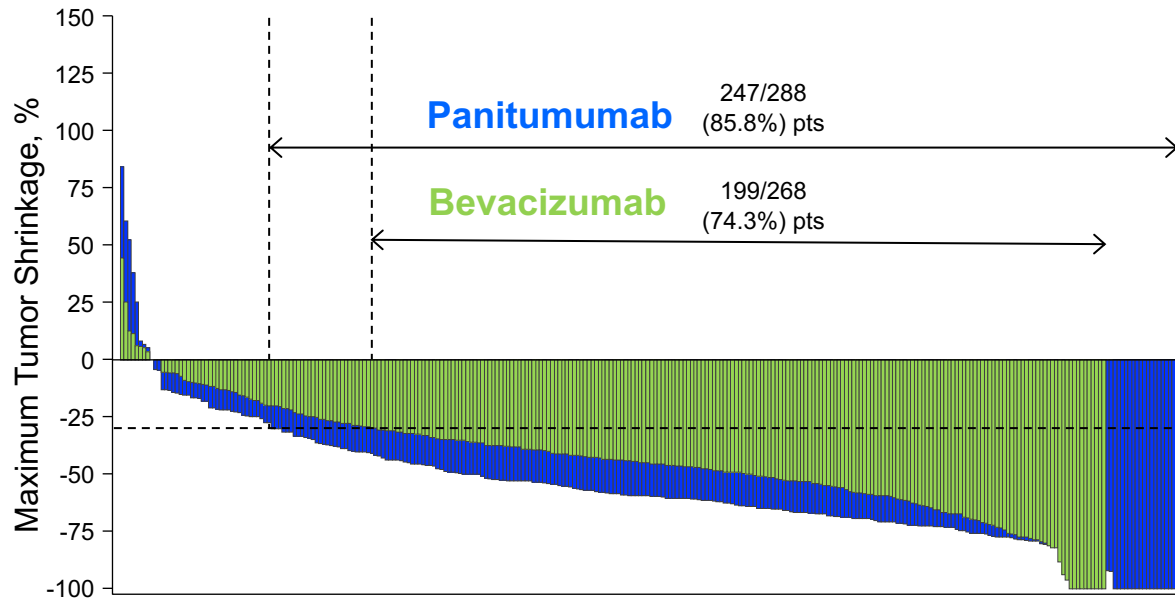
<sup>a</sup> 4 patients receiving panitumumab and 7 patients receiving bevacizumab had multiple primary lesions in both the left-sided and right-sided. <sup>b</sup> Adjuvant fluoropyrimidine monotherapy allowed if completed > 6 months before enrollment.

# Primary Endpoint-1; Overall Survival in Left-sided Population



# Other Efficacy Outcome: Depth of Response and RR

## Left-Sided Population



Parameter	Left-sided Population	
	Panitumumab + mFOLFOX6 (n=308)	Bevacizumab + mFOLFOX6 (n=287)
Response rate, % (95% CI)	80.2 (75.3–84.5)	68.6 (62.9–74.0)
Difference, % (95% CI)	11.2 (4.4–17.9)	
DCR, % (95% CI)	97.4 (94.9–98.9)	96.5 (93.7–98.3)
Median DOR, <sup>a</sup> months (95% CI)	13.1 (11.1–14.8)	11.2 (9.6–13.1)
R0 rate, <sup>b</sup> % (95% CI)	18.3 (14.1–23.0)	11.6 (8.2–15.9)

	Left-sided Population	
	Panitumumab + mFOLFOX6 (n=288)	Bevacizumab + mFOLFOX6 (n=268)
Median, %	-59.4	-43.6

Depth of response was assessed in patients with measurable lesions at baseline.

# 2022 ASCO Annual Meeting

Chicago, 6th June 2022

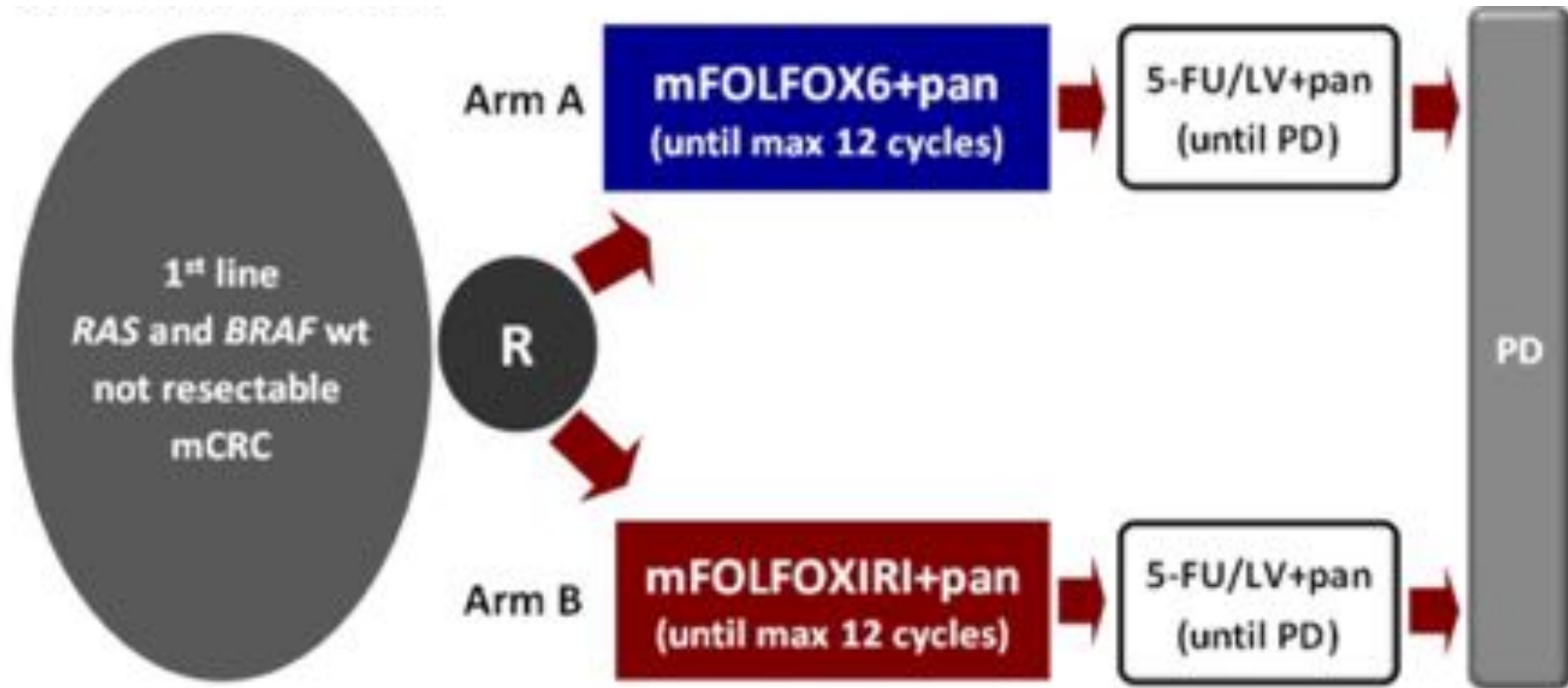
**Modified FOLFOXIRI plus panitumumab (mFOLFOXIRI/PAN) versus mFOLFOX6/PAN  
as initial treatment of patients with unresectable  
*RAS* and *BRAF* wild-type metastatic colorectal cancer (mCRC):  
Results of the phase III randomized TRIPLETE study by GONO.**

Cremolini C, Rossini D, Lonardi S, Antoniotti C, Pietrantonio F, Marmorino F, Antonuzzo L,  
Boccaccino A, Randon G, Giommoni E, Pozzo C, Moretto R, De Grandis MC, Viola MG,  
Passardi A, Buonadonna A, Formica V, Aprile G, Boni L, Masi G  
*on behalf of the GONO Investigators*





# TRIPLETE trial



## Stratification factors:

- ECOG Performance Status (0-1 vs 2)
- Primary tumor location (right vs left)
- Metastatic spread (liver-only vs not liver-only)

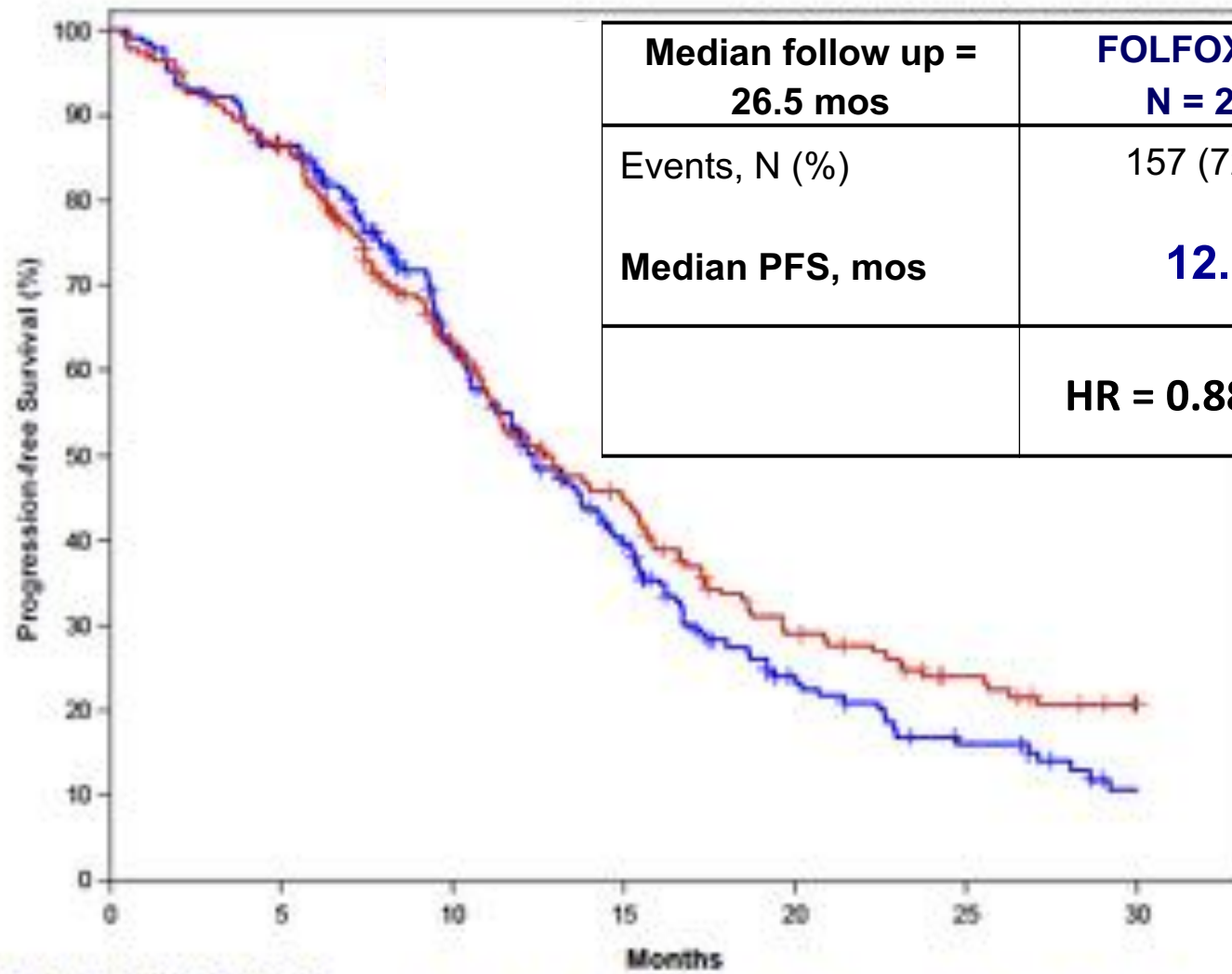
57 participating centers  
From September 2017 to September 2021



# Response and Resection Rate

	<b>FOLFOX/Pan N = 213</b>	<b>mFOLFOXIRI/Pan N = 218</b>	<b>OR [95%CI], p</b>
<b>Complete Response</b>	7%	7%	
<b>Partial Response</b>	69%	66%	
<b>Response Rate</b>	<b>76%</b>	<b>73%</b>	<b>0.87 [0.56-1.34], p=0.526</b>
<b>Stable disease</b>	17%	18%	
<b>Progressive Disease</b>	5%	5%	
<b>Not Assessed</b>	2%	4%	
<b>R0 Resection Rate</b>	<b>29%</b>	<b>25%</b>	<b>0.81 [0.53-1.23], p=0.317</b>

# Progression Free Survival



Median follow up = 26.5 mos	<b>FOLFOX/Pan</b> <b>N = 217</b>	<b>mFOLFOXIRI/Pan</b> <b>N = 218</b>
Events, N (%)	157 (72%)	148 (68%)
Median PFS, mos	<b>12.3</b>	<b>12.7</b>
	<b>HR = 0.88 [95% CI: 0.70-1.11] p=0.277</b>	

No. at Risk (No. Cumulative Censors)

Control Group	217 (0)	183 (5)	117 (24)	67 (34)	31 (45)	18 (48)	8 (53)
Experimental Group	218 (0)	181 (7)	114 (28)	73 (38)	43 (43)	30 (49)	20 (55)



# MSI-S Colorectal Cancer: BRAF MT



# Updated Overall Survival: ENCO/CETUX vs Control



# Phase I/II trial of encorafenib, cetuximab, and nivolumab in patients with microsatellite stable, *BRAF*<sup>V600E</sup> metastatic colorectal cancer

Abstract #351993

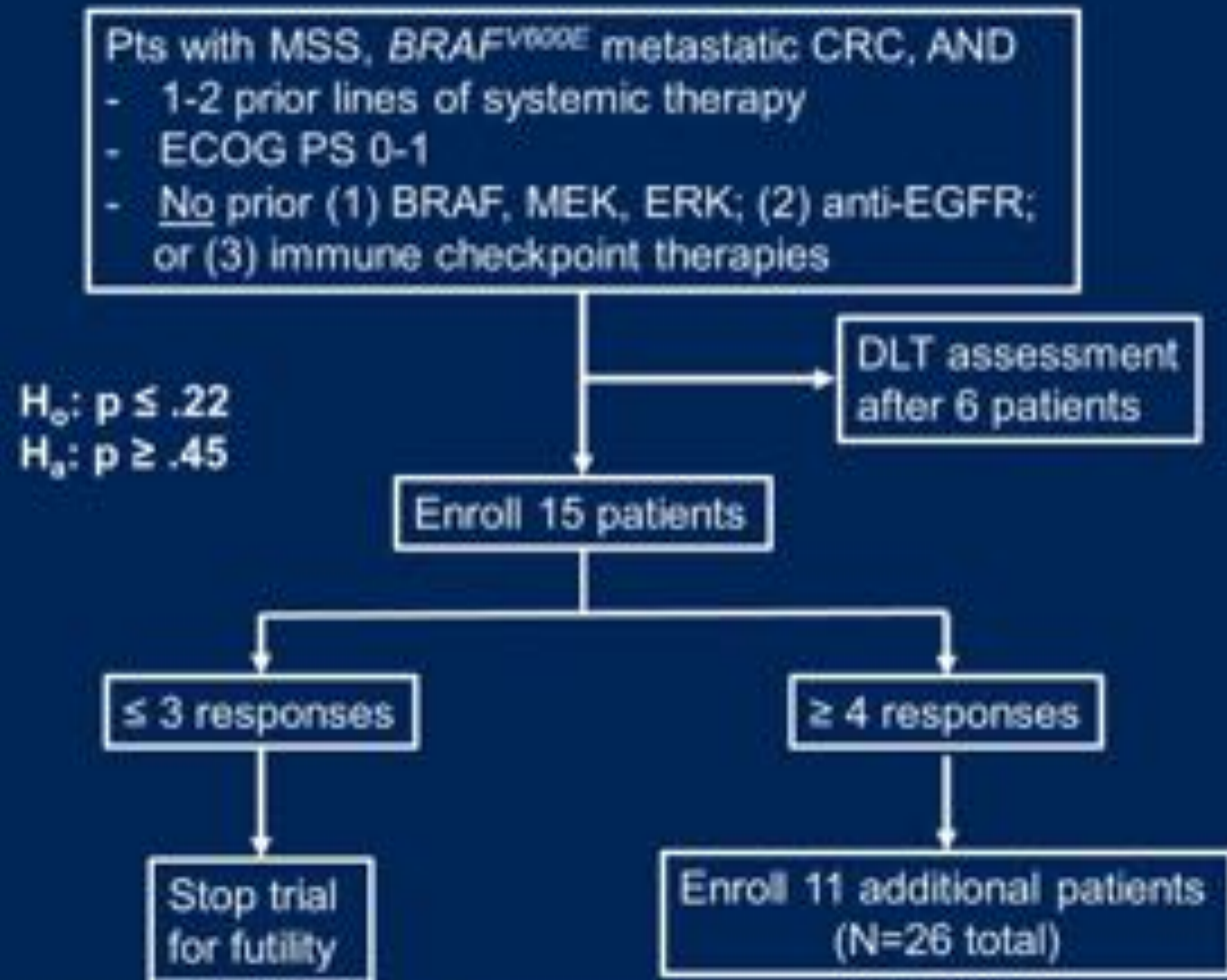
Van K. Morris<sup>1</sup>, Christine M. Parseghian<sup>1</sup>, Michelle Escano<sup>1</sup>, Benny Johnson<sup>1</sup>, Kanwal Pratap Singh Raghav<sup>1</sup>, Arvind Dasari<sup>1</sup>, Ryan Huey<sup>1</sup>, Michael J. Overman<sup>1</sup>, Jason Willis<sup>1</sup>, Michael S. Lee<sup>1</sup>, Robert A. Wolff<sup>1</sup>, Bryan K. Kee<sup>1</sup>, John Paul Y.C. Shen<sup>1</sup>, M. Pia Morelli<sup>1</sup>, Alda Tam<sup>2</sup>, Wai Chin Foo<sup>3</sup>, Lianchun Xiao<sup>4</sup>, Scott Kopetz<sup>1</sup>

Departments of <sup>1</sup>Gastrointestinal Medical Oncology, <sup>2</sup>Interventional Radiology, <sup>3</sup>Pathology, & <sup>4</sup>Biostatistics

University of Texas – MD Anderson Cancer Center, Houston TX



# Study Design



## Study Treatment:

Encorafenib 300 mg PO daily

Cetuximab 500 mg/m<sup>2</sup> IV every 14 days

Nivolumab 480 mg IV every 28 days

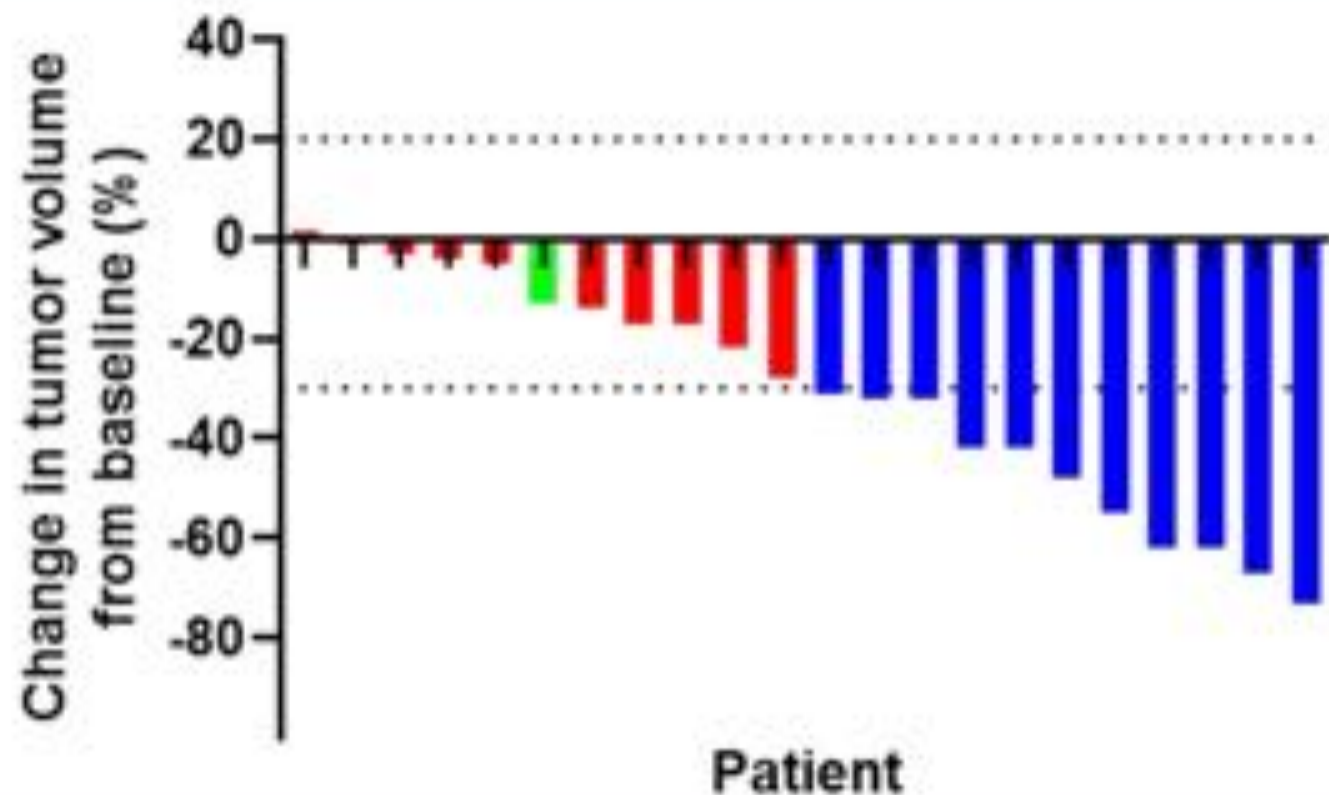
## Primary endpoints:

- Radiographic response (RECIST 1.1)
- Safety/tolerability (CTCAE v5)

## Secondary endpoints:

- Progression-free survival
- Overall survival
- Duration of response
- Disease control rate
- Time to response

# Overall response: encorafenib + cetuximab + nivolumab



**22 evaluable patients:**

**ORR 50% (95% CI, 28-72)**

**DCR 96% (95% CI, 77-100)**

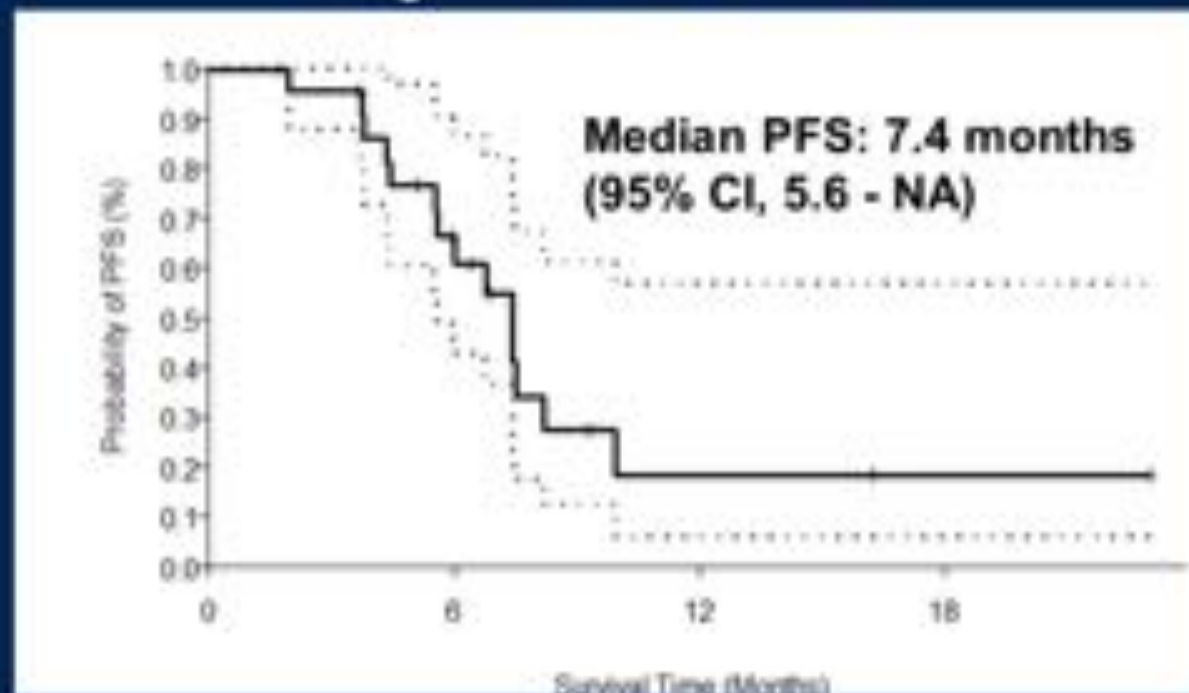
Encorafenib + cetuximab: ORR 20% (95% CI, 13-29)<sup>1</sup>

<sup>1</sup>Kopetz S et al. NEJM 2019

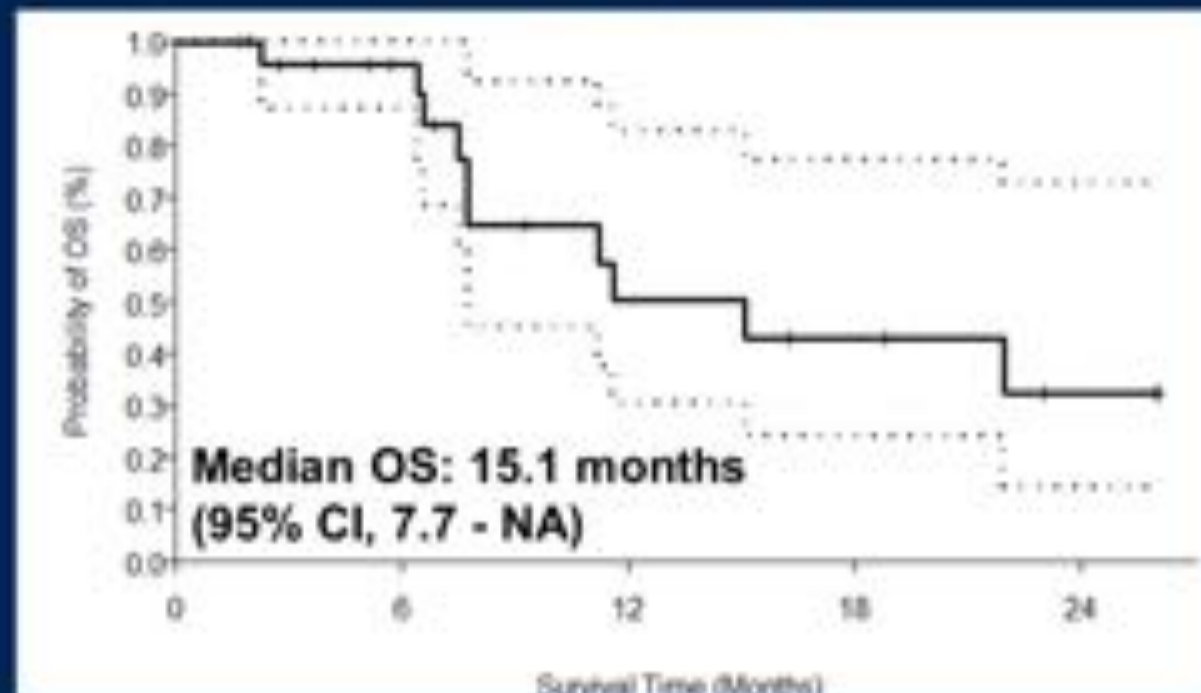


# Survival outcomes: encorafenib + cetuximab + nivolumab

Progression-free survival



Overall survival



Median follow-up time: 16.3 months (95% CI, 6.9 - NA)

Median duration of response: 7.7 months (95% CI, 3.8 - NA)

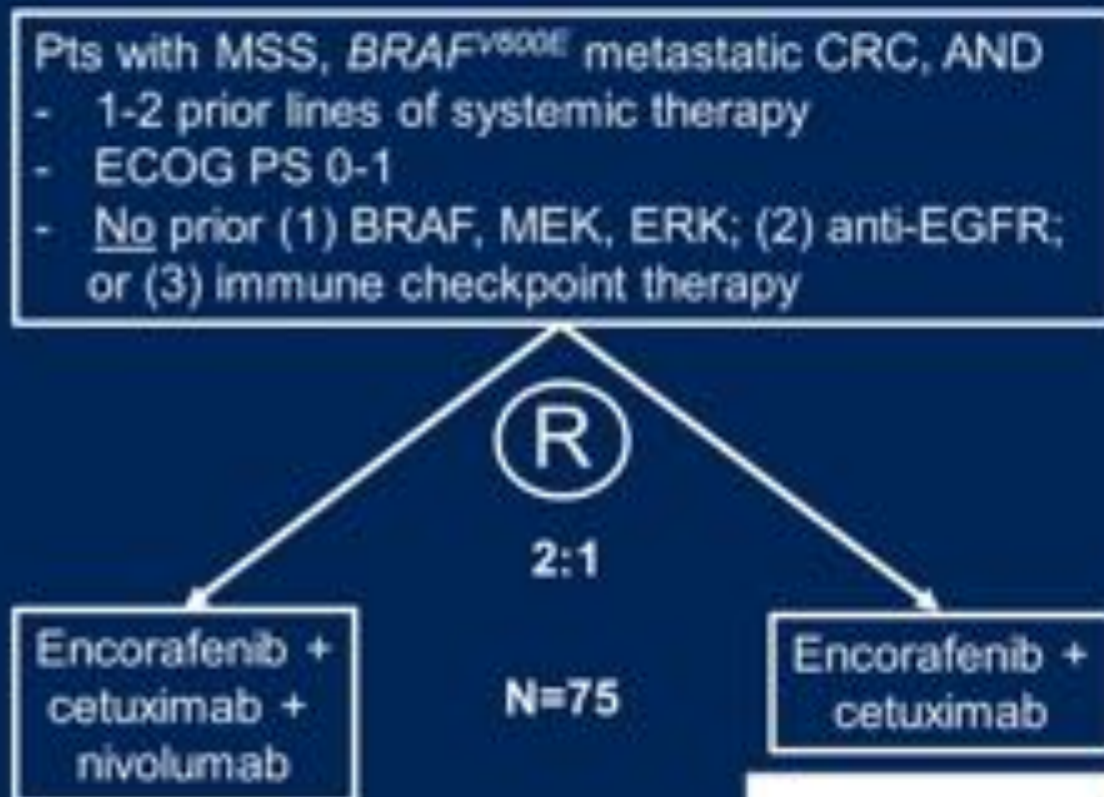
Encorafenib + cetuximab: median PFS 4.2 months (95% CI, 3.7-5.4), median OS 8.4 months (95% CI, 7.5-11.0) <sup>1</sup>

<sup>1</sup>Kopetz S et al. NEJM 2019

# Conclusions

- Encorafenib + cetuximab + nivolumab is safe and well tolerated for participants with MSS, *BRAF*<sup>V600E</sup> metastatic CRC.
- The predefined efficacy endpoint for encorafenib + cetuximab + nivolumab has been met for participants with MSS, *BRAF*<sup>V600E</sup> metastatic CRC: ORR is 50%, and median PFS is 7.4 months.
- These results compare favorably relative to encorafenib + cetuximab (without immunotherapy) as reported in the BEACON study.
- SWOG 2107 is a randomized phase II study that will activate across the United States in 2022 to evaluate encorafenib + cetuximab with or without nivolumab in this population.

## SWOG 2107



## The BREAKWATER study design

The BREAKWATER study involves a pre-screening period, a screening period, a randomized treatment period, and a monitoring period. Participants who qualify and choose to take part will attend study visits once every two or three weeks until their participation ends.

Participants can remain in the treatment period until side effects become intolerable, unacceptable toxicity, disease progression, or withdrawal of consent.



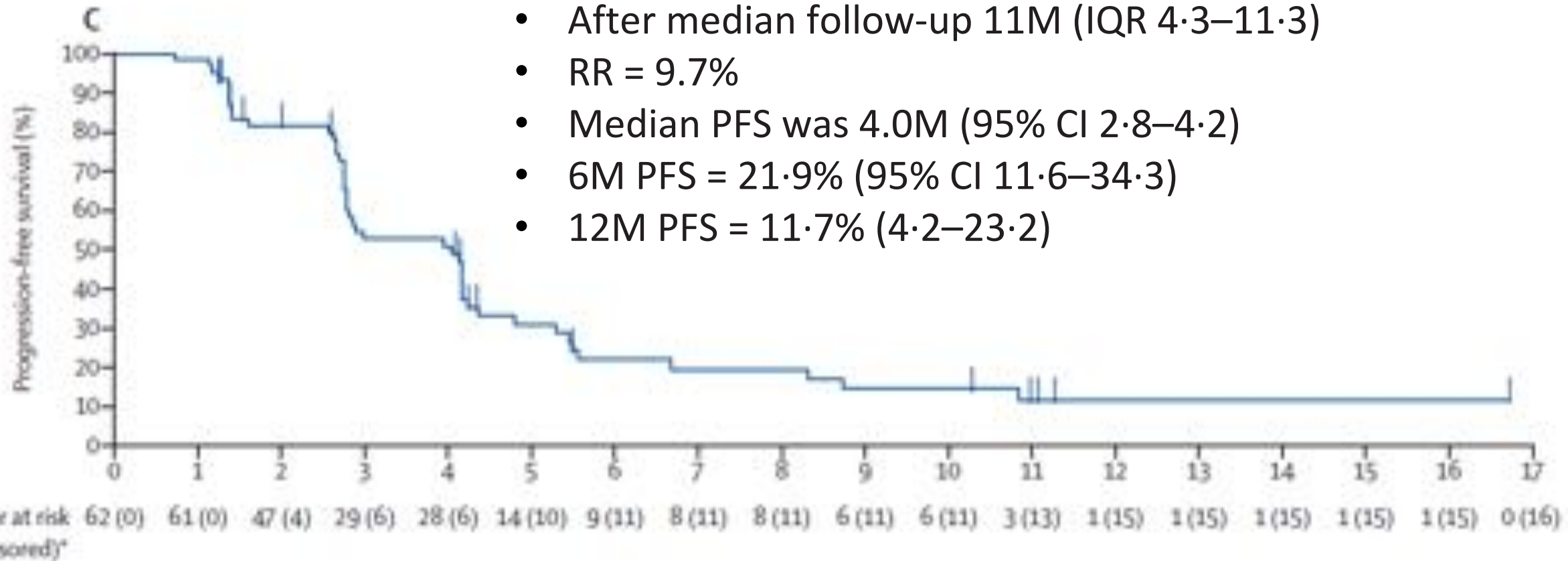
\*Whether mFOLFIRI or FOLFIRI is used in Arm B will depend on the results of a safety trial in study evaluating the safety, tolerability and pharmacokinetics of encorafenib and cetuximab in combination with these treatments. If neither regimen is selected, this study will proceed without Arm B.



# KRAS G12C Mutation Inhibitors



# Sot0rasib: KRAS G12C Previously Treated mCRC



# CodeBreakK 101 Subprotocol H Study Design

**Phase 1b, multicentre study\*:**

**Sotorasib + panitumumab in chemorefractory *KRAS* G12C-mutated mCRC**

**Screening/enrolment**

**Key eligibility criteria (Part 2 Cohort A)**

- *KRAS* G12C-mutated mCRC, identified through molecular testing
- *KRAS*<sup>G12C</sup> inhibitor-naïve
- ≥1 prior treatment for advanced disease<sup>†</sup>
- Progressed on or after fluoropyrimidine, oxaliplatin, irinotecan, and an anti-angiogenic agent

**Part 1: Cohort A  
dose exploration<sup>‡</sup>**

Sotorasib PO daily  
+  
Panitumumab 6 mg/kg  
IV Q2W

**Part 2: Cohort A dose expansion  
(N=40)**

Sotorasib: 960 mg PO daily  
+  
Panitumumab: 6 mg/kg IV Q2W  
  
Treatment until disease progression,  
withdrawal of consent, or end of study

**Primary endpoint: Safety/tolerability**

**Secondary endpoints: Anti-tumour efficacy (ORR, DCR, DOR, TTR, PFS per RECIST v1.1, and OS) and PK**

\*NCT04186883, EudraCT 2020-004721-23

<sup>†</sup>For patients with tumours known to be microsatellite instability high, prior checkpoint inhibitor therapy is required if clinically appropriate and locally available for that indication

<sup>‡</sup>Dose exploration is completed

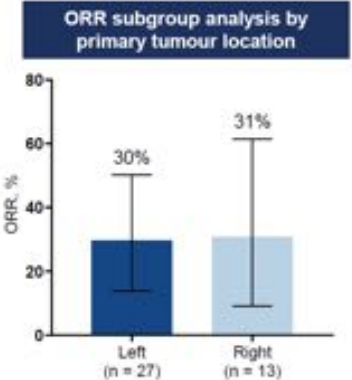
DCR, disease control rate; DOR, duration of response; IV, intravenous; KRAS, Kirsten rat sarcoma; mCRC, metastatic colorectal cancer; ORR, objective response rate; OS, overall survival; Q2W, every 2 weeks; PFS, progression-free survival; PK, pharmacokinetics; PO, orally; RECIST, Response Evaluation Criteria in Solid Tumors; TTR, time to response

# Codebreak 101: Sotorasib in combination with panitumumab in refractory *KRAS G12C*-mutated colorectal cancer:

## Efficacy

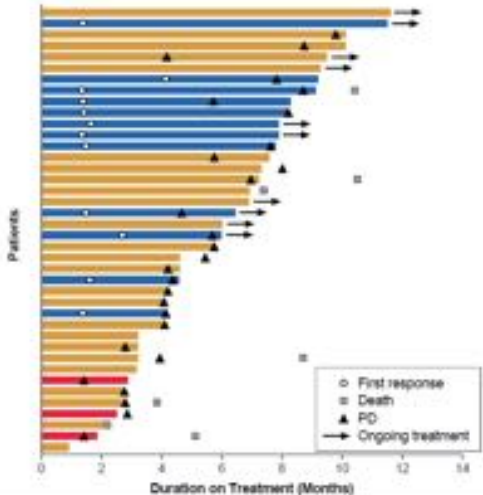
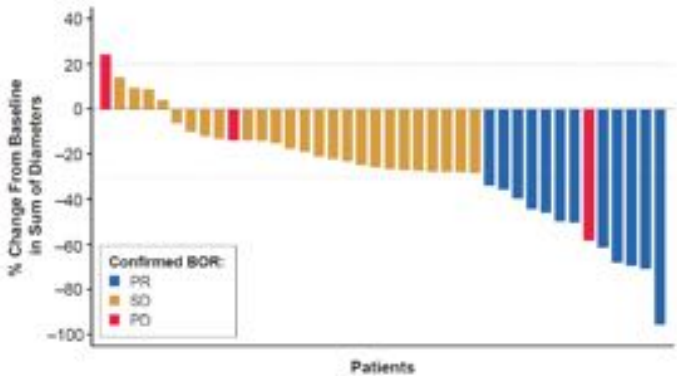
Response by investigator assessment	N = 40 n (%)
ORR confirmed (95% CI)	12 (30) (16.6, 46.5)
Complete response	0
Partial response	12 (30)
Stable disease*	25 (63)
Progressive disease	3 (8)
DCR (95% CI)	37 (93) (79.6, 98.4)

Data cutoff: June 24, 2022  
\*Minimum requirement for stable disease was 1 week.  
DCR, disease control rate; mCRC, metastatic colorectal cancer; ORR, objective response rate.



- 30% confirmed response rate for sotorasib + panitumumab in patients with chemorefractory mCRC, with disease control rate of 93%
- No obvious differences in response based on tumour location

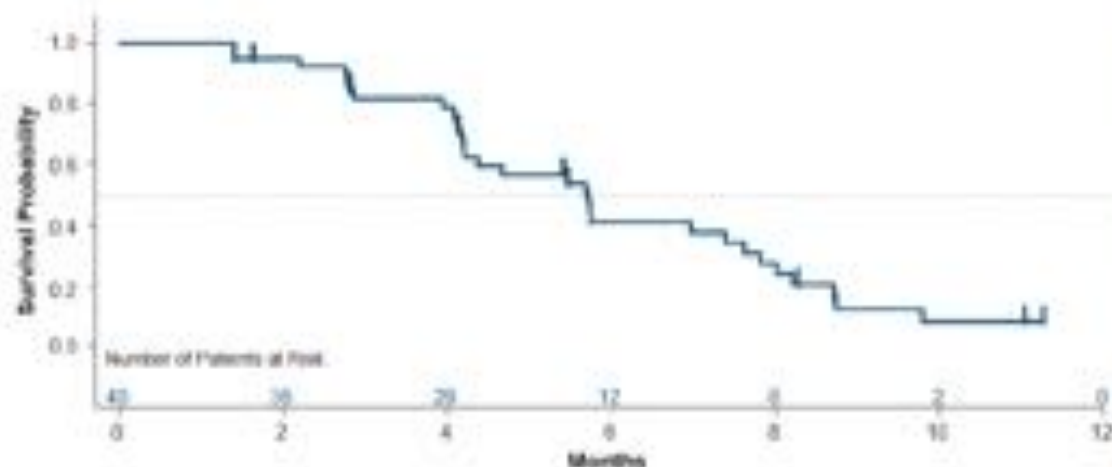
## Tumour Response



- Reduction in RECIST target lesions observed in 88% of patients
- Median (range) duration of treatment was 5.9 (0.5, 11.3) months, with 25% of patients remaining on treatment

Data cutoff: June 24, 2022  
BOR, best overall response; PD, progressive disease; PR, partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease.

# Progression-Free Survival (PFS)



## Kaplan-Meier estimate of PFS

**N = 40**

Median PFS, months  
(95% CI) 5.7 (4.2, 7.6)

Left primary tumour 5.8 (4.2, 7.8)

Right primary tumour 5.5 (3.9, 8.2)

PFS rate, % (95% CI)

At 3 months 81.7 (65.4, 90.9)

At 6 months 41.1 (24.7, 56.7)

At 9 months 12.3 (3.4, 27.2)

With median follow-up of 11.0 months, median PFS was 5.7 months

Data cutoff: June 24, 2022



# KRYSTAL-1 (849-001) Phase 1b/2 CRC Cohorts Study Design

## Key Eligibility Criteria

- CRC with a KRAS<sup>G12C</sup> mutation<sup>a</sup>
- Unresectable or metastatic disease
- Prior systemic treatment for metastatic disease
- No available treatment with curative intent or available standard of care

## Phase 1b CRC Combination

Adagrasib 600 mg BID<sup>b</sup>  
+ cetuximab<sup>c</sup>  
(n=32)

## Phase 2 CRC Monotherapy

Adagrasib 600 mg BID<sup>b</sup>  
(n=44)

## Study Objectives

### Phase 1b

- Primary endpoints: safety, RP2D, PK
- Secondary endpoints: ORR (RECIST 1.1), DOR, PFS, OS

### Phase 2

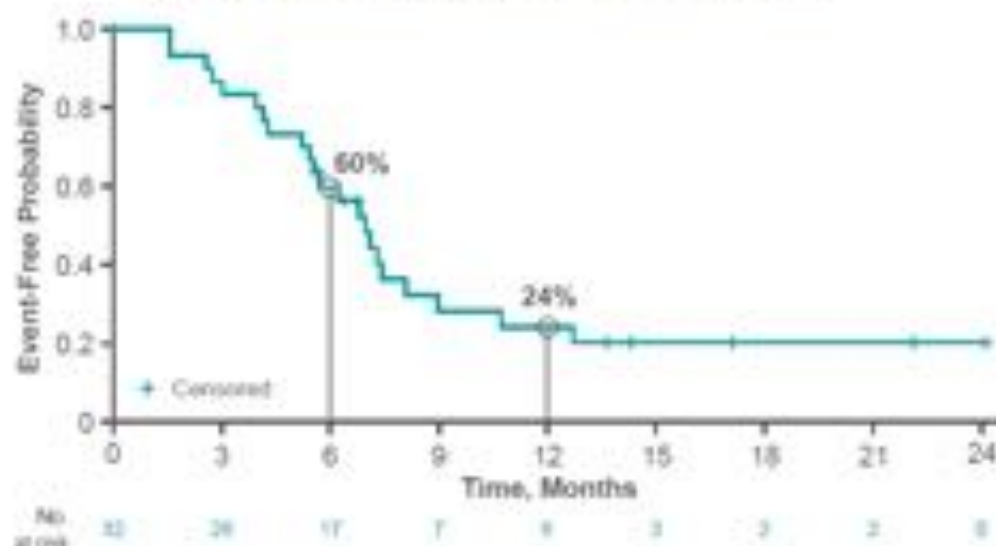
- Primary endpoint: ORR (RECIST 1.1)<sup>d</sup>
- Secondary endpoints: safety, DOR, PFS, OS

- Previously reported data demonstrated clinical activity of adagrasib monotherapy and adagrasib + cetuximab in patients with previously treated KRAS<sup>G12C</sup>-mutated CRC<sup>10\*</sup>
- Here we report updated data for adagrasib 600 mg BID as monotherapy (Phase 2; median follow-up: 20.1 months) and in combination with cetuximab (Phase 1b; median follow-up: 17.5 months) in patients with previously treated KRAS<sup>G12C</sup>-mutated CRC

<sup>a</sup>KRAS<sup>G12C</sup> mutation detected in tumor tissue and/or ctDNA per protocol. <sup>b</sup>Capsule, tablet. <sup>c</sup>Cetuximab dosing: 400 mg/m<sup>2</sup> followed by 250 mg/m<sup>2</sup> QW, or 500 mg/m<sup>2</sup> Q2W. <sup>d</sup>Response was analysed in the clinically evaluable population with local radiology review. \*Previous data were reported for 48 patients (n=2 in Phase 1b and n=44 in Phase 2) receiving adagrasib monotherapy (median follow-up: 8.9 months) and 32 patients receiving adagrasib + cetuximab (median follow-up: 7 months)<sup>10</sup>.  
ClinicalTrials.gov: NCT03181226

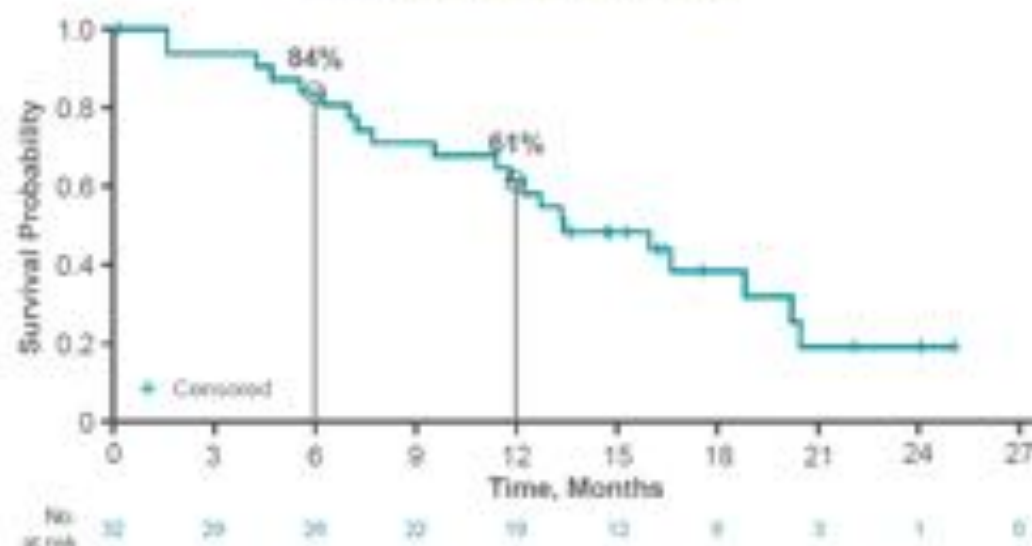
## Adagrasib + Cetuximab in Previously Treated Patients with KRAS<sup>G12C</sup>-Mutated CRC: Progression-Free Survival and Overall Survival

### Progression-Free Survival



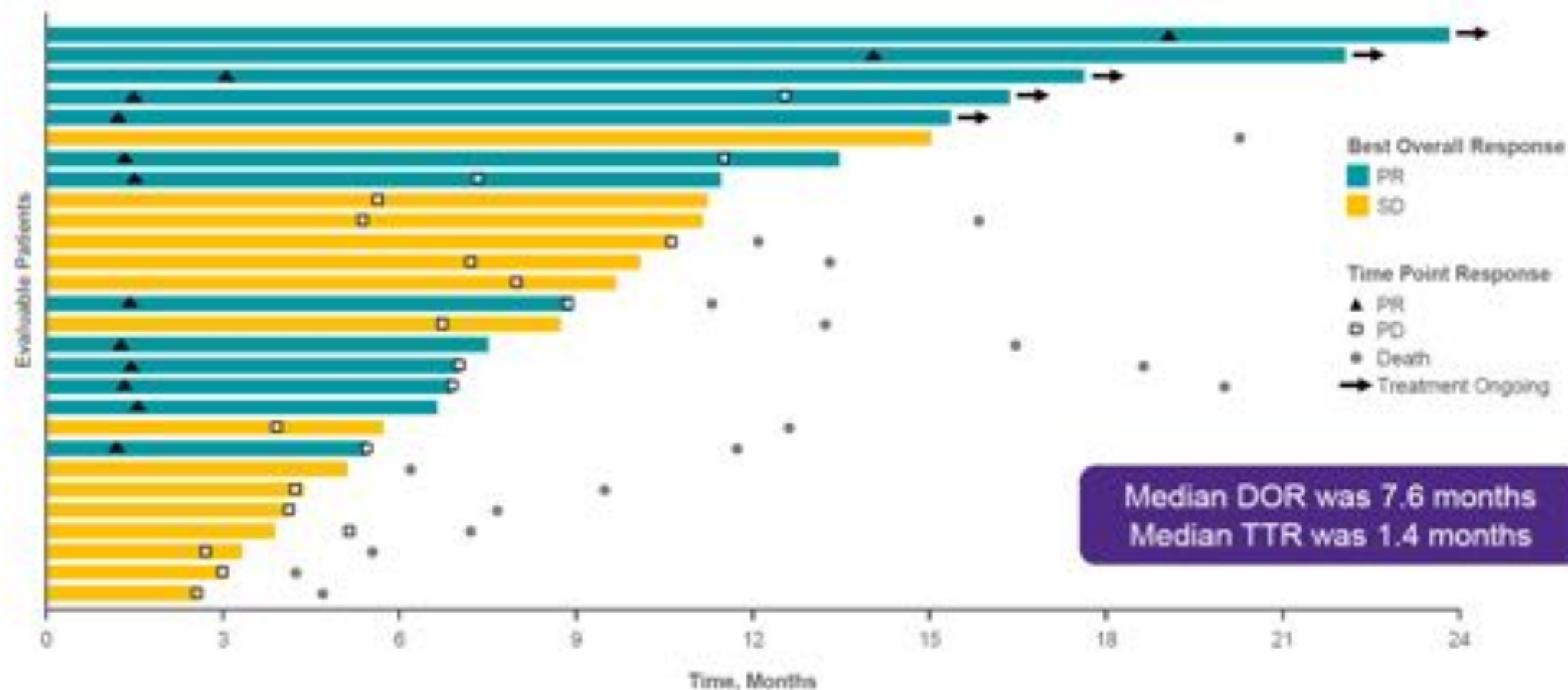
Median PFS was 6.9 months (95% CI, 5.4–8.1)

### Overall Survival



Median OS was 13.4 months (95% CI, 9.5–20.1)

## Adagrasib + Cetuximab in Previously Treated Patients with KRAS<sup>G12C</sup>-Mutated CRC: Duration of Treatment



Response outcomes per investigator assessment (n=26, four patients are not included due to no post-baseline assessment of target lesions)  
Data as of June 16, 2022 (median follow-up, 17.5 months)

# Ongoing Phase I and III Trials: KRAS G12C

## Phase 3: Sotorasib + Panitumumab

### Patients

- > 1 prior line of treatment for mCRC
- KRAS G12C MT
- ECOG PS 0-2
- N=193
- \*Not yet recruiting  
NCT05198934

Arms A: Sotorasib 960 mg + Panitumumab or  
Arm B: Sotorasib (240 mg) + PMab

1:1 Randomization

Physician's Choice: Regorafenib or TAS-102

Primary Endpoint: PFS

- Metastatic CRC
- KRAS G12C in tumor
  - Local test acceptable for enrollment; central confirmation req'd w/in 30d
- PD on 1L fluoropyrimidine + oxaliplatin or irinotecan
- No prior anti-EGFR or direct KRAS G12Ci

1:1  
N~420

Adagrasib 600 mg BID +  
Cetuximab 500 mg/m<sup>2</sup> Q2W

FOLFIRI or mFOLFOX6<sup>§</sup>

<sup>§</sup>Anti-VEGF/VEGFR allowed per Investigator discretion

Phase 1a

Dose escalation of LY3537982<sup>†</sup>

Primary endpoints:  
Dose-limiting toxicities (DLTs),  
Adverse Events (AEs), and Serious Adverse Events (SAEs)

Phase 1b

Dose expansion:

LY3537982<sup>†</sup> monotherapy

LY3537982<sup>†</sup> + abemaciclib<sup>‡</sup>

LY3537982<sup>†</sup> + erlotinib<sup>§</sup>

LY3537982<sup>†</sup> + pembrolizumab<sup>||</sup>

LY3537982<sup>†</sup> + temuterkib<sup>¶</sup>

LY3537982<sup>†</sup> + LY3295668 (AurA inhibitor)<sup>#</sup>

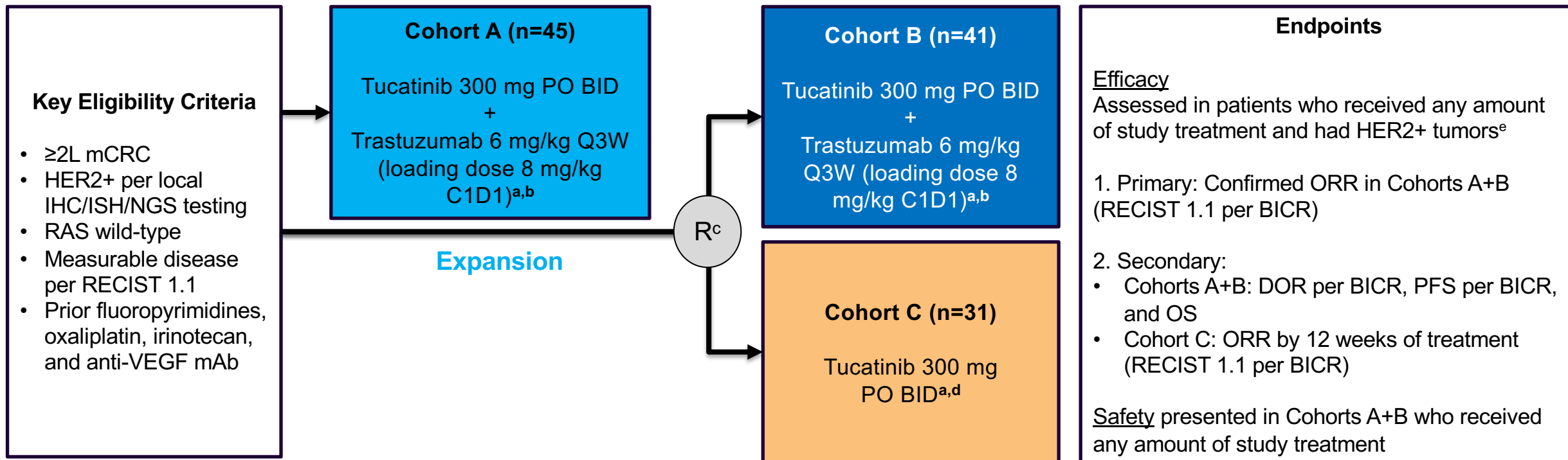
LY3537982<sup>†</sup> + cetuximab<sup>\*\*</sup>

LY3537982<sup>†</sup> + TNO155<sup>††</sup>

Primary endpoints:  
DLTs, AEs, and SAEs



# MOUNTAINEER: Global, Open-Label, Phase 2 Trial



MOUNTAINEER began as a US Investigator-Sponsored Trial and initially consisted of a single cohort (Cohort A) and was expanded globally to include patients randomised to receive tucatinib + trastuzumab (Cohort B) or tucatinib monotherapy (Cohort C)

Data cut-off for current analysis, March 28, 2022

<sup>a</sup> Each treatment cycle is 21 days; <sup>b</sup> Patients remained on therapy until evidence of radiographic or clinical progression, unacceptable toxicity, withdrawal of consent, or study closure; <sup>c</sup> Stratification: Left sided tumor primary vs other; <sup>d</sup> Patients were allowed to cross over and receive tucatinib and trastuzumab if they experienced radiographic progression at any time point or if they had not achieved a PR or CR by week 12; <sup>e</sup> Patients had HER2+ tumors as defined by one or more protocol required local tests: IHC 3+ (n=46), amplification by ISH (n=36), or amplification by NGS (n=69)

2L+, second line and later; BICR, blinded independent central review; BID, twice a day; C1D1, cycle 1 day 1; CR, complete response; DOR, duration of response; HER2, human epidermal growth receptor 2; IHC, immunohistochemistry; ISH, in situ hybridization; mAb, monoclonal antibody; mCRC, metastatic colorectal cancer; NGS, next-generation sequencing; ORR, objective response rate; OS, overall survival; PFS, progression-free survival; PO, orally; Q3W, every 3 weeks; PR, partial response; R, randomisation; RAS, rat sarcoma virus; RECIST, Response Evaluation Criteria in Solid Tumors; US, United States; VEGF, vascular endothelial growth factor.

<https://clinicaltrials.gov/ct2/show/NCT03043313>

# Key Baseline Patient Characteristics

Characteristics, n (%)		Tucatinib + Trastuzumab Cohorts A+B n=84 <sup>a</sup>	Tucatinib Monotherapy Cohort C n=30 <sup>b</sup>
Median age, years (range)		55.0 (24, 77)	59.5 (29, 75)
Sex	Male	51 (60.7)	15 (50.0)
	Female	33 (39.3)	15 (50.0)
ECOG Performance Status	0	50 (59.5)	17 (56.7)
	1	31 (36.9)	13 (43.3)
	2	3 (3.6)	0
Primary tumor site	Left colon and rectum	71 (84.5)	27 (90.0)
	All other primaries	13 (15.5)	3 (10.0)
	Transverse colon	7 (8.3)	0
	Right colon	5 (6.0)	3 (10.0)
	Multiple/overlapping sites	1 (1.2)	0
Stage IV at initial diagnosis		50 (59.5)	19 (63.3)
Patients with liver metastases at study entry		54 (64.3)	15 (50.0)
Patients with lung metastases at study entry		59 (70.2)	20 (66.7)

<sup>a</sup> Two patients did not have HER2+ disease as specified per protocol and were excluded; <sup>b</sup> One patient discontinued before receiving treatment

ECOG, Eastern Cooperative Oncology Group.

# Tucatinib + Trastuzumab: Efficacy Outcomes

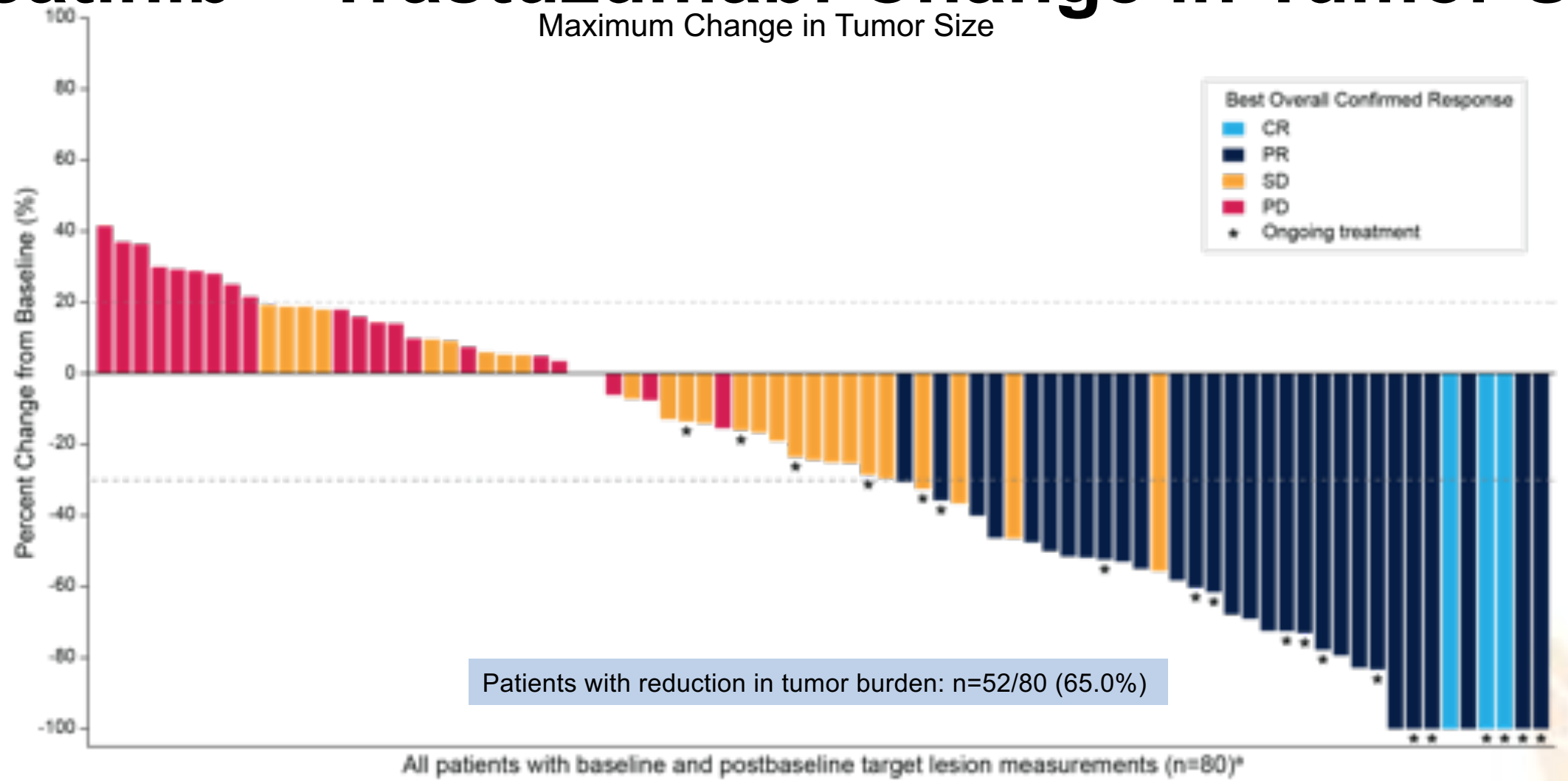
	Tucatinib + Trastuzumab Cohorts A+B n=84
<b>Responses</b>	
Best overall response per BICR <sup>a</sup> , n (%)	
CR	3 (3.6)
PR	29 (34.5)
SD <sup>b</sup>	28 (33.3)
PD	22 (26.2)
Not available <sup>c</sup>	2 (2.4)
<b>cORR per BICR, % (95% CI)<sup>d</sup></b>	<b>38.1 (27.7, 49.3)</b>
cORR per Investigator, % (95% CI) <sup>d</sup>	42.9 (32.1, 54.1)
Median time to objective response per BICR <sup>e</sup> , months (range)	2.1 (1.2, 9.8)
DCR <sup>f</sup> per BICR, n (%)	60 (71.4)
<b>Median DOR per BICR, months (95% CI)</b>	<b>12.4 (8.5, 20.5)</b>

a Confirmed best overall response assessed per RECIST 1.1; b Includes SD and non-CR/non-PD; c Includes patients with no post-baseline response assessment and patients whose disease assessments are not evaluable; d Two-sided 95% exact confidence interval, computed using the Clopper-Pearson method (1934); e Time from the start of study treatment (Cohort A) or date of randomisation (Cohort B) to the first documentation of objective response (CR or PR that is subsequently confirmed); f Defined as sum of CR, PR, and SD

BICR, blinded independent central review; cORR, confirmed objective response rate; CR, complete response; DCR, disease control rate; PD, progressive disease; PR, partial response; RECIST, Response Evaluation Criteria in Solid Tumors; SD, stable disease.

Data cutoff: 28 Mar 2022

# Tucatinib + Trastuzumab: Change in Tumor Size

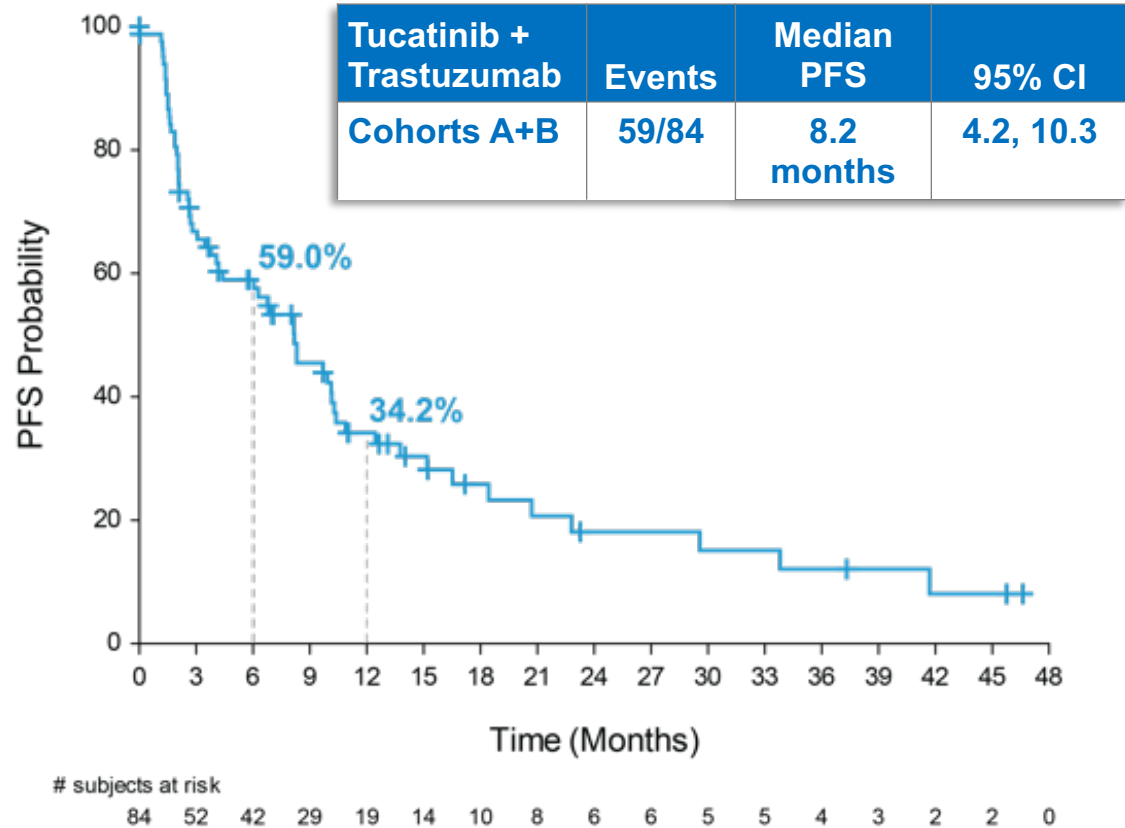


a Four patients who did not have baseline and/or post-baseline target lesion measurements are excluded  
CR, complete response; PD, progressive disease; PR, partial response; SD, stable disease.  
Data cutoff: 28 Mar 2022

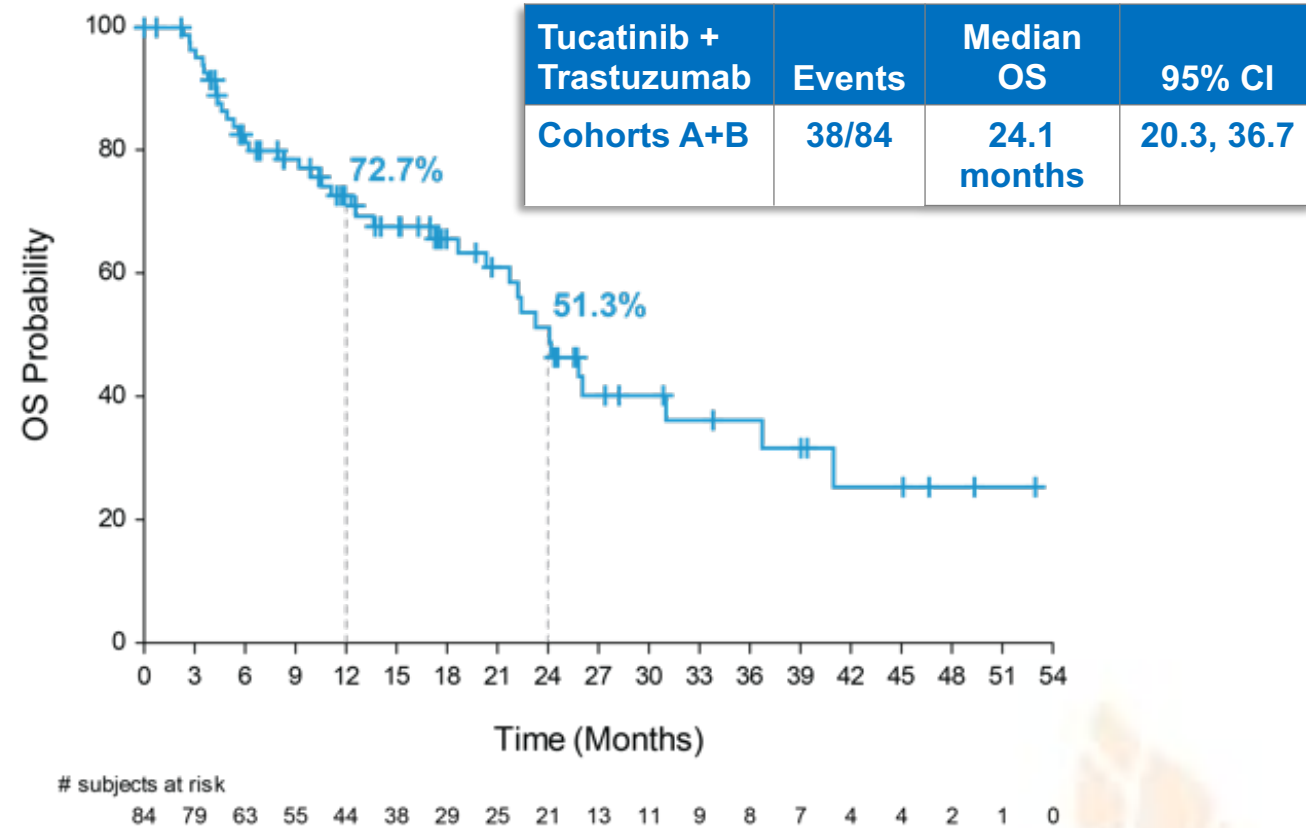


# Tucatinib + Trastuzumab: PFS and OS

Progression-free Survival per BICR



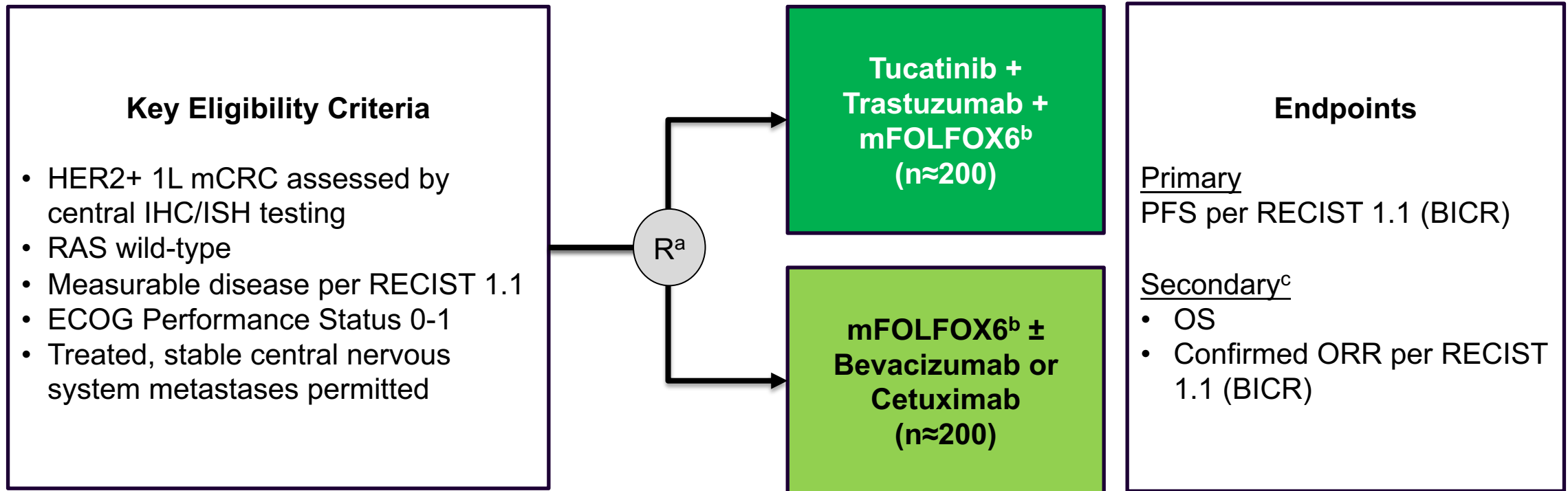
Overall Survival



Median follow-up for Cohorts A+B was 20.7 months (IQR, 11.7, 39.0)

# MOUNTAINEER-03:

## Global, Randomised, Open-Label, Phase 3 Trial



<sup>a</sup> Stratification: Primary tumor sidedness, liver metastases; <sup>b</sup> Levoleucovorin may be given in place of leucovorin; <sup>c</sup> Alpha-controlled

1L, first line; BICR, blinded independent central review; ECOG, Eastern Cooperative Oncology Group; HER2, human epidermal growth factor receptor 2; IHC, immunohistochemistry; ISH, in situ hybridization; mCRC, metastatic colorectal cancer; mFOLFOX6, 5-fluorouracil, leucovorin, and oxaliplatin; ORR, objective response rate; OS, overall survival; PFS, progression-free survival; R, randomisation; RAS, rat sarcoma virus; RECIST, Response Evaluation Criteria in Solid Tumors.

<https://clinicaltrials.gov/ct2/show/NCT05253651>

## FRESCO-2: A global phase 3 multiregional clinical trial evaluating the efficacy and safety of fruquintinib in patients with refractory metastatic colorectal cancer

Arvind Dasari<sup>1</sup>, Sara Lonardi<sup>2</sup>, Rocio Garcia-Carbonero<sup>3</sup>, Elena Elez<sup>4</sup>, Takayuki Yoshino<sup>5</sup>, Alberto Sobrero<sup>6</sup>, James Yao<sup>1</sup>, Pilar García-Alfonso<sup>7</sup>, Judit Kocsis<sup>8</sup>, Antonio Cubillo Gracian<sup>9</sup>, Andrea Sartore-Bianchi<sup>10</sup>, Taroh Satoh<sup>11</sup>, Violaine Randrian<sup>12</sup>, Jiri Tomasek<sup>13</sup>, Geoff Chong<sup>14</sup>, Zhao Yang<sup>15</sup>; William Schelman<sup>15</sup>; Marek Kania<sup>15</sup>, Josep Tabernero<sup>4</sup>, and Cathy Eng<sup>16</sup>

<sup>1</sup>Department of Gastrointestinal Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX, USA, <sup>2</sup>Medical Oncology Unit 1, Veneto Institute of Oncology IOV-IRCCS Padua, Padua, Italy, <sup>3</sup>Oncology Department, Hospital Universitario 12 de Octubre, Ima 12, UCM, Madrid, Spain, <sup>4</sup>Vall d'Hebron Barcelona Hospital Campus, Vall d'Hebron Institute of Oncology, Barcelona, Spain, <sup>5</sup>Department of Gastroenterology and Gastrointestinal Oncology, National Cancer Center Hospital East, Kashiwa, Japan, <sup>6</sup>Department of Medical Oncology, Azienda Ospedaliera San Martino, Genoa, Italy, <sup>7</sup>Medical Oncology, Hospital Universitario Gregorio Marañón, Madrid, Spain, <sup>8</sup>Department of Oncoradiology, Bács -Kiskun Megyei Oktatókórház, Kecskemét, Hungary, <sup>9</sup>Medical Oncology, Hospital Universitario Madrid Sanchinarro Centro Integral Oncológico Clara Campal, Madrid, Spain, <sup>10</sup>Department of Oncology and Hemato-Oncology, Università degli Studi di Milano, Milan, Italy, <sup>11</sup>Department of Gastroenterological Surgery, Graduate School of Medicine, Osaka University, Osaka, Japan, <sup>12</sup>Hepato-Gastroenterology Department, Poitiers University Hospital, Poitiers, France, <sup>13</sup>Department of Complex Oncology Care, Masaryk Memorial Cancer Institute, Brno, Czech Republic, <sup>14</sup>Olivia Newton-John Cancer & Wellness Centre, Austin Hospital, Heidelberg, VIC, Australia, <sup>15</sup>HUTCHMED International Corporation, Florham Park, NJ, USA, <sup>16</sup>Department of Medicine, Division of Hematology and Oncology, Vanderbilt-Ingram Cancer Center, Nashville, TN, USA



# FRESCO-2 Study Design

## Patient Eligibility

- Prior treatment with fluoropyrimidine-, oxaliplatin- and irinotecan-based chemotherapy, an anti-VEGF biological therapy, and, if *RAS* wild type, an anti-EGFR therapy
- Progression on, or intolerance to, TAS-102 and/or regorafenib
- Prior treatment with an immune checkpoint inhibitor or BRAF inhibitor if indicated

R  
2:1

N=687

**Fruquintinib 5 mg PO, QD**  
(3 weeks on, 1 week off)

+  
BSC

(N=458)

**Placebo 5 mg PO, QD**  
(3 weeks on, 1 week off)

+  
BSC

(N=229)

Treatment until  
progression or  
unacceptable toxicity

## Stratification Factors

- Prior therapy (TAS-102 vs regorafenib vs TAS-102 and regorafenib)
- *RAS* mutational status (wild-type vs mutant)
- Duration of metastatic disease ( $\leq 18$  months vs  $> 18$  months)

Note: To ensure the patient population is reflective of clinical practice, the number of patients treated with prior regorafenib was limited to 344 patients (50%)

BSC, best supportive care.

NCT04322539.



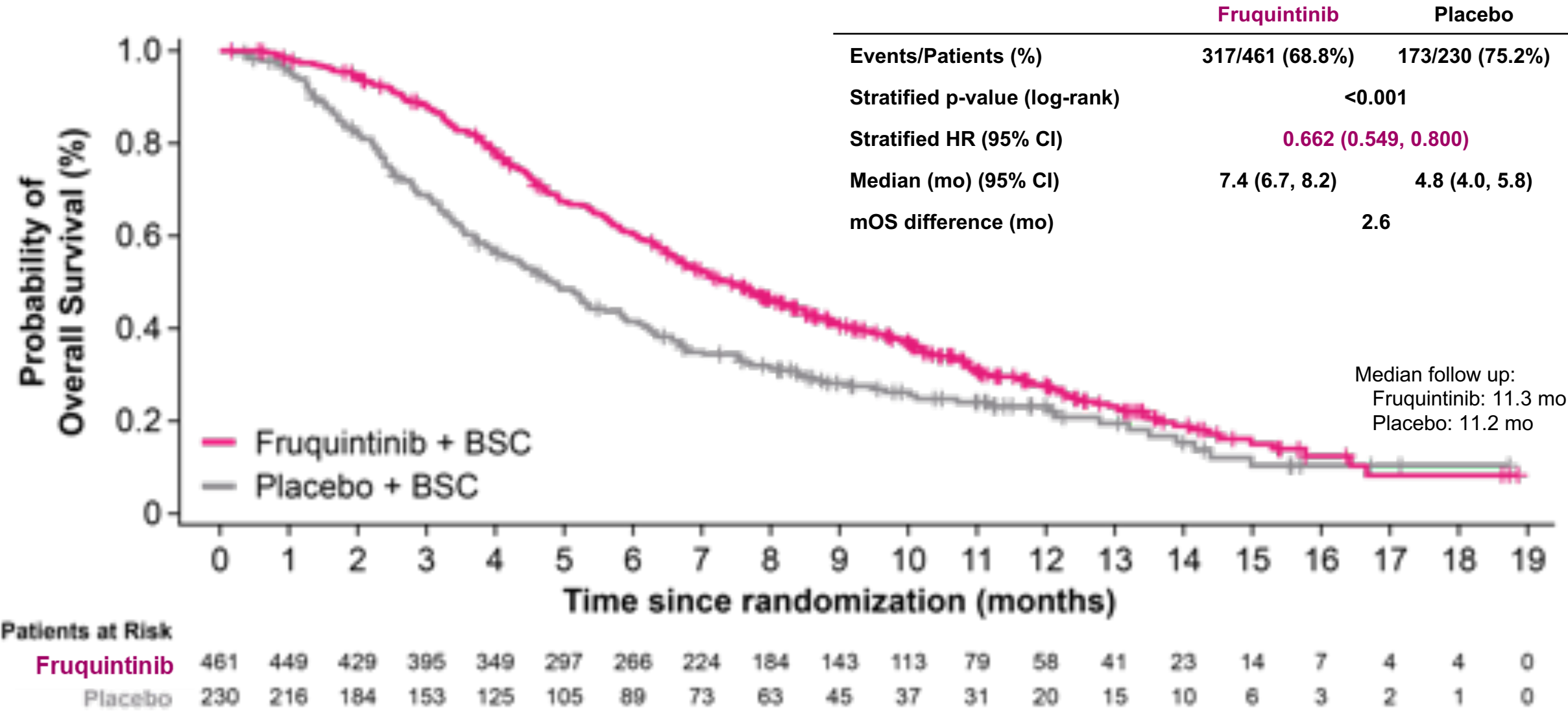
# Patient and Disease Characteristics

Enrollment: Sep 2020 to Dec 2021

Data Cutoff: 24 June 2022

Characteristic, n (%)		Fruquintinib (N=461)	Placebo (N=230)	Characteristic, n (%)		Fruquintinib (N=461)	Placebo (N=230)
Age, y	Median (range)	64 (25, 82)	64 (30, 86)	Duration of metastatic disease	≤ 18 mo	37 (8.0)	13 (5.7)
	≥ 65	214 (46.4)	111 (48.3)		> 18 mo	424 (92.0)	217 (94.3)
Sex	Female	216 (46.9)	90 (39.1)	RAS status	WT	170 (36.9)	85 (37.0)
	Male	245 (53.1)	140 (60.9)		Mutant	291 (63.1)	145 (63.0)
Region	North America	82 (17.8)	42 (18.3)	BRAF V600E mutation	No	401 (87.0)	198 (86.1)
	Europe	329 (71.4)	166 (72.2)		Yes	7 (1.5)	10 (4.3)
	Asia Pacific	50 (10.8)	22 (9.6)		Other/Unknown	5 (11.5)	22 (9.6)
ECOG PS	0	196 (42.5)	102 (44.3)	Number of prior treatment lines in metastatic disease	Median (range)	5 (2, 16)	5 (2, 12)
	1	265 (57.5)	128 (55.7)		≤ 3	125 (27.1)	64 (27.8)
Primary site at 1st diagnosis	Colon left	192 (41.6)	92 (40.0)		> 3	336 (72.9)	166 (72.2)
	Colon right	97 (21.0)	53 (23.0)	Prior therapies	VEGF inhibitor	445 (96.5)	221 (96.1)
	Colon left and right	4 (0.9)	2 (0.9)		EGFR inhibitor	180 (39.0)	88 (38.3)
	Colon unknown	25 (5.4)	13 (5.7)		Prior TAS-102 and/or regorafenib	TAS-102	240 (52.1)
	Rectum only	143 (31.0)	70 (30.4)	Regorafenib		40 (8.7)	18 (7.8)
Liver metastases	Yes	339 (73.5)	156 (67.8)	Both		181 (39.3)	91 (39.6)

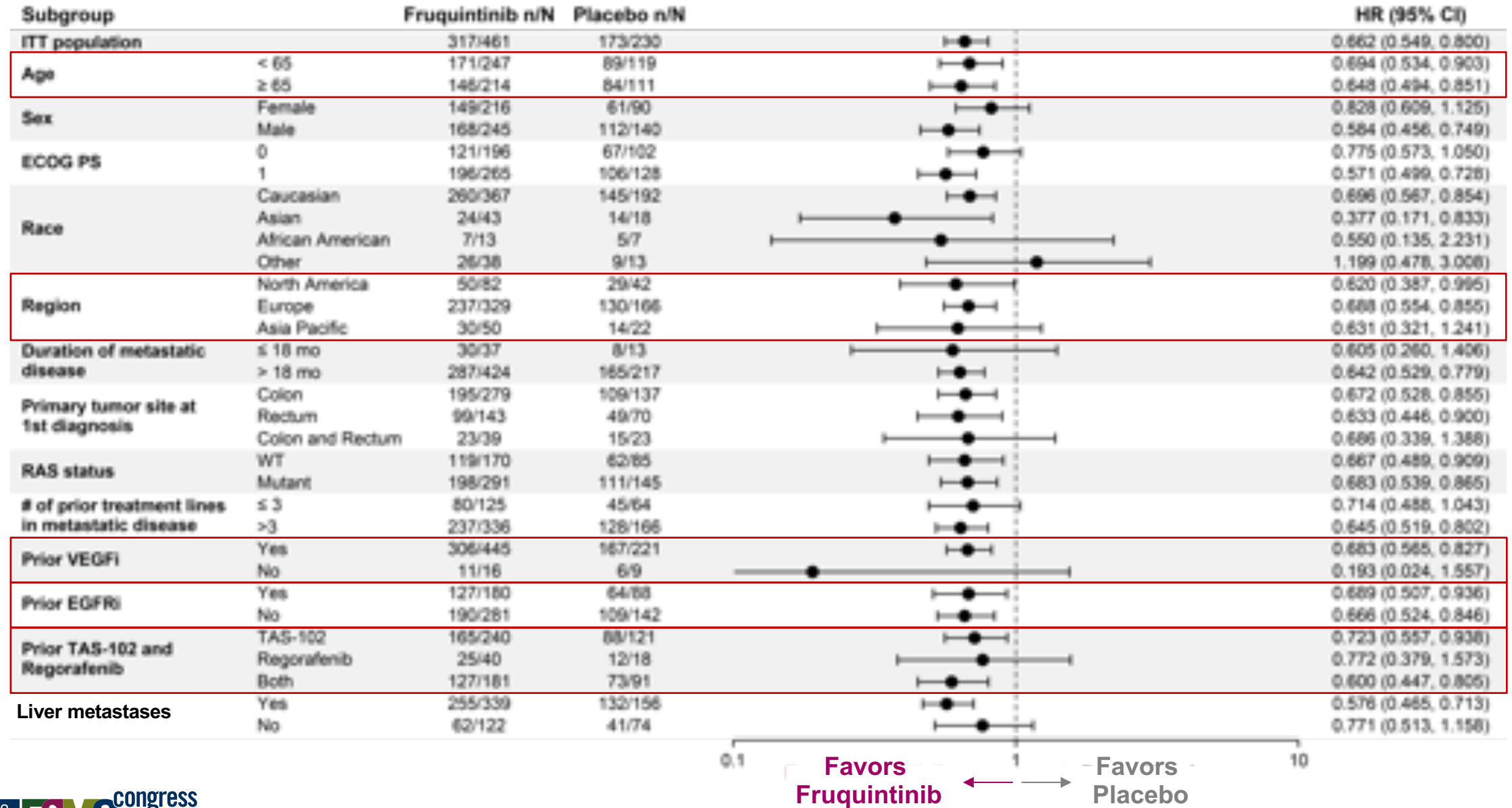
# Primary Endpoint: Overall Survival



Subsequent anti-cancer medication balanced between the two arms: **29.4% fruquintinib arm** vs. **34.3% placebo arm**

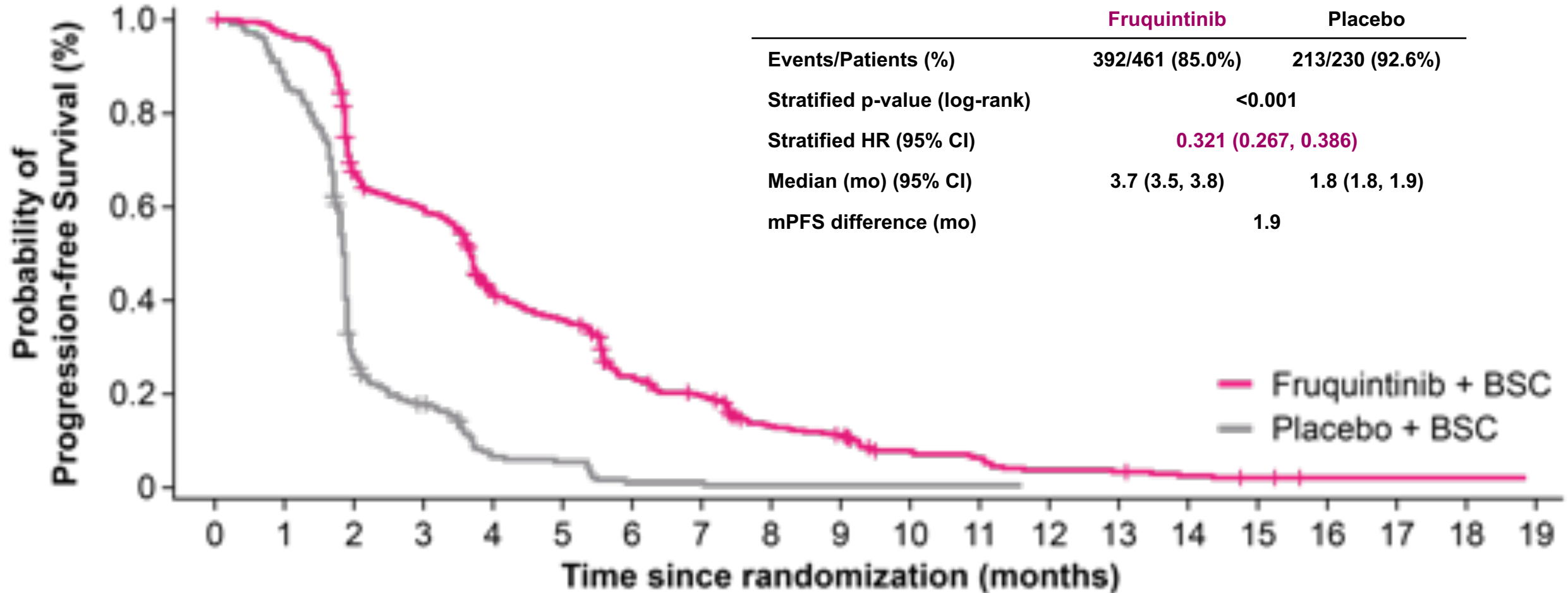
# OS Subgroup Analysis

ITT Population



# Progression-Free Survival

ITT Population



Patients at Risk

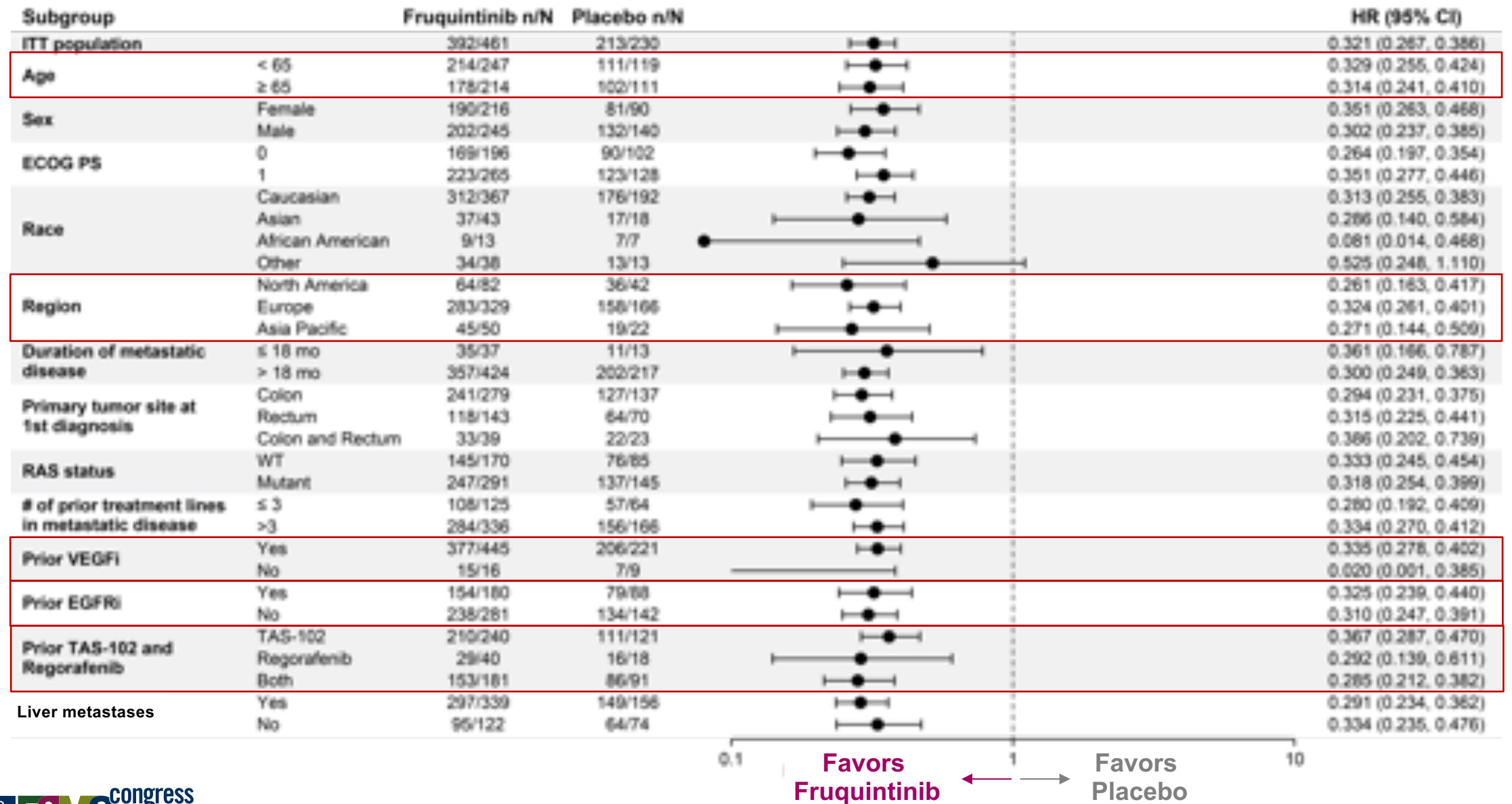
Fruquintinib

Placebo

461	430	291	256	170	146	89	71	43	36	21	17	10	9	6	4	2	2	2
230	194	60	36	12	10	2	2	1	1	1	1	0						



# PFS Subgroup Analysis

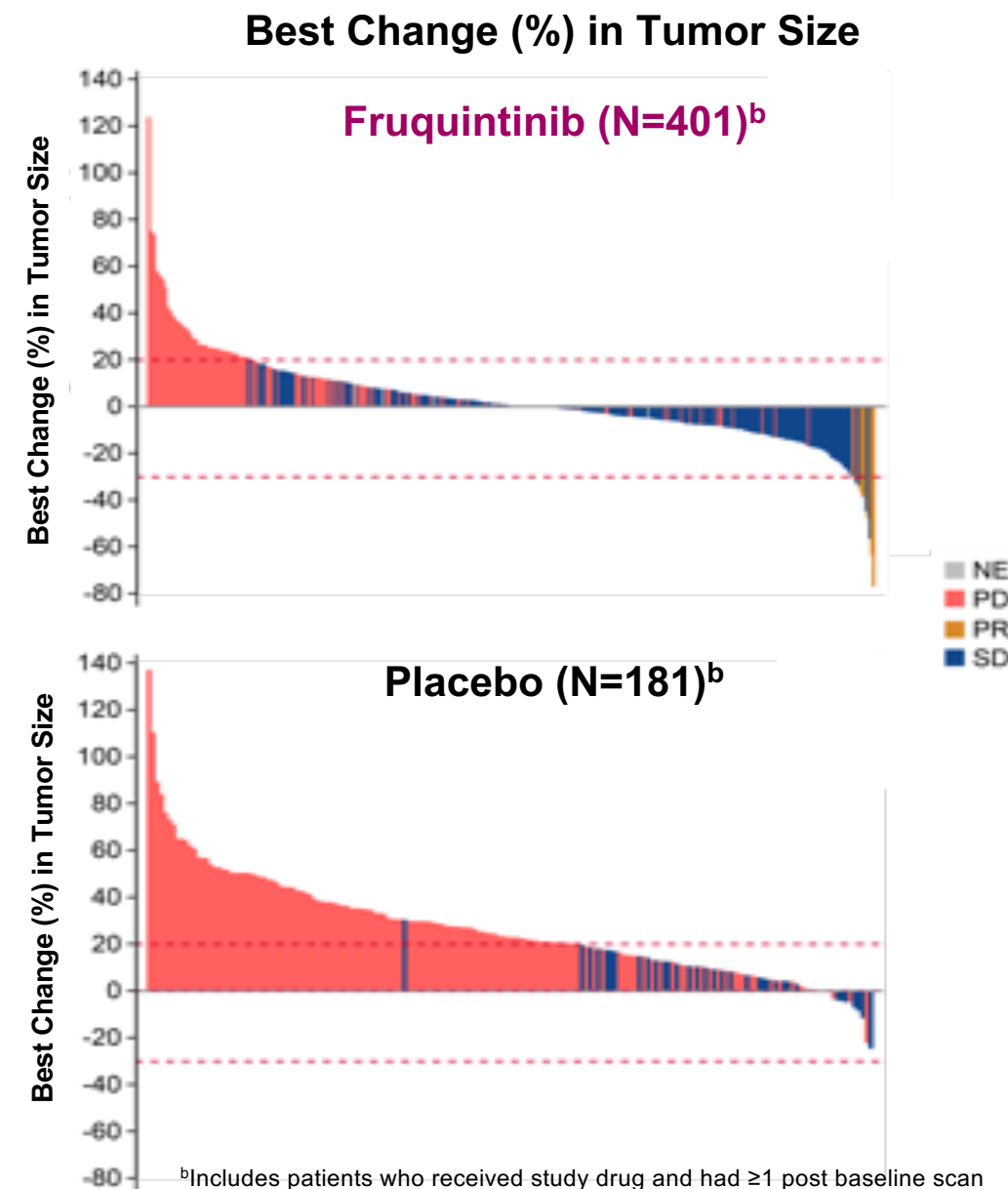


# Anti-Tumor Activity

Category	Fruquintinib N=461	Placebo N=230
Confirmed ORR (CR + PR) <sup>a</sup>	7 (1.5)	0
Adjusted difference (95% CI)	1.5 (0.4, 2.7)	
Two-sided p-value	0.059	
<b>Disease Control Rate (CR + PR + SD)</b>	<b>256 (55.5)</b>	<b>37 (16.1)</b>
Adjusted difference (95% CI)	39.4 (32.8, 46.0)	
Two-sided p-value	< 0.001	

<sup>a</sup>No CR reported

- Tumor assessments were performed every 8 weeks until disease progression

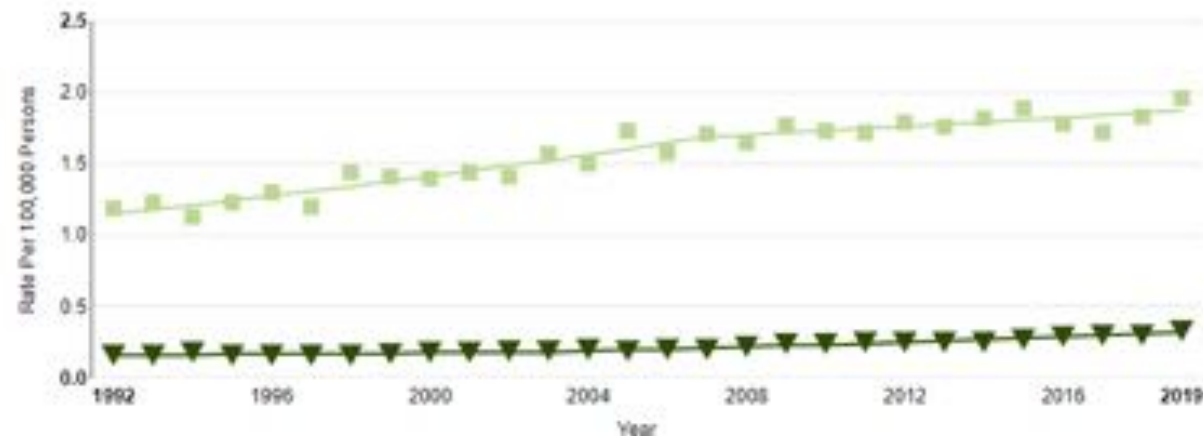


# Incidence of Anal Cancer

Rising in annual incidence by 2.7%

Estimated New Cases in 2022	9,440
% of All New Cancer Cases	0.5%
Estimated Deaths in 2022	1,670
% of All Cancer Deaths	0.3%

5-Year Relative Survival
<b>70.1%</b>
2012-2018



# Efficacy of Immune Checkpoint Inhibition in Previously Treated Metastatic SCCA

Drug	Phase	N	Dose	Primary endpoint	Secondary Endpoints
<b>ETCTN NCI9673: Nivolumab (Part A)</b>	II	34	3 mg/kg IV q2 wks	ORR: 24% (2CR's)	PFS: 4.1M OS: 11.5M
<b>Pembrolizumab (KN-158)</b>	I/II	112	200 mg IV q3 wks	ORR:11% (No CR's)	PFS: 2.0M OS: 11.9M
<b>Retifanlimab (POD1UM-202)</b>	II	94	500 mg IV q4 wks	ORR: 14% (1CR)	PFS: 2.3M OS:10.1M



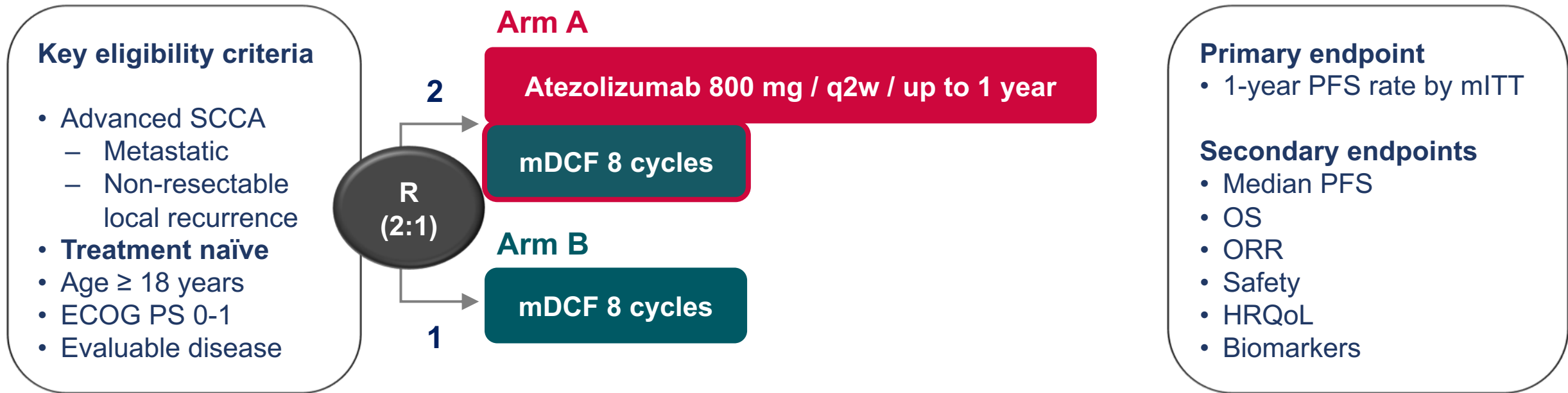
## **LBA 3508:**

# **Atezolizumab plus modified DCF (docetaxel, cisplatin, and 5-fluorouracil) as first-line treatment for metastatic or locally advanced squamous cell anal carcinoma (SCCA). A SCARCE-PRODIGE 60 randomized phase II study**

Stefano Kim,<sup>1</sup> François Ghiringhelli, Christelle de la Fouchardière, Eric François, Denis Smith, Emmanuelle Samalin, Daniel Lopez-Trabada Ataz, Aurélia Parzy, Jérôme Desramé, Nabil Baba Hamed, Bruno Buecher, David Tougeron, Oliver Bouché, Benoist Chibaudel, Farid El Hajbi, Marie-Line Garcia-Larnicol, Aurélia Meurisse, Dewi Vernerey, Simon Pernot, Christophe Borg

<sup>1</sup>Clinical Investigational Center CIC-1403, University Hospital of Besançon; University of Bourgogne-Franche Comté, Besançon, France

# SCARCE-PRODIGE 60 Study Design



**Stratification:** age (<65 vs ≥65 years), stage (synchronous metastatic vs metachronous metastatic vs locally advanced unresectable disease without metastasis)

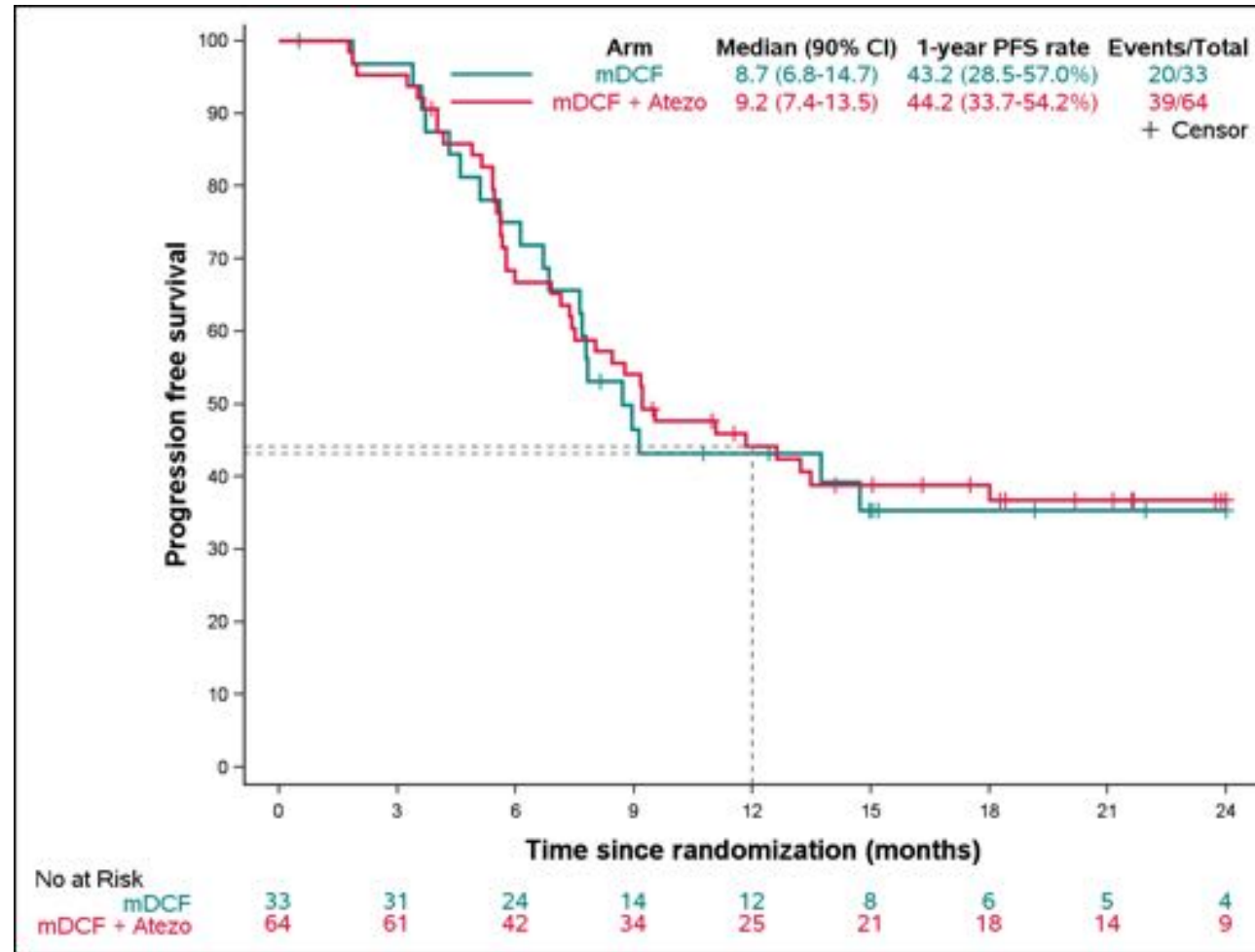
# Primary endpoint – 1-year PFS rate

Arm A

1-year PFS rate: 44.2%  
(90% CI 31.7-56.0)

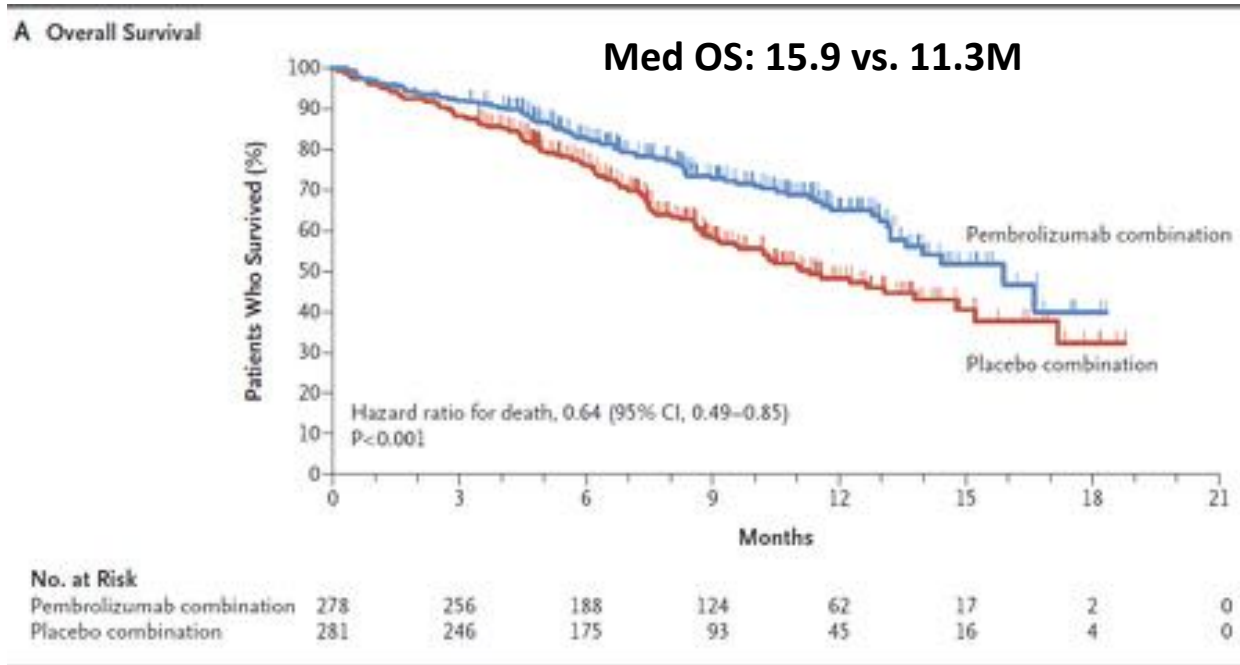
Arm B

1-year PFS rate: 43.2%  
(90% CI 25.8-59.4)

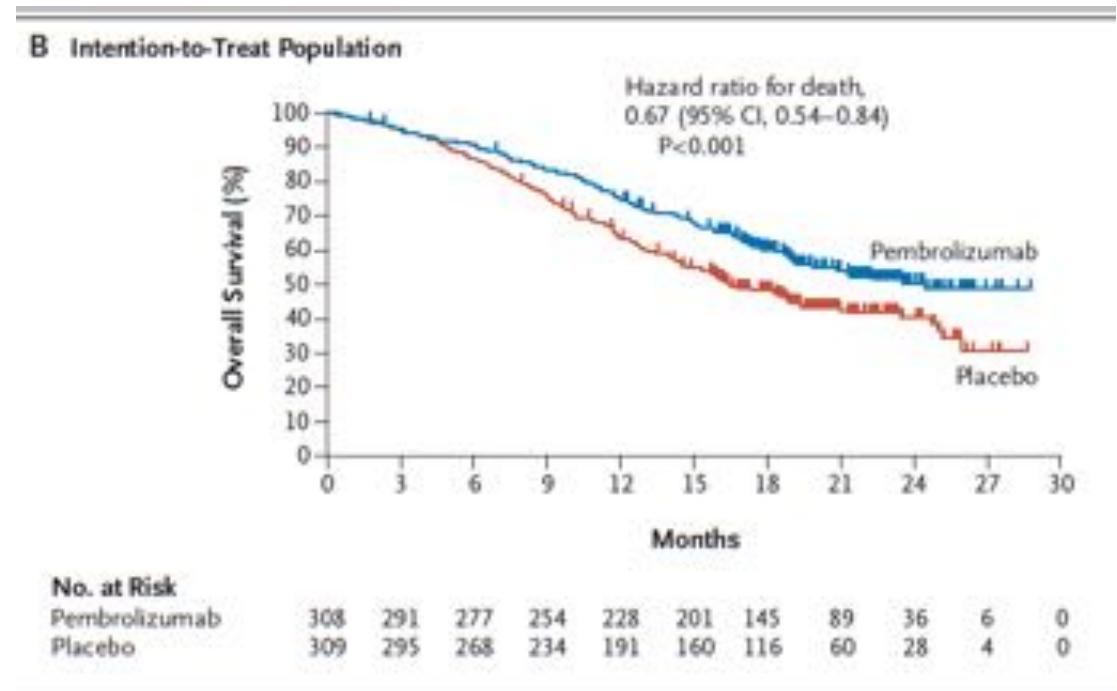


# Platinum +/- Immune Checkpoint Inhibitors in Other Squamous Cell Cancers

Phase III: Carboplatin + Paclitaxel (Nab) +/- Pembrolizumab in Squamous NSCLC (KN407)



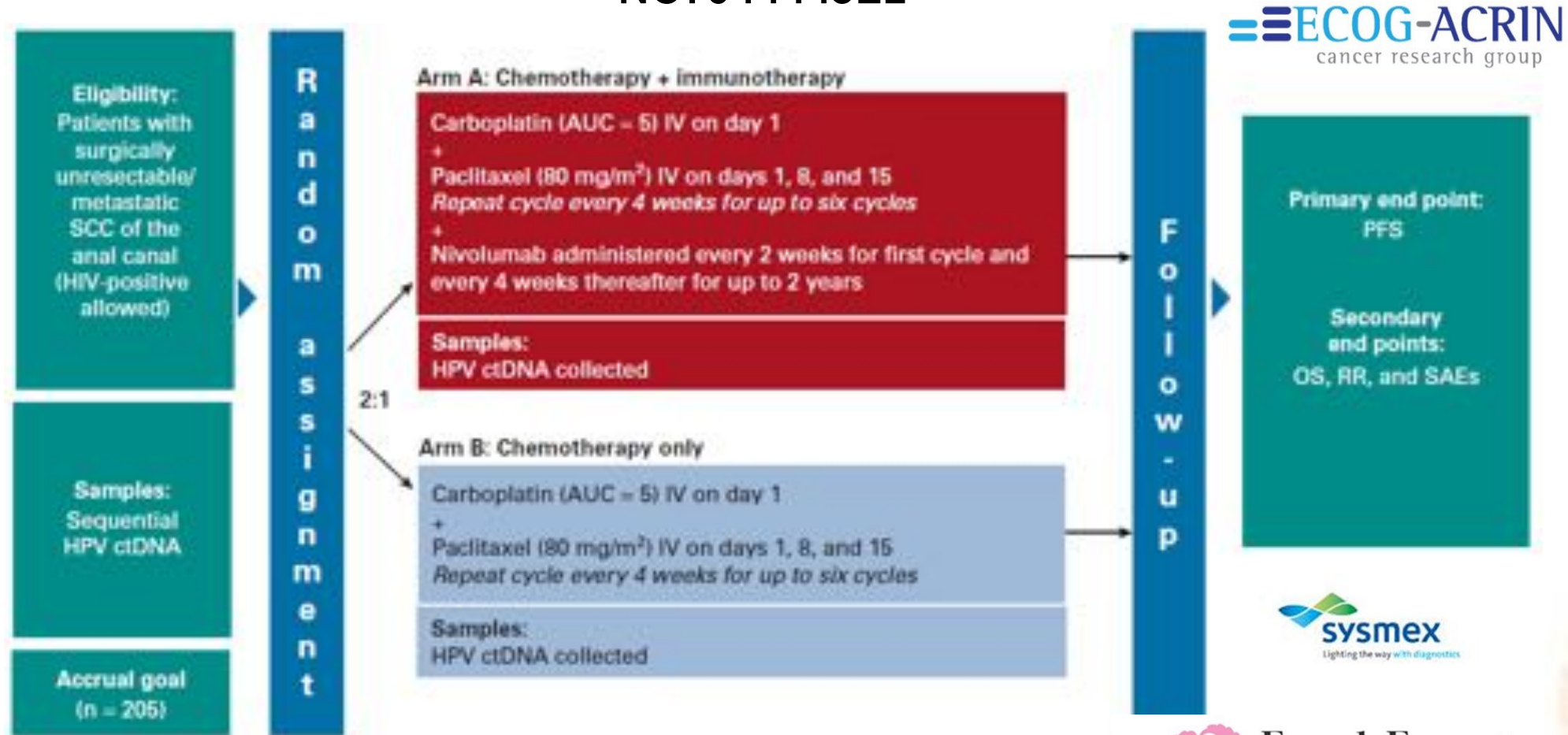
Platinum +/- Pembrolizumab in Cervical Cancer  
24M OS = 50.4% and 40.4% (KN826)





# EA2176: Phase 3 Clinical Trial of Carboplatin and Paclitaxel +/- Nivolumab in Treatment-Naive Metastatic Anal Cancer Patients

## NCT04444921



PI: C. Eng  
Co-PI's: A. Benson, K. Ciombor

 **Farrah Fawcett  
Foundation**

