UC San Diego Health

Oncology Updates: Colorectal Cancer

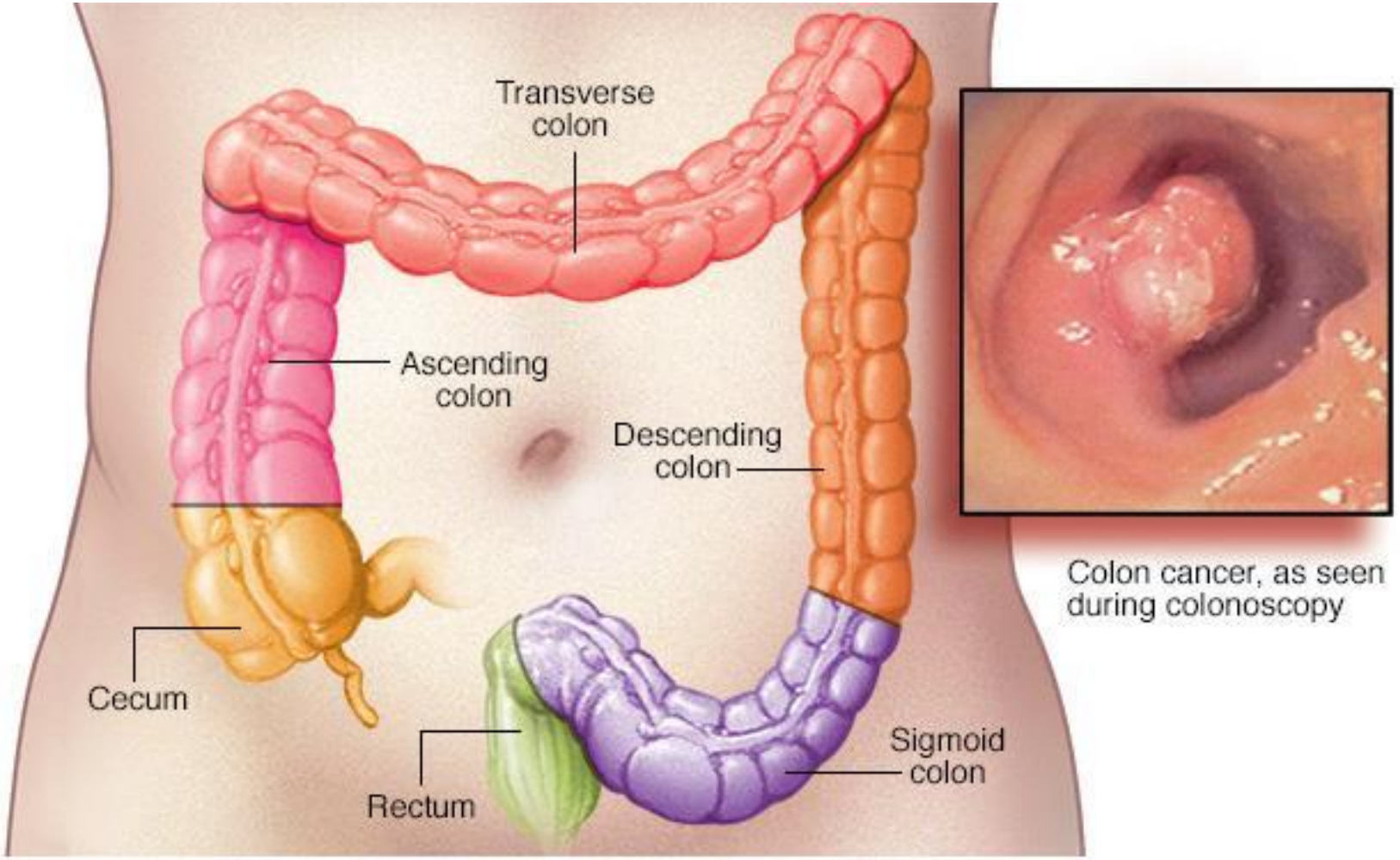
Gregory Botta MD/PhD

Associate Clinical Professor, Division of Medical Oncology

Gastrointestinal Oncology

3/18/2026

Anatomy


Transverse colon
Ascending colon
Descending colon
Cecum
Rectum
Sigmoid colon
Colon cancer, as seen during colonoscopy
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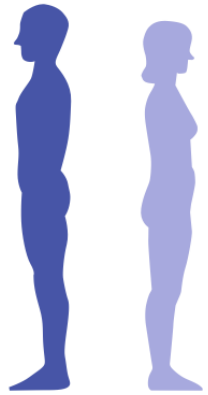
Epidemiology - 2025

Estimated New Cases

Male			Female		
Prostate	313,780	30%	Breast	316,950	32%
Lung & bronchus	110,680	11%	Lung & bronchus	115,970	12%
Colon & rectum	82,460	8%	Colon & rectum	71,810	7%
Urinary bladder	65,080	6%	Uterine corpus	69,120	7%
Melanoma of the skin	60,550	6%	Melanoma of the skin	44,410	4%
Kidney & renal pelvis	52,410	5%	Non-Hodgkin lymphoma	35,210	4%
Non-Hodgkin lymphoma	45,140	4%	Pancreas	32,490	3%
Oral cavity & pharynx	42,500	4%	Thyroid	31,350	3%
Leukemia	38,720	4%	Kidney & renal pelvis	28,570	3%
Pancreas	34,950	3%	Leukemia	28,170	3%
All sites	**1,053,250**		**All sites**	**988,660**	



Estimated Deaths

Male			Female		
Lung & bronchus	64,190	20%	Lung & bronchus	60,540	21%
Prostate	35,770	11%	Breast	42,170	14%
Colon & rectum	28,900	9%	Pancreas	24,930	8%
Pancreas	27,050	8%	Colon & rectum	24,000	8%
Liver & intrahepatic bile duct	19,250	6%	Uterine corpus	13,860	5%
Leukemia	13,500	4%	Ovary	12,730	4%
Esophagus	12,940	4%	Liver & intrahepatic bile duct	10,840	4%
Urinary bladder	12,640	4%	Leukemia	10,040	3%
Non-Hodgkin lymphoma	11,060	3%	Non-Hodgkin lymphoma	8,330	3%
Brain & other nervous system	10,170	3%	Brain & other nervous system	8,160	3%
All sites	**323,900**		**All sites**	**294,220**	

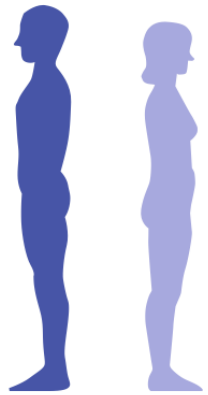
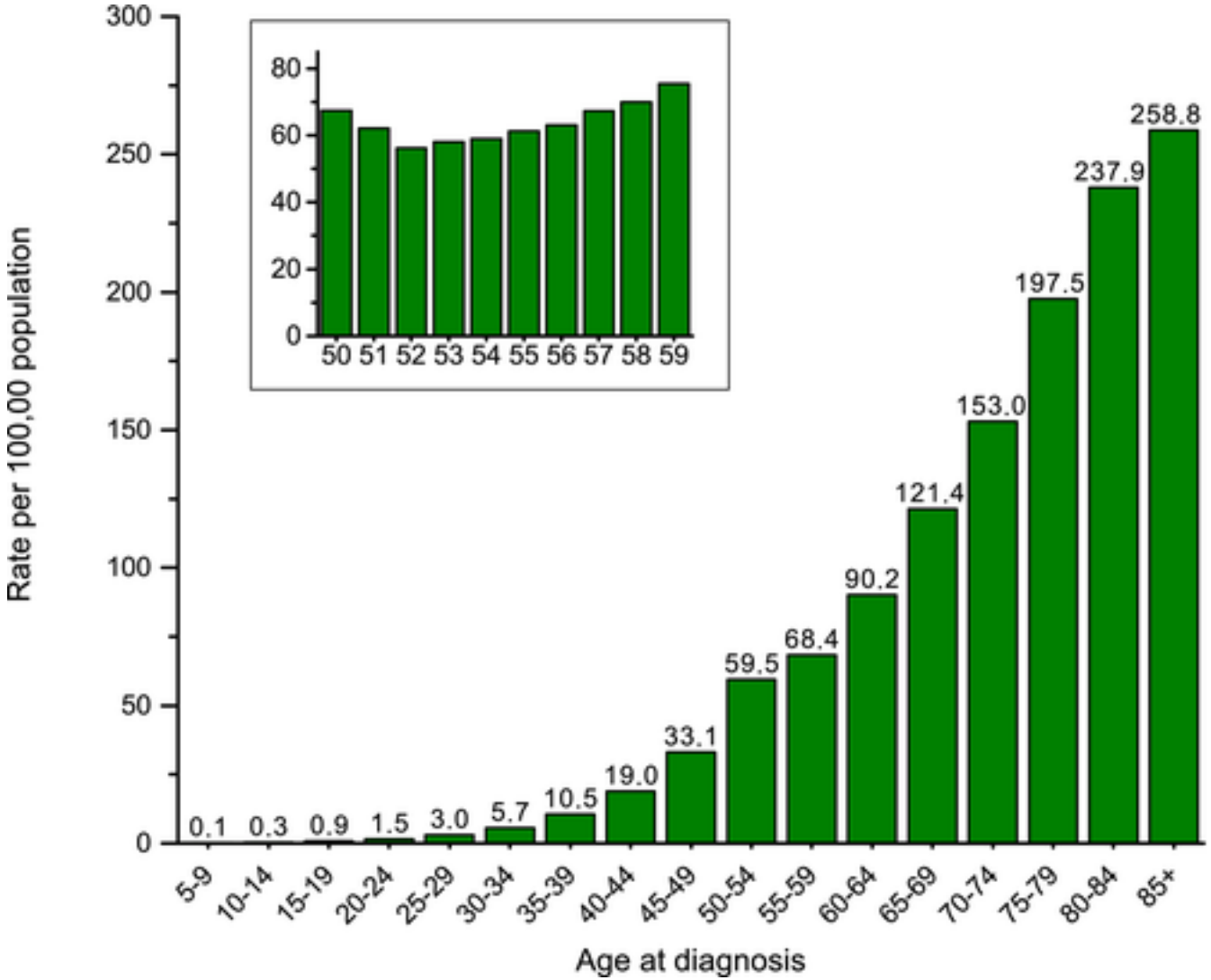
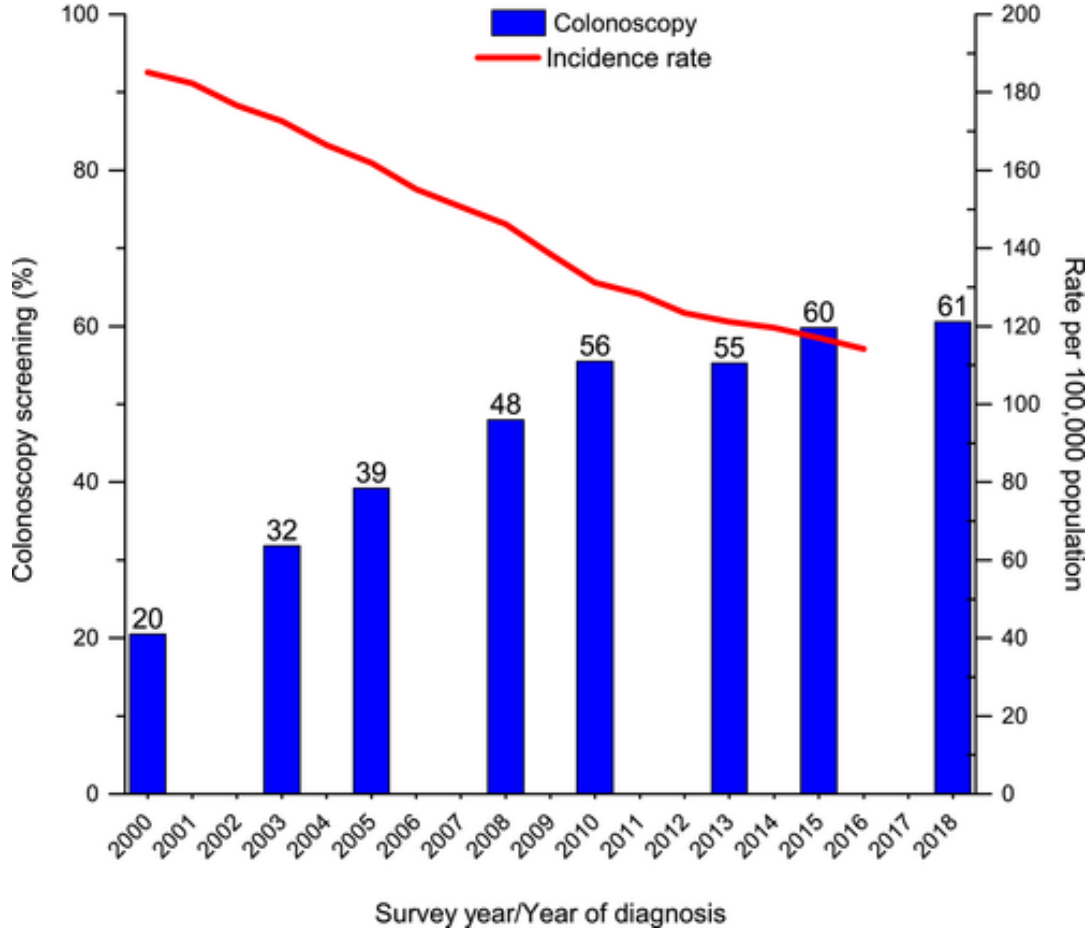


FIGURE 1 Leading sites of estimated new cancer cases and deaths by sex, United States, 2025. Estimates exclude US territories and are rounded to the nearest 10, and cases exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder. Ranking is based on modeled projections and may differ from the most recent observed data.





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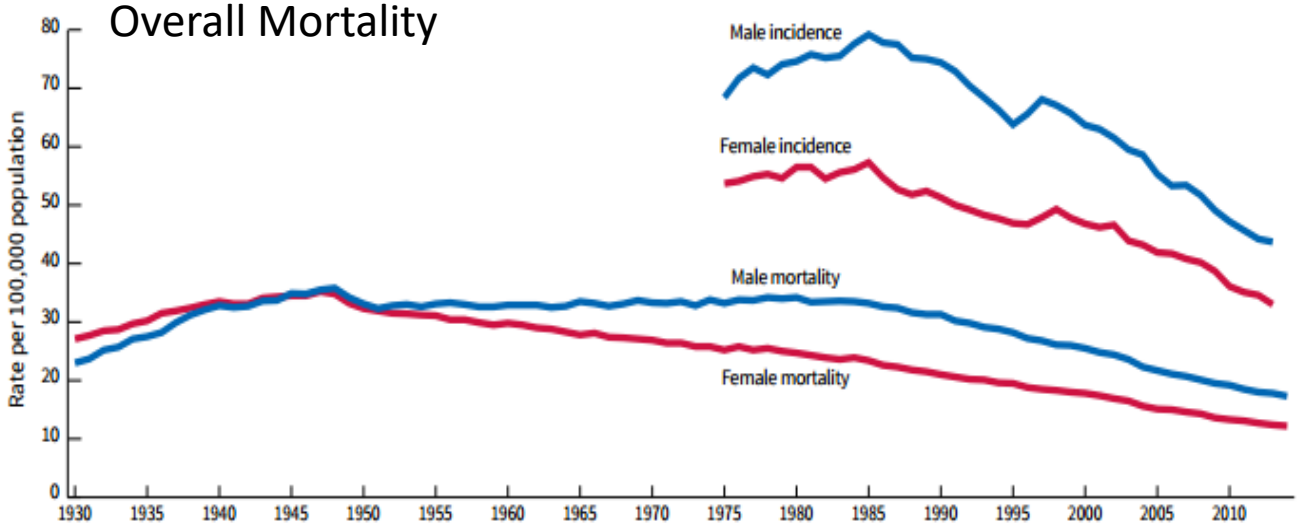
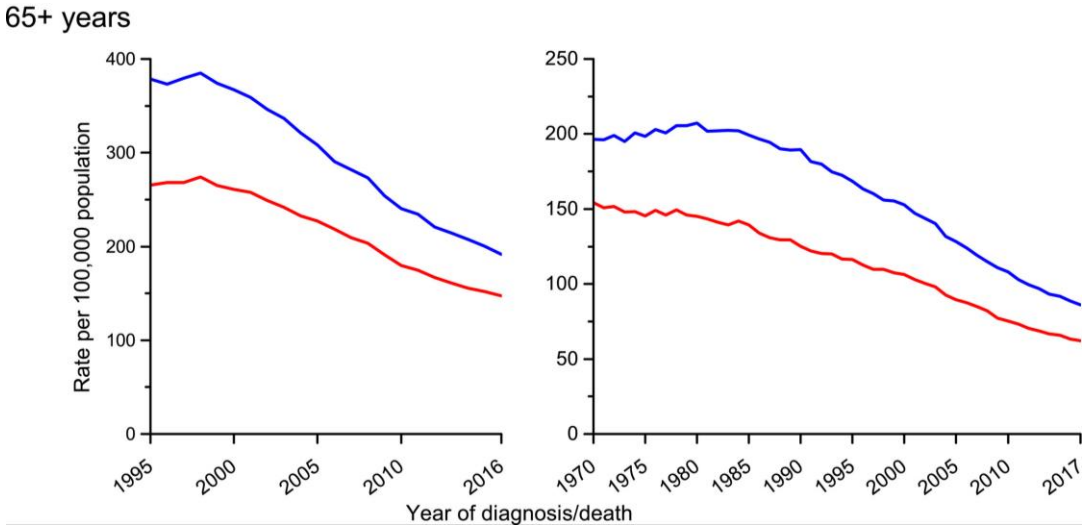
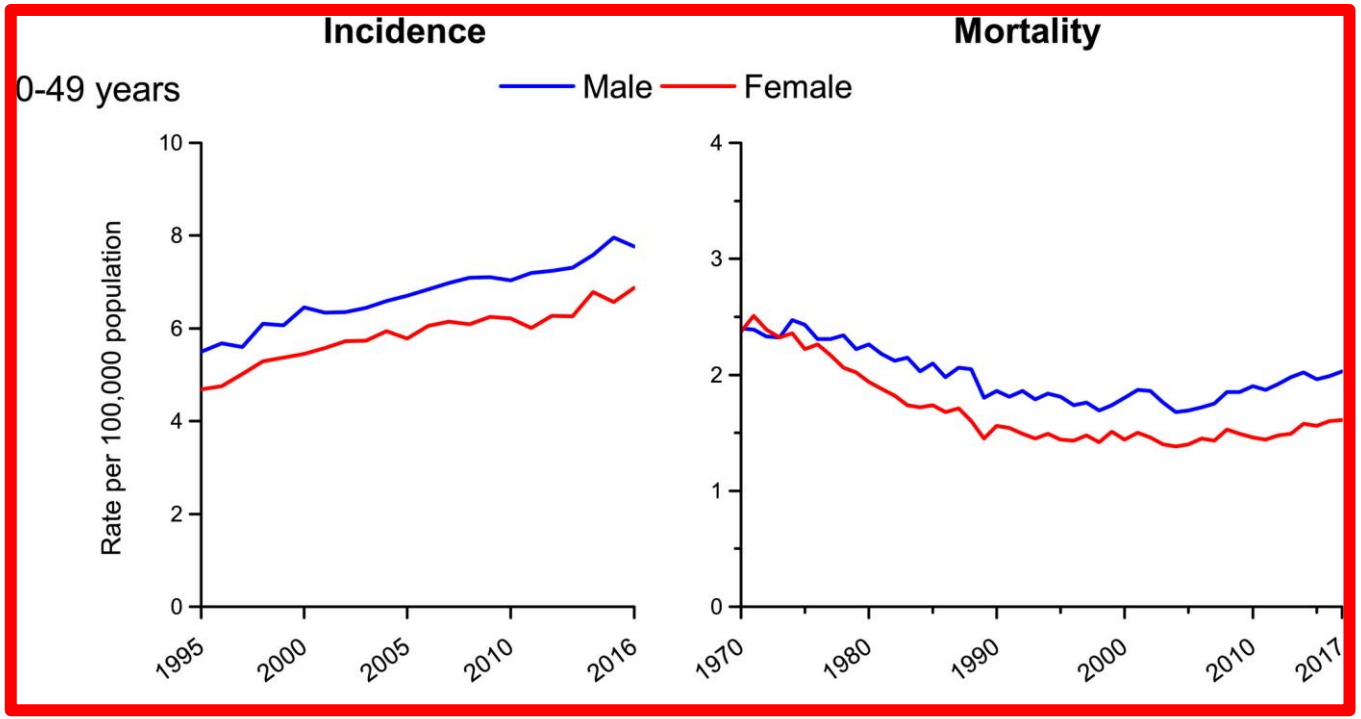
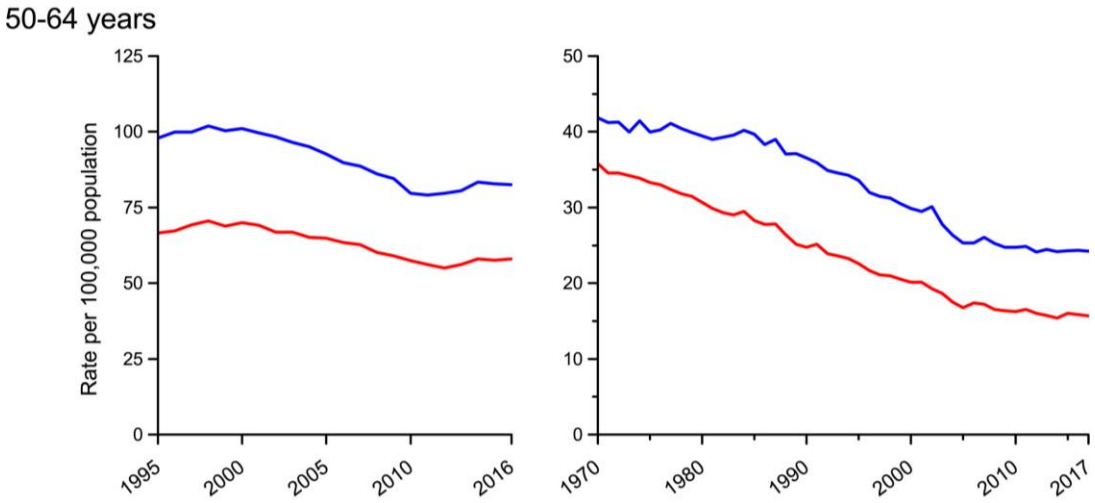
Overall Mortality









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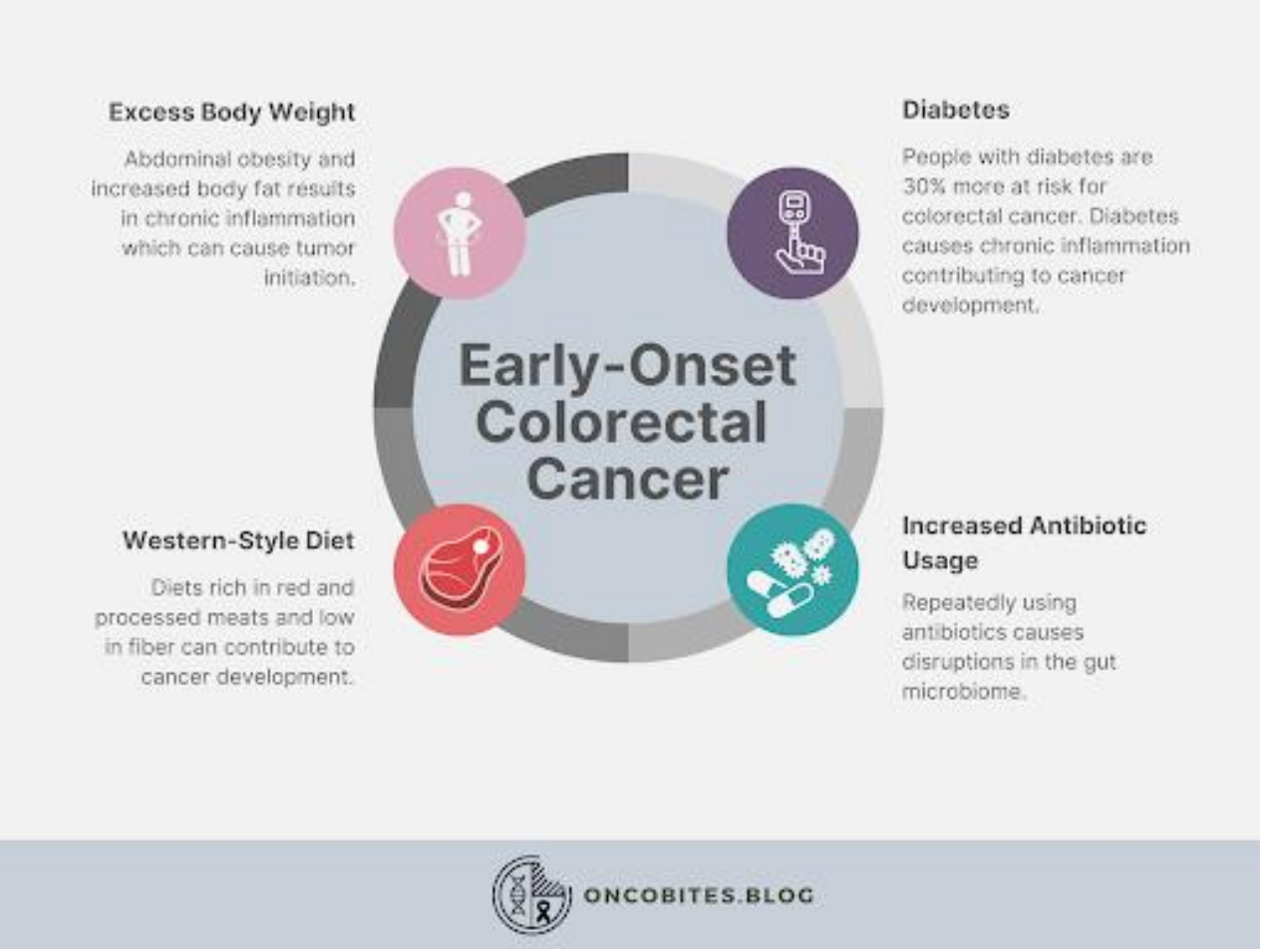
ACS Statistics 2022

Early Onset CRC



EurekAlert! | AAAS

HOME NEWS RELEASES MULTIMEDIA MEETINGS

NEWS RELEASE 23-APR-2025

Childhood exposure to bacterial toxin may be triggering colorectal cancer epidemic among the young

Peer-Reviewed Publication

UNIVERSITY OF CALIFORNIA - SAN DIEGO

In an effort to explain a modern medical mystery, an international team of researchers led by the University of California San Diego has identified a potential microbial culprit behind the alarming rise in early-onset colorectal cancer: a bacterial toxin called colibactin.

Produced by certain strains of *Escherichia coli* that reside in the colon and rectum, colibactin is a toxin capable of altering DNA. Now, scientists report that exposure to colibactin in early childhood imprints a distinct genetic signature on the DNA of colon cells—one that may

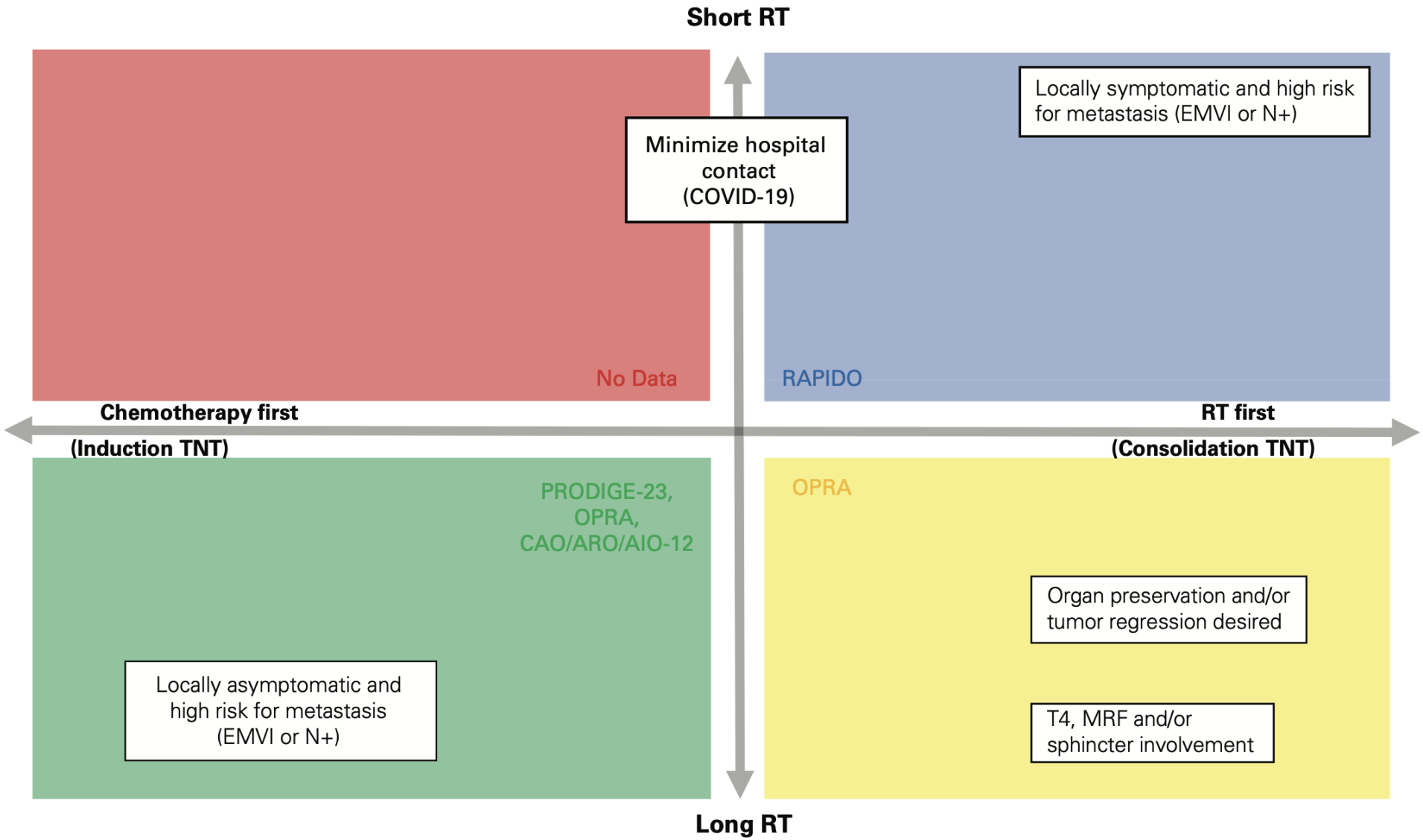
Goals in Rectal Cancer

- Cure patient from disease if possible (OS)
- Reduce Burden of Disease otherwise (OS/QoL)
- Reduce Cost of Treatment (QoL)

Table 1. Landmark total neoadjuvant therapy randomized controlled trials

Study (year)	Rectal cancers included	Treatment arms (no. of cycles)	*N*	Survival outcomes (%)	pCR (%)	Completed chemo-therapy (%)	Received surgery (%)	R0 resection (%)	Follow-up (mo)
PRODIGE-23 (2020)[1]	cT3 or cT4	Standard: 5FU-CRT→Surgery	230	DFS: 69* OS: 88	12.1*	75	89	94	46.5
		Induction: FOLFIRINOX(6)→ 5FU-CRT→Surgery	231	DFS: 76* OS: 91	27.8*	81	94	95	
RAPIDO (2020)[2]	cTa-b, or EMVI+, CN2, MRF+, or LPLN+	Standard: 5FU-CRT→Surgery→ ±FOLFOX(12)/CAPOX(8)	450	DRTF: 30* OS: 89	14.3*	66†	89	90	54
		Consolidation: SCRT→FOLFOX(9)/ CAPOX(6)→Surgery Standard: 5FU/ OX-CRT→Surgery	462	DRTF: 24* OS: 89	28.4*	85	92	90	
POLISH II (2019)[3]	Primary or locally recurrent cT4, or a palpable fixed cT3	Standard: 5FU/OX-CRT→Surgery	254	DFS: 43 OS: 49	12	NR	92	71	84
		Consolidation: SCRT→FOLFOX(3)→Surgery	261	DFS: 41 OS: 49	16	99	93	77	
STELLAR (2022)[4]	Primary cT3-4 or N+ in mid to distal rectum	Standard: CAPE-CRT→Surgery→CAPOX(6)	293	DFS: 62 OS: 75*	12.3*	58	78.5	87.8	35
		Consolidation: SCRT→CAPOX(4) →Surgery→CAPOX(2)	298	DFS: 65 OS: 87*	21.8*	59 (98 neoadjuvant only)	78.9	91.5	
CAO/ARO/ AIO-12 (2019)[6]	cT3 if < 6 cm from AV; > cT3b if 6–12 cm from AV; cT4, or LPLN+	Consolidation: 5FU/OX-CRT→FOLFOX(3)→Surgery	156	NR	25	85	91	90	NR
		Induction: FOLFOX(3)→ 5FU/OX-CRT→Surgery	150	NR	17	92	95	92	
OPRA (2020)[7]	AJCC stage III–IV	Consolidation: 5FU-CRT→ FOLFOX/CAPOX(4 mo)→Surgery	155	DFS: 77 DMFS: 83	NR	NR	42*‡	NR	25
		Induction: FOLFOX/ CAPOX(4 mo)→5FU-CRT→Surgery	152	DFS: 78 DMFS: 81	NR	NR	57*‡	NR	

UCSD NAPRC – Multi-D Tumor Board



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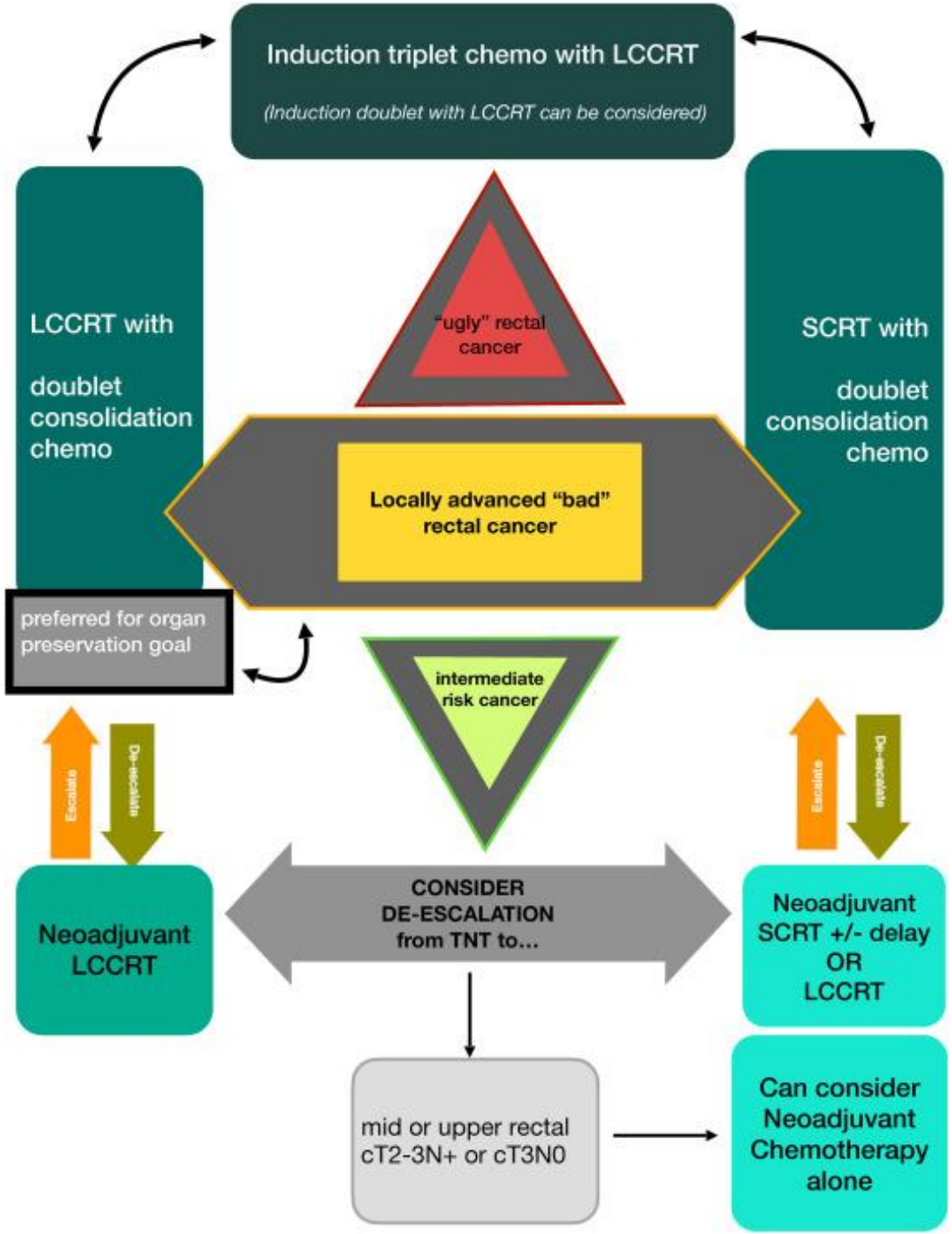
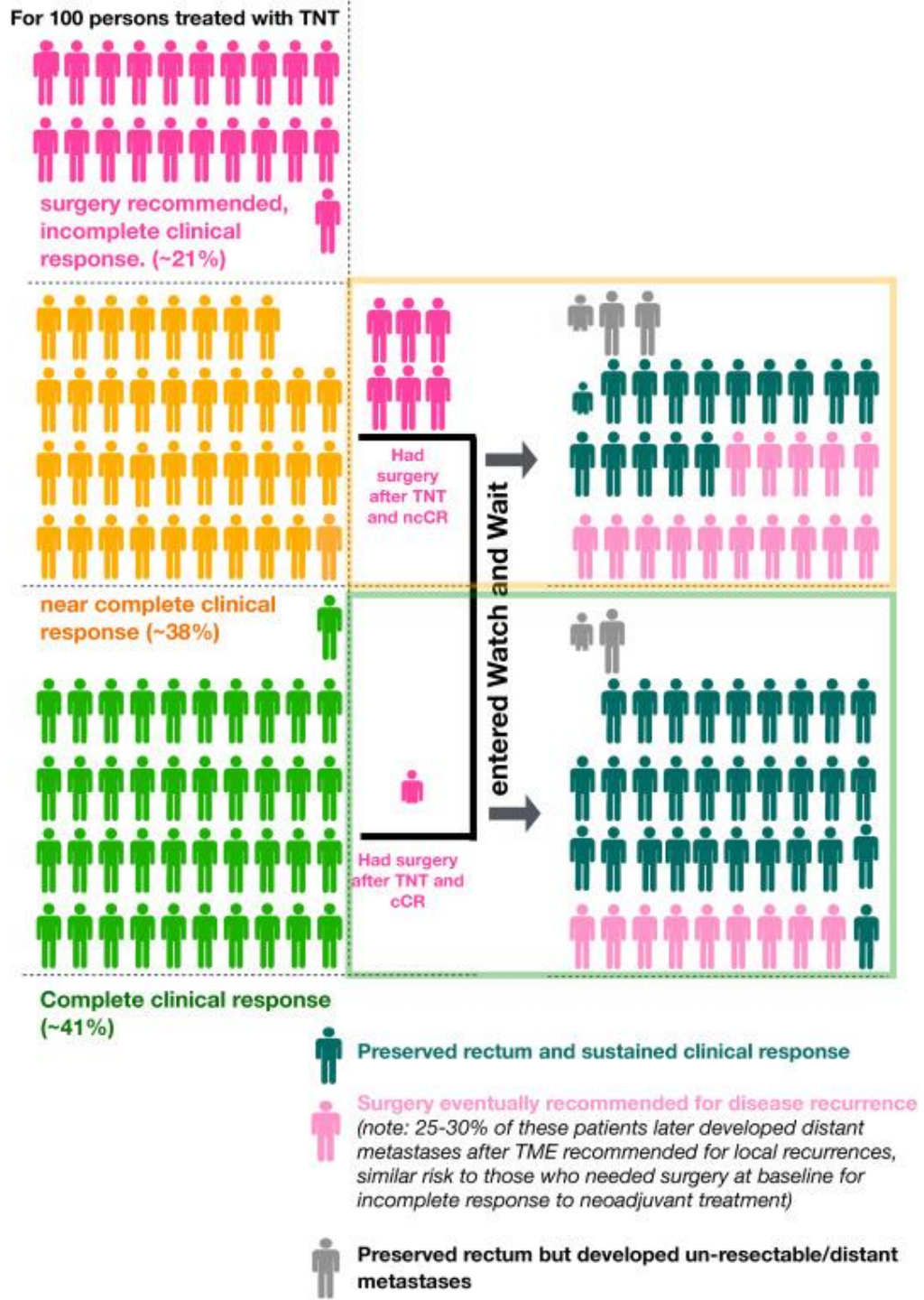
Johnson et al 2023



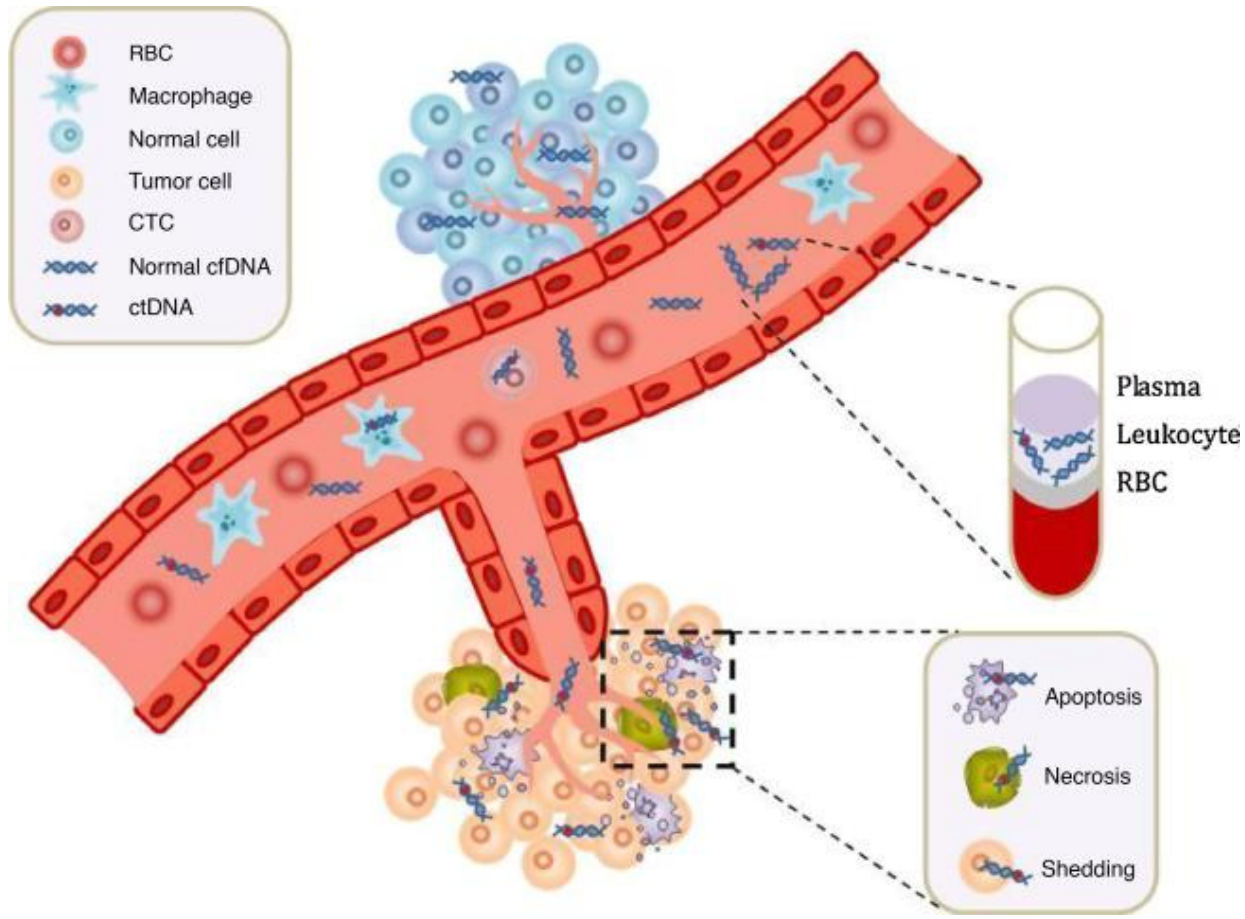
Parikh et al. 2025

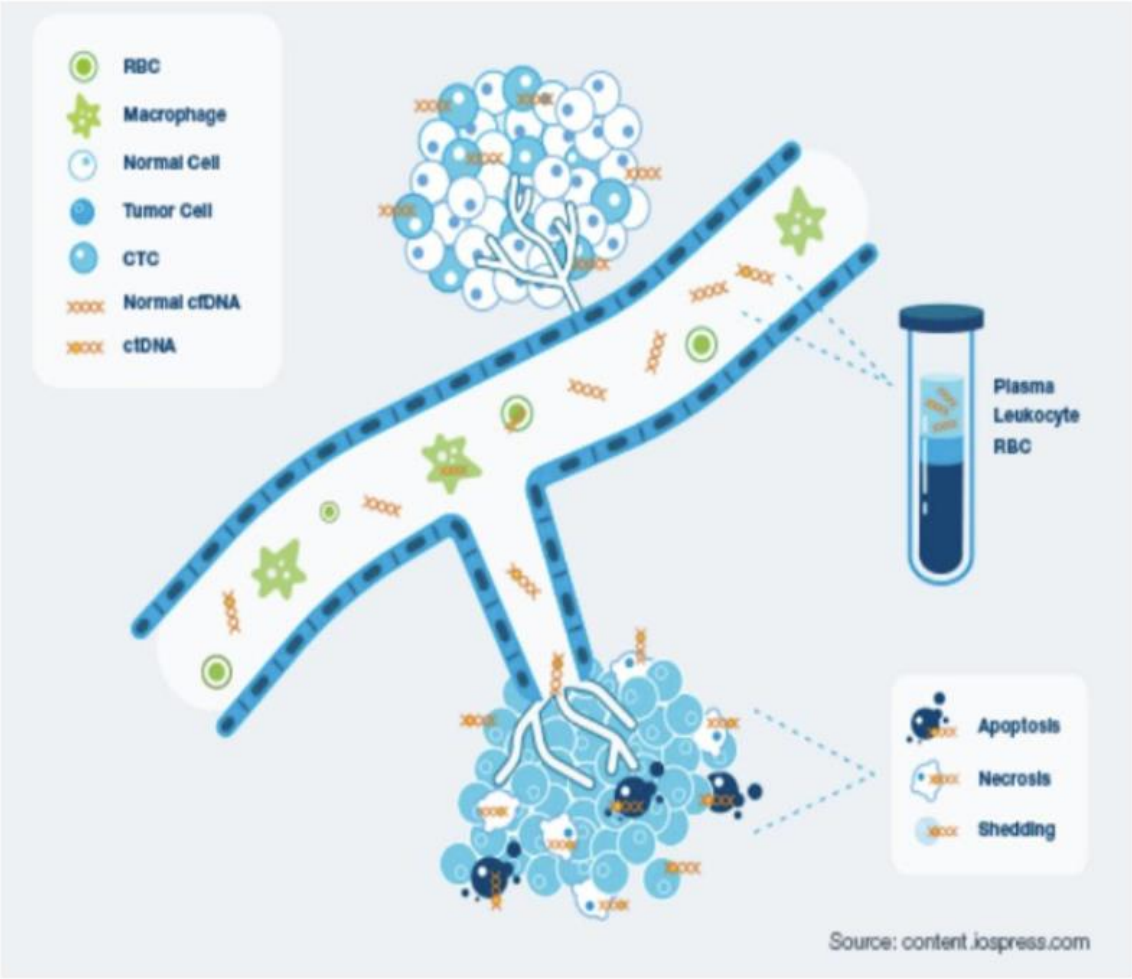


Parikh et al. 2025

Post Treatment Surveillance

Examination type	Year 1	Year 2	Year 3	Year 4	Year 5
Physical examination and history	Every 3-6 months	Every 3-6 months	Every 6 months	Every 6 months	Every 6 months
CEA (carcinoembryonic antigen test)	Every 3-6 months	Every 3-6 months	Every 6 months	Every 6 months	Every 6 months
Colonoscopy (colon and rectal cancer patients)	Colonoscopy at 1 year (rectal cancer patients: may be done at 3-6 months if it was not done before surgery). If advanced adenoma found, repeat in 1 year; otherwise repeat in 3 years. If 3-year colonoscopy is clear, repeat every 5 years.				
Sigmoidoscopy (for rectal cancer patients who received LAR)	Every 6 months can be considered				
Abdominal and chest CT scan (**colon and rectal**) and pelvic CT scan (recommended if primary tumor was located in the rectum)	Yes	Yes	Yes	As determined by your doctor	As determined by your doctor

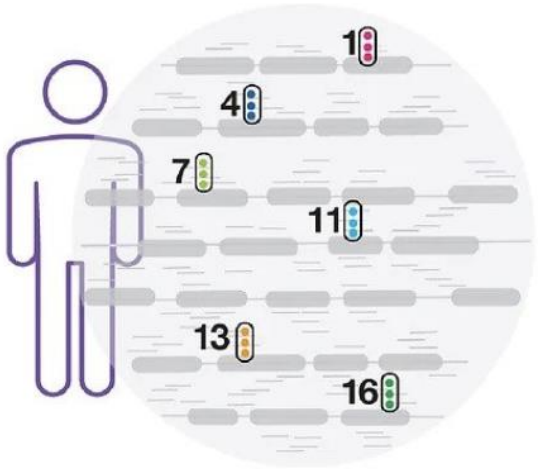




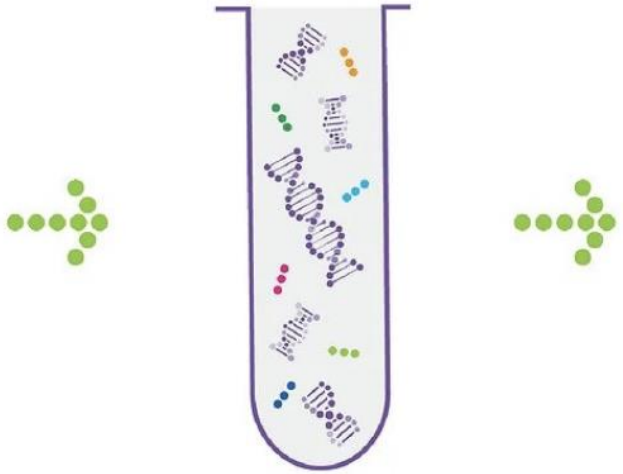
WHY IS CIRCULATING TUMOR DNA (ctDNA) INTERESTING FOR MRD ASSESSMENT?

- Every patient's tumor has a unique molecular profile and a dynamic evolution.
- Cancer cells release circulating tumor DNA (ctDNA) into the bloodstream that reflects each tumor's unique genetic fingerprint.
- ctDNA is a powerful tool that can be used to measure and assess the absence or presence of MRD based on the tumor's unique molecular profile.
- Dynamic real-time biomarker: the normal half-life is less than an hour.

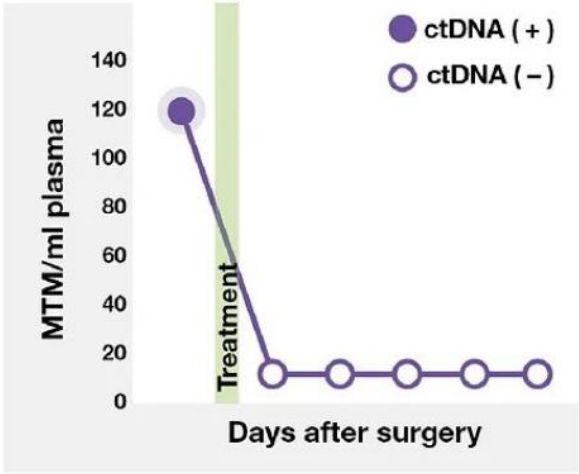
Whole exome sequencing and individualized selection of 16 clonal, somatic variants



Patient-specific primer design and multiplex PCR assay plus next generation sequencing



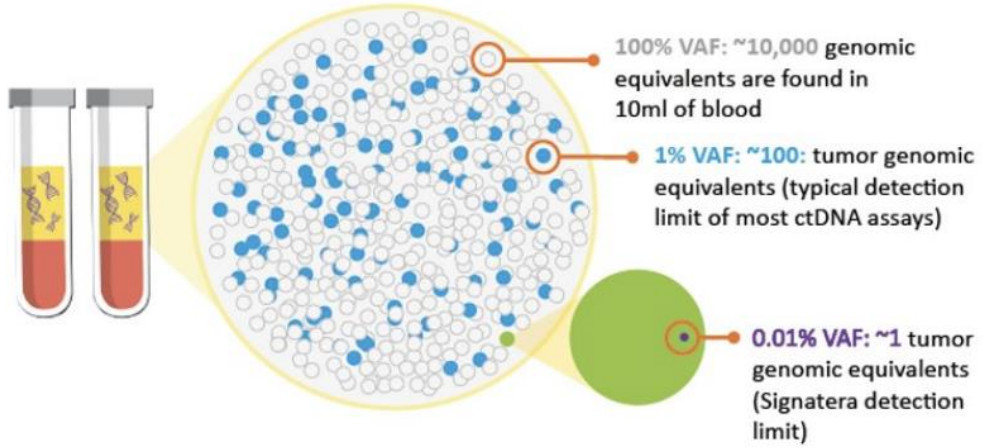
Longitudinal monitoring for the presence of ctDNA



SENSITIVITY & SPECIFICITY

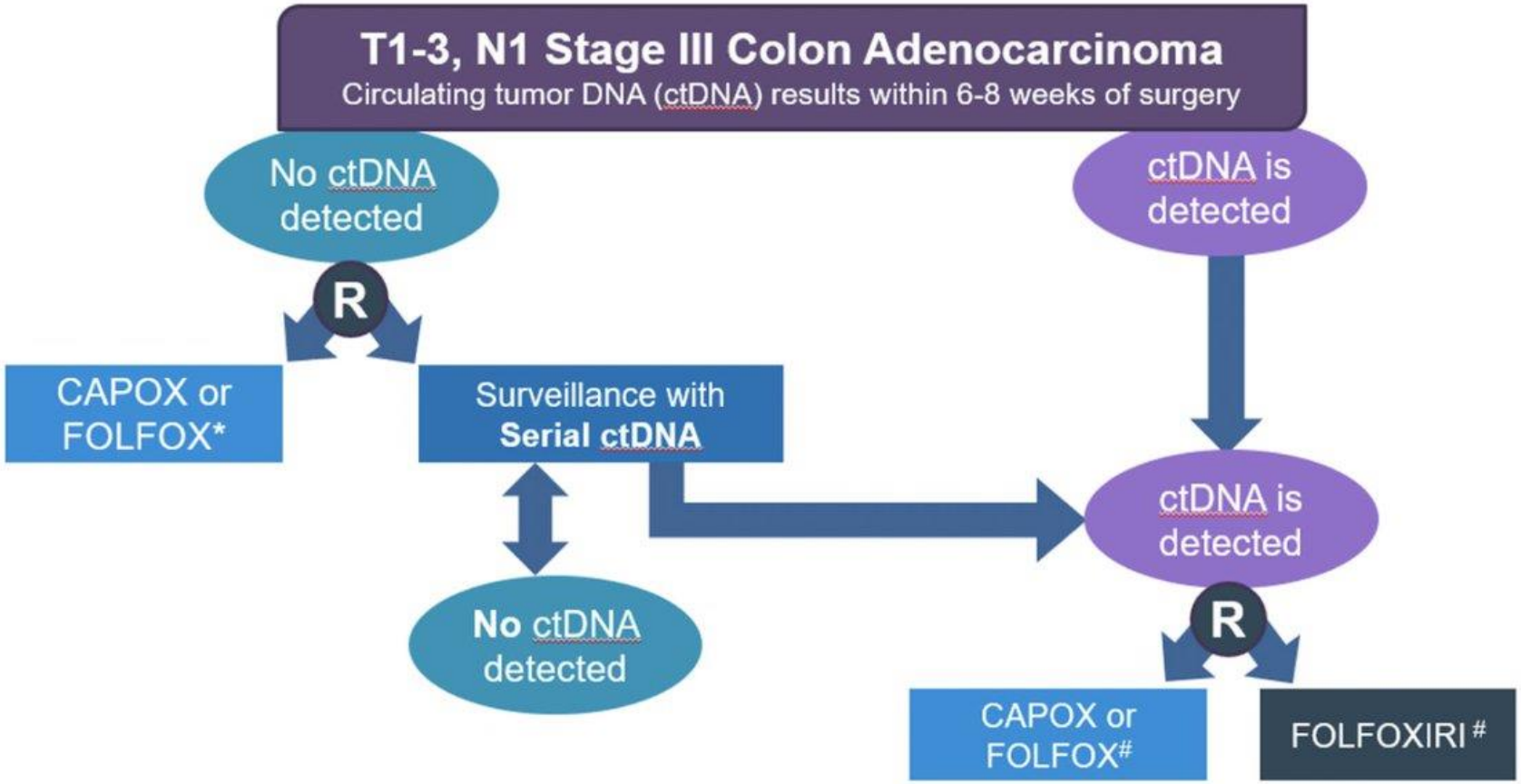
Signatera™ is optimized to detect extremely low quantities of ctDNA, and determines the presence or absence of molecular residual disease.

Ultra sensitive MRD Detection at VAFs as low as 0.01% by tracking 16 ctDNA specific markers (>99% of cases)

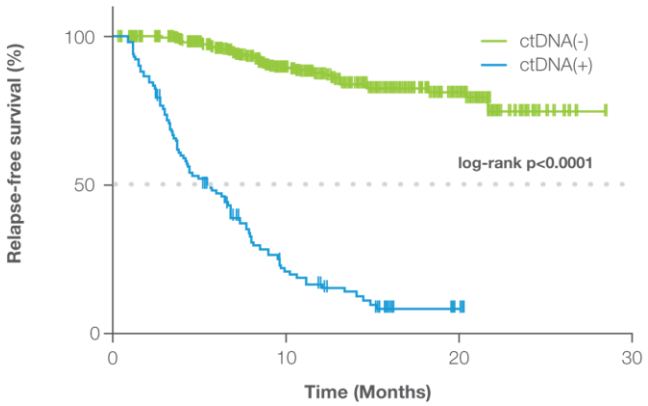


CIRCULATE-US: ctDNA-guided Adjuvant Therapy for Stage III Colon Cancer

This study is designed for patients who have recently undergone resection of their colon cancer and identified a low-risk stage III cancer defined by T-stages of 1-3 and N-stage of 1. ctDNA testing is done in the context of the trial with the Natera Signatera assay.



Tumor Informed ctDNA is the most prognostic factor for DFS and OS in resected stage II/III colon cancer



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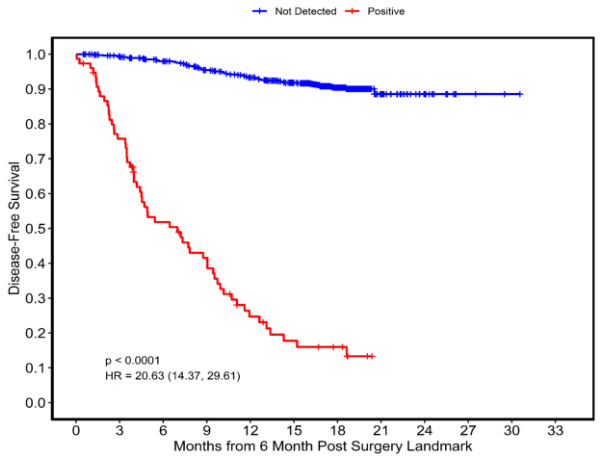
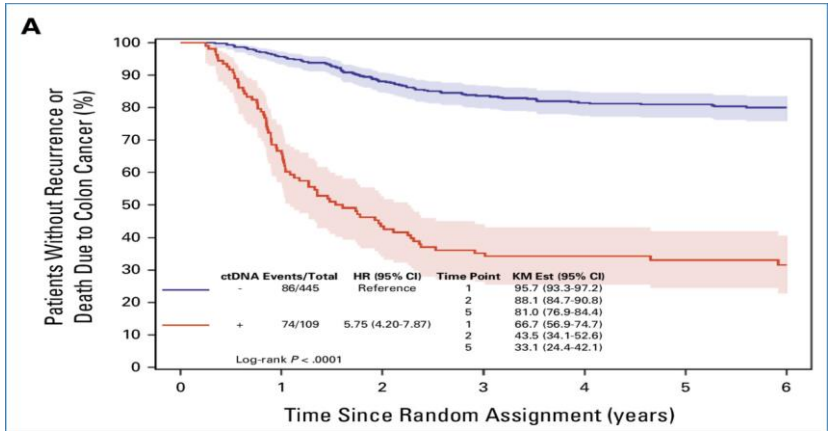
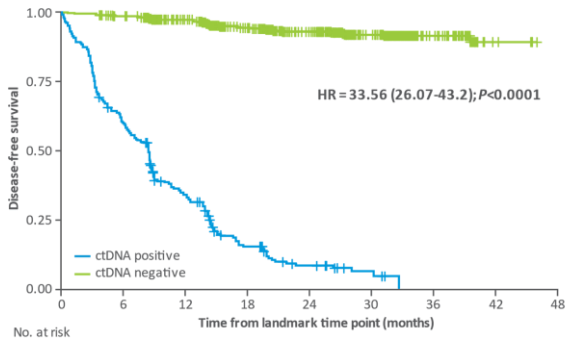


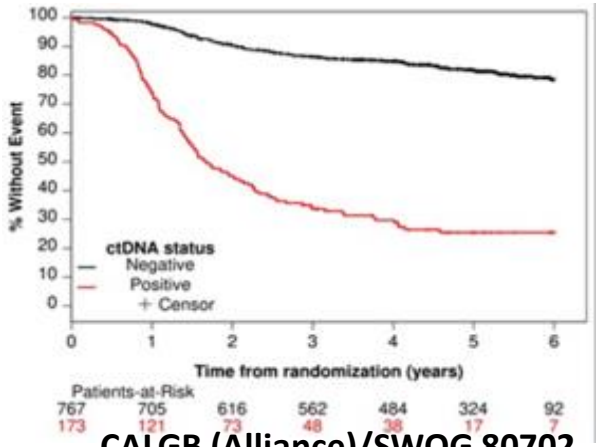
BESPOKE 2025



IDEA Fr / Gr 2025



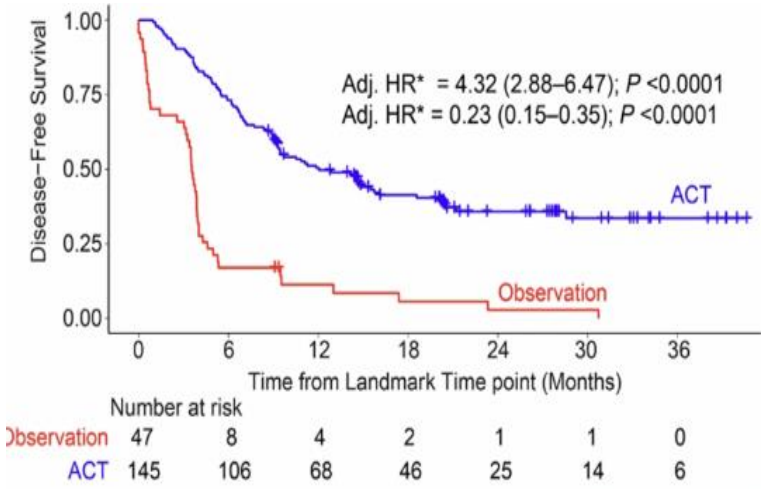
GALAXY 2024

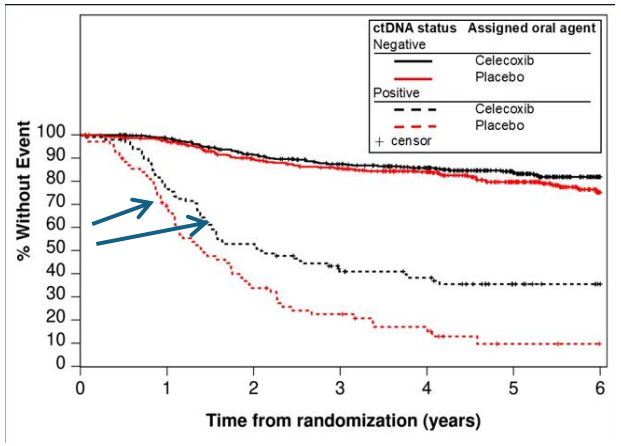


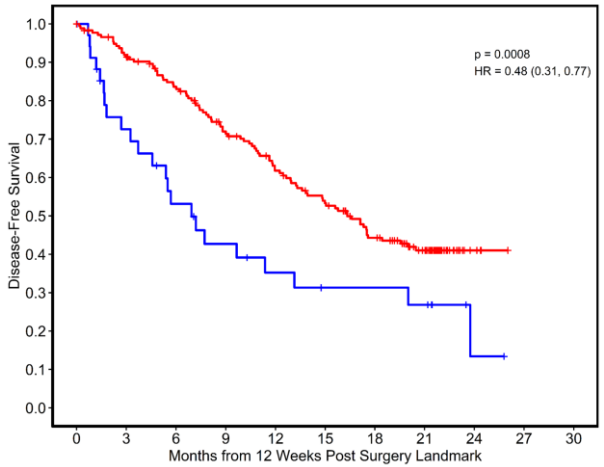
CALGB (Alliance)/SWOG 80702

Tumor informed ctDNA is the most prognostic factor in CRC, outperforming stage, CEA, high-risk features and other biomarkers

Multiple trials have consistently demonstrated benefit of Adjuvant Chemotherapy in ctDNA positive patients….



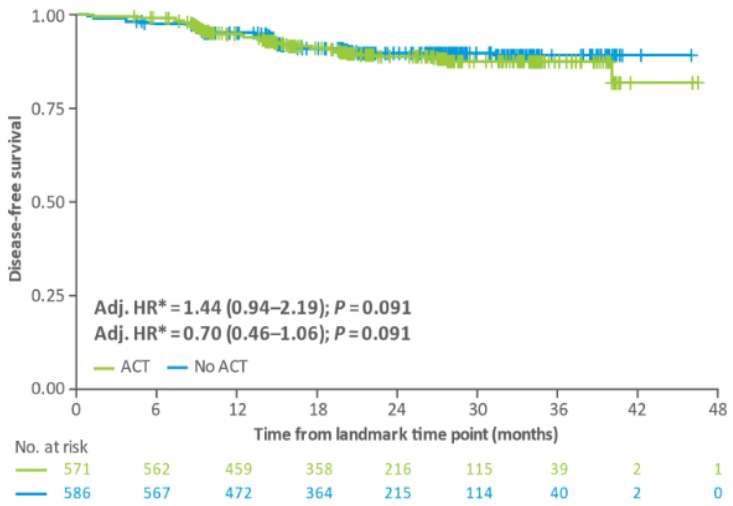




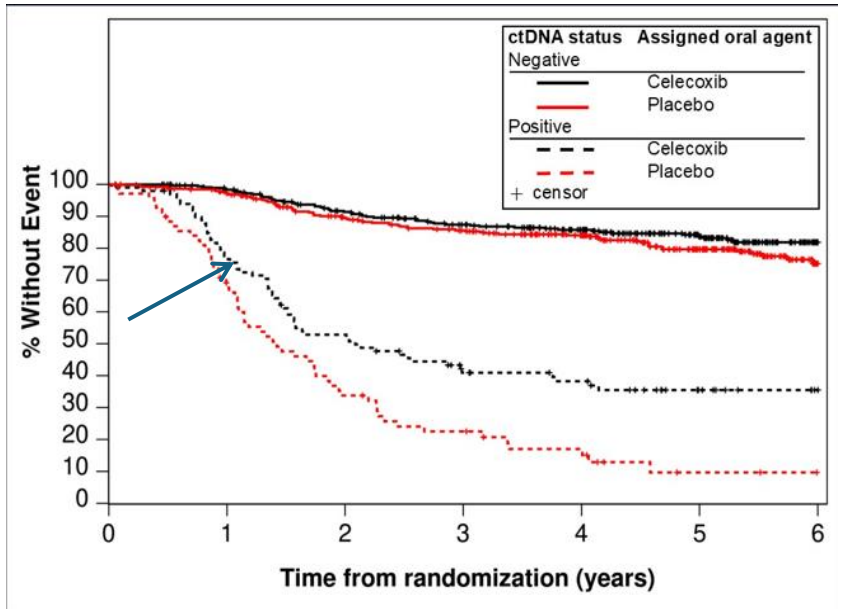
GALAXY 2024 | **CALGB (Alliance)/SWOG 80702** | **BESPOKE 2025**

	GALAXY (2-yr DFS)	CALGB 80702 (3-yr DFS)	BESPOKE (2-yr DFS)
Intervention arm	35.8%	41%	40.3%
Control arm	2.8%	22.6%	24.7%

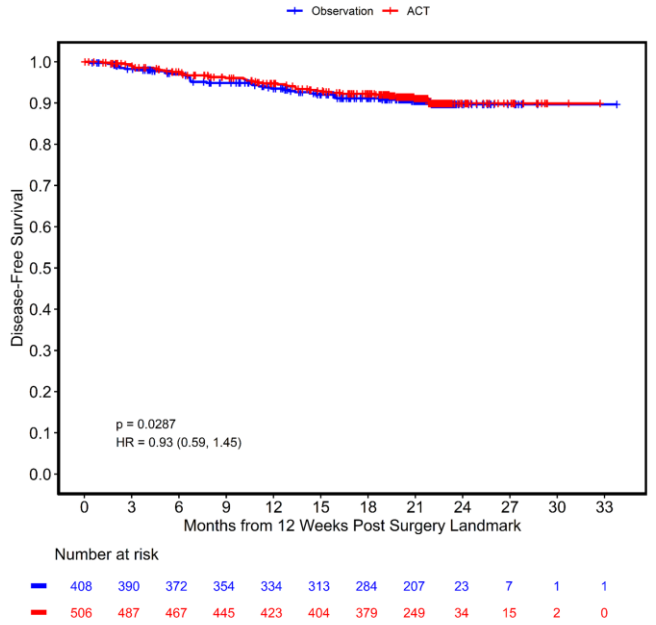
… and lack thereof ctDNA negative patients



GALAXY 2024



CALGB (Alliance)/SWOG 80702



BESPOKE 2025

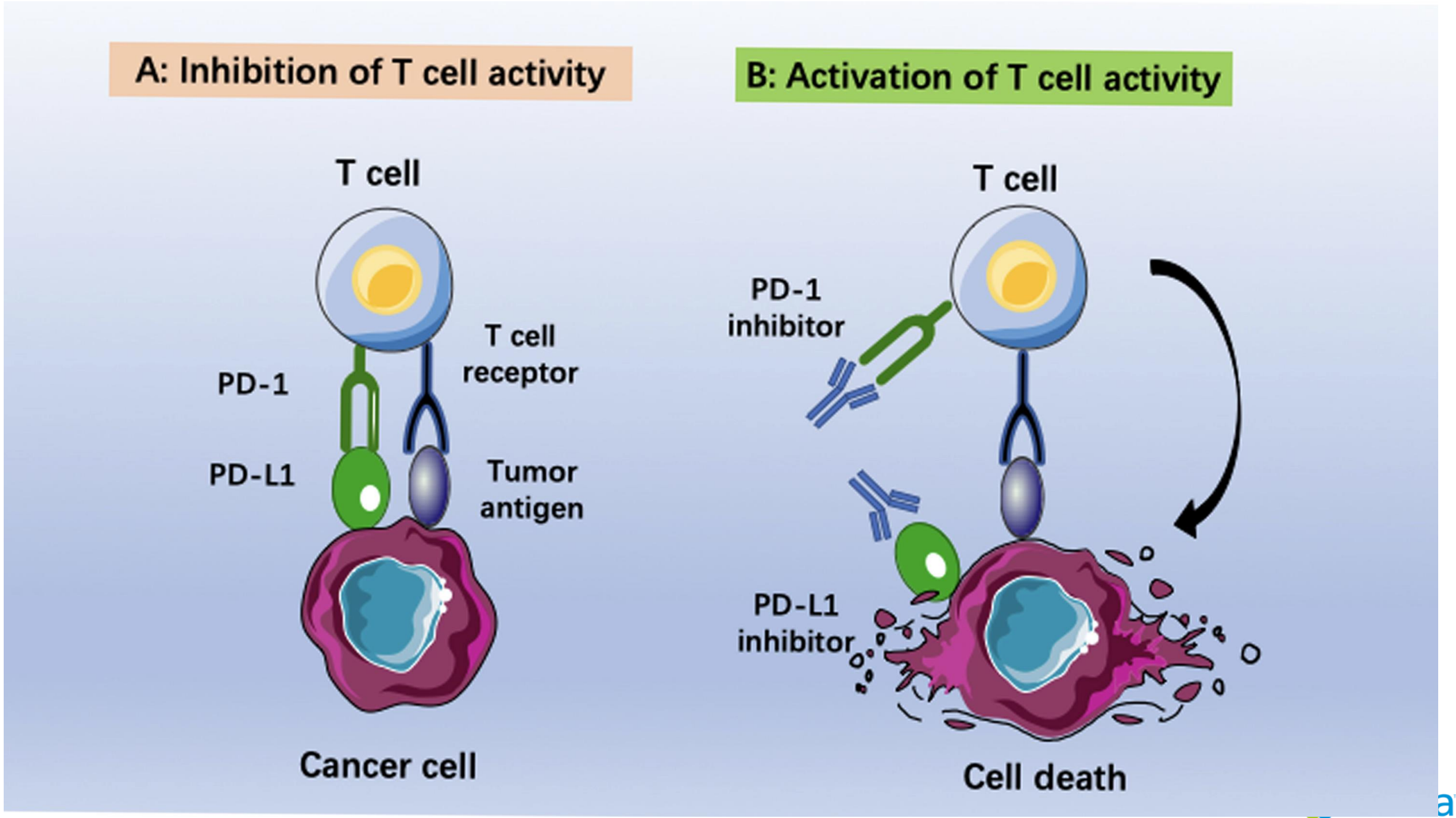
	GALAXY (2-yr DFS)	CALGB 80702 (3-yr DFS)	BESPOKE (2-yr DFS)
Intervention arm	89%	87%	89%
Control arm	89%	85%	89%

Article | Published: 03 August 2020

Personalized circulating tumor DNA analysis as a predictive biomarker in solid tumor patients treated with pembrolizumab

Scott V. Bratman, S. Y. Cindy Yang, Marco A. J. Iafolla, Zhihui Liu, Aaron R. Hansen, Philippe L. Bedard, Stephanie Lheureux, Anna Spreafico, Albiruni Abdul Razak, Svetlana Shchegrova, Maggie Louie, Paul Billings, Bernhard Zimmermann, Himanshu Sethi, Alexey Aleshin, Dax Torti, Kayla Marsh, Jenna Eagles, Iulia Cirlan, Youstina Hanna, Derek L. Clouthier, Scott C. Lien, Pamela S. Ohashi, Wei Xu, ... Trevor J. Pugh + Show authors

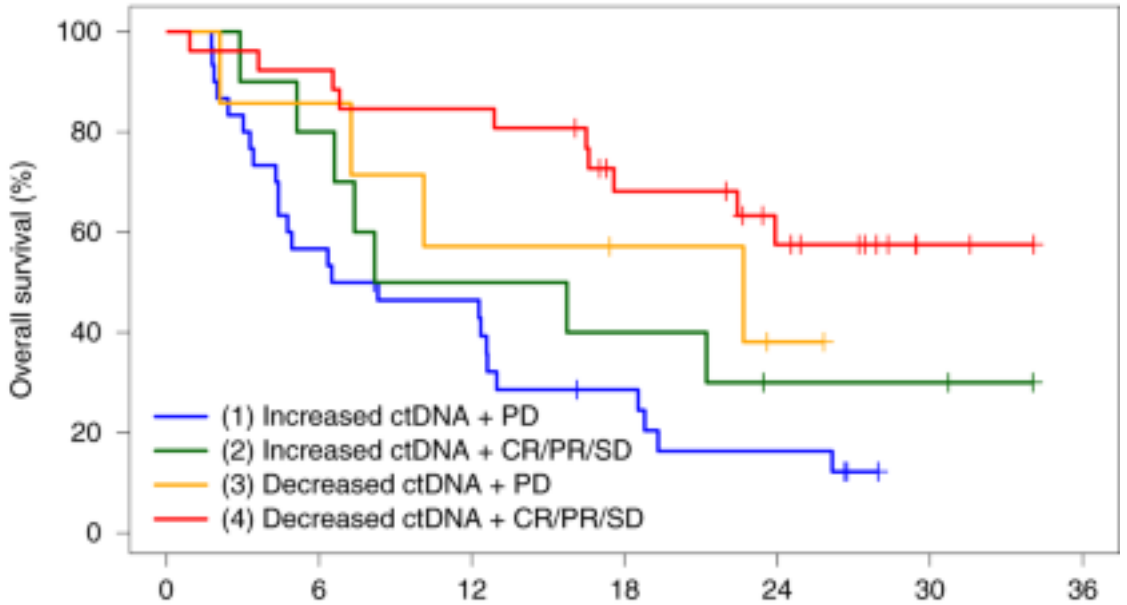
Nature Cancer **1**, 873–881 (2020) | Cite this article



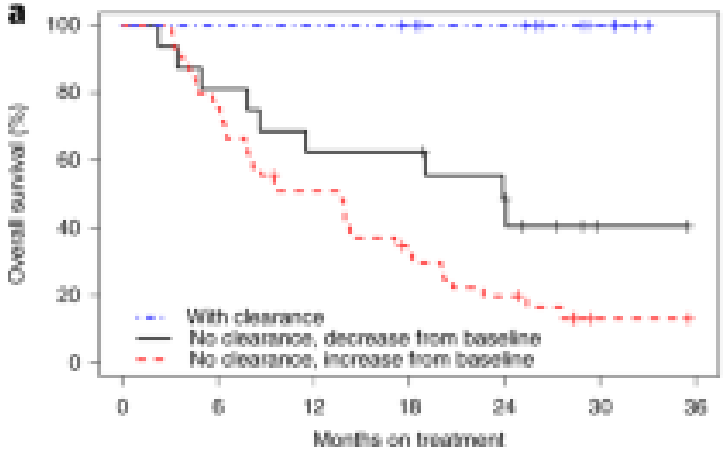
a

N = 73	Cycle 3 PD	Cycle 3 CR/PR/SD
Cycle 3 increase ctDNA	30	10
Cycle 3 decrease ctDNA	7	26

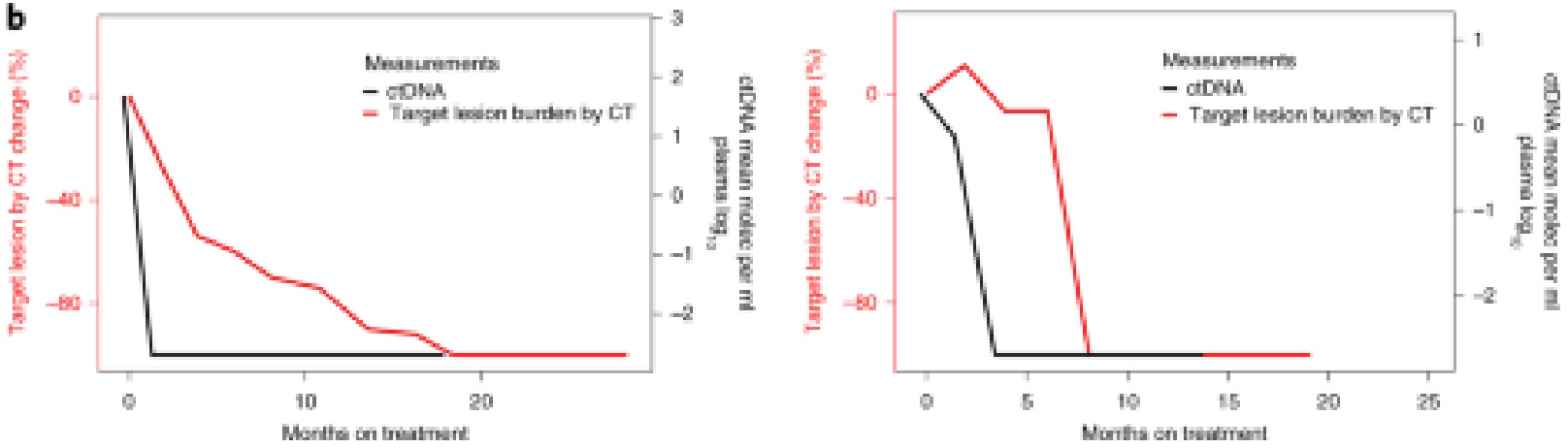
b



a



b



The NEW ENGLAND JOURNAL of MEDICINE

ESTABLISHED IN 1812 JUNE 23, 2022 VOL. 386 NO. 25

PD-1 Blockade in Mismatch Repair–Deficient, Locally Advanced Rectal Cancer

A. Cercek, M. Lumish, J. Sinopoli, J. Weiss, J. Shia, M. Lamendola-Essel, I.H. El Dika, N. Segal, M. Shcherba, R. Sugarman, Z. Stadler, R. Yaeger, J.J. Smith, B. Rousseau, G. Argiles, M. Patel, A. Desai, L.B. Saltz, M. Widmar, K. Iyer, J. Zhang, N. Gianino, C. Crane, P.B. Romesser, E.P. Pappou, P. Paty, J. Garcia-Aguilar, M. Gonen, M. Gollub, M.R. Weiser, K.A. Schalper, and L.A. Diaz, Jr.

ABSTRACT

Table 1. Demographic and Disease Characteristics of the Patients at Baseline.

Characteristic	Value
Patients enrolled — no. (%)	16 (100)
Female sex — no. (%)	10 (62)
Median age (range) — yr	54 (26–78)
Race — no. (%)*	
White	11 (69)
Asian	3 (19)
Black	2 (12)
Hispanic or Latinx ethnic group — no. (%)*	1 (6)
ECOG performance-status score — no. (%)†	
0	12 (75)
1	4 (25)
Tumor stage — no. (%)	
T1 or T2	4 (25)
T3	9 (56)
T4	3 (19)
Nodal status — no. (%)	
Positive	15 (94)
Negative	1 (6)
Median distance of tumor from anal verge (range) — cm	5 (0.9–8.9)

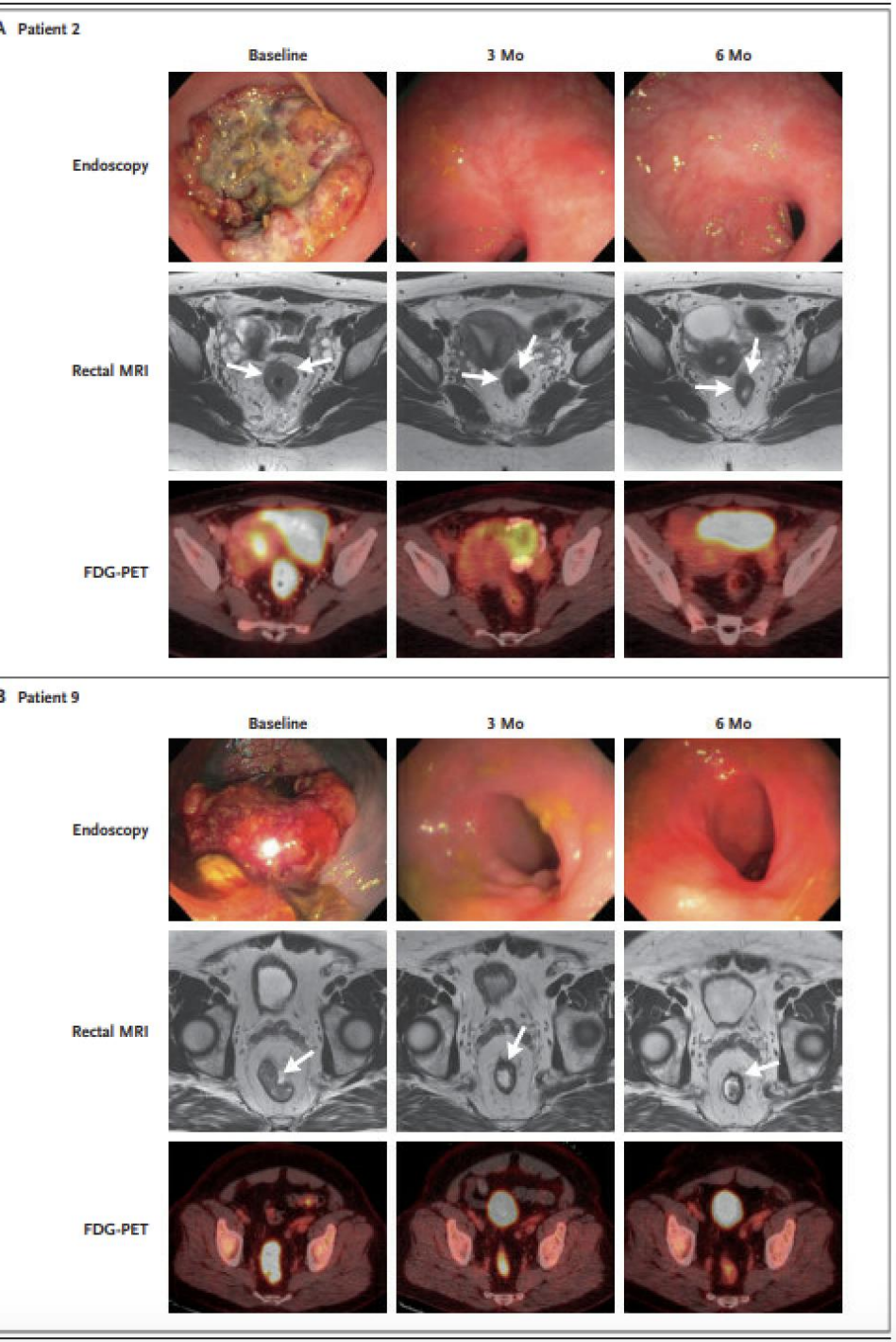
* Race and ethnic group were reported by the patient.
† The Eastern Cooperative Oncology Group (ECOG) performance-status scores range from 0 to 5, with higher scores indicating greater disability.

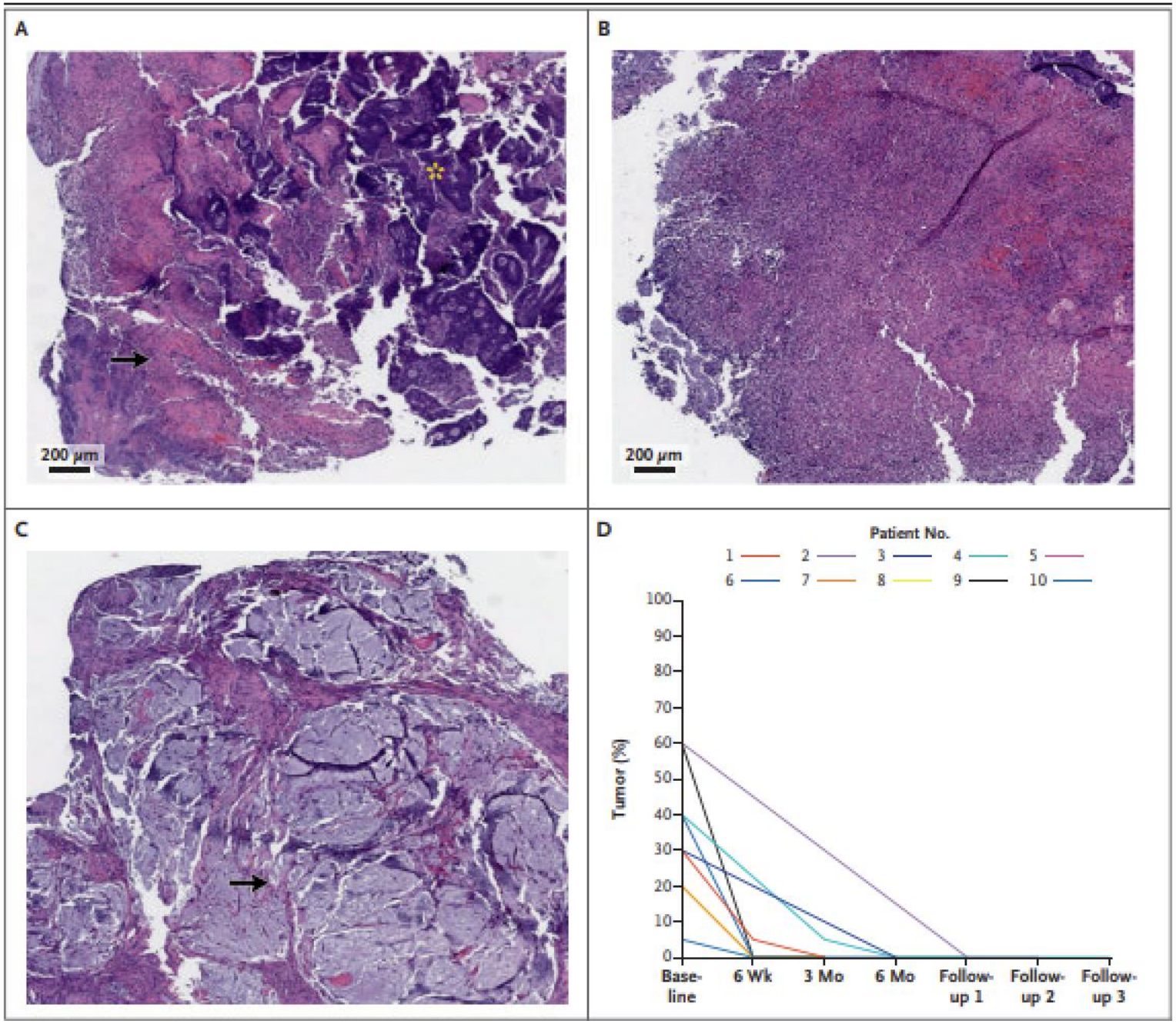
Table 2. Individual Patient Data.*

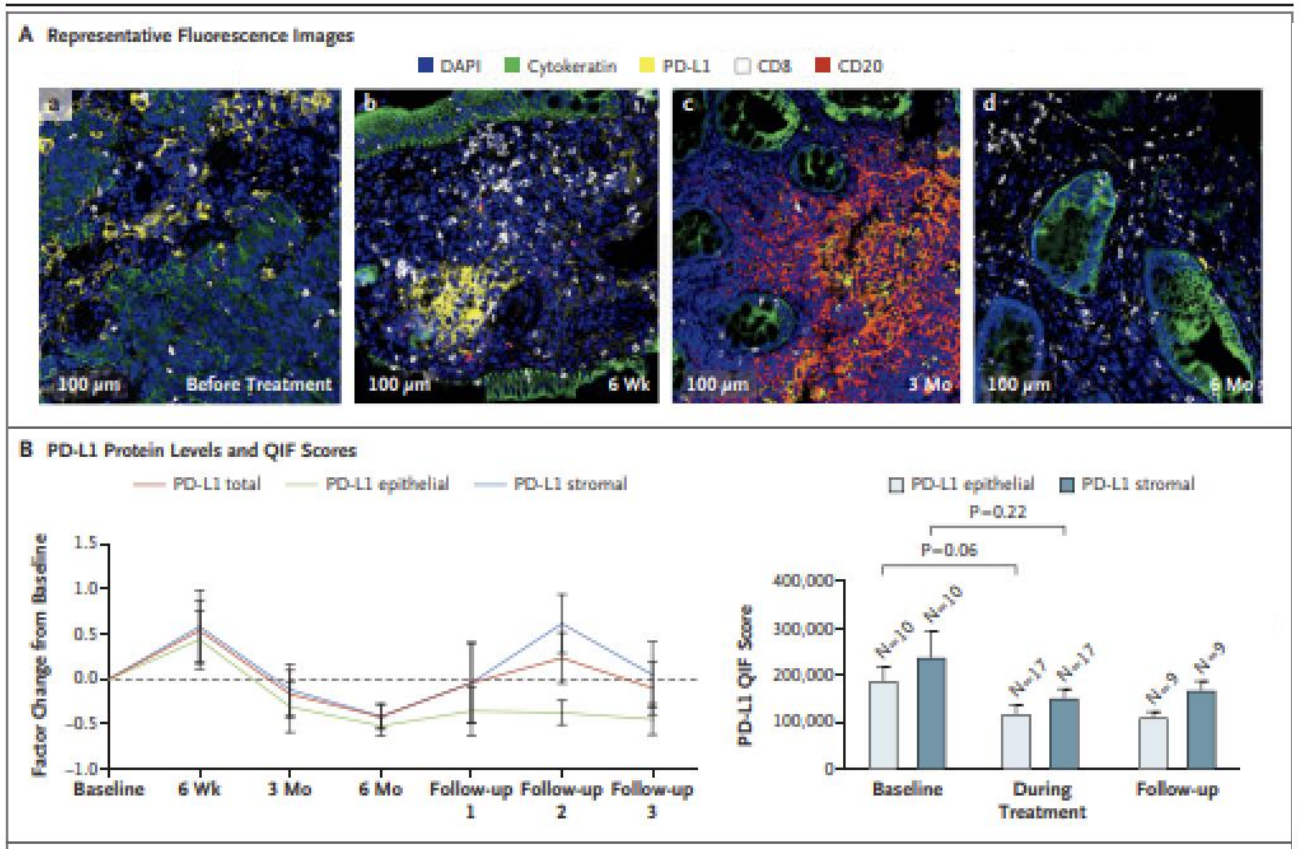
Patient No. (Sex, Age)	Tumor Stage; Nodal Status	Germline Pathogenic Variant†	Mismatch-Repair Status, Chromogenic IHC Assay	PD-L1 Level	TIL Level	*BRAF* V600E Mutation	Tumor Mutational Burden‡	Completed 6 mo of Dostarlimab Therapy	CRT or Surgery	Response on Endoscopic Visualization	Digital Examination; Endoscopic Biopsy	Response on Rectal MRI	Response on FDG-PET
1 (F, 38 yr)	T4; positive	*MSH2* (c.687delA)	MSH2 and MSH6 absent	+	+++	No	88.6	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
2 (F, 30 yr)	T3; positive	*MSH2* (c.8942+3A→T)	MSH2 and MSH6 absent	++	+	No	45.6	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
3 (F, 61 yr)	T1 to T2; positive	None	MSH2 and MSH6 absent	+++	+++	No	62.3	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
4 (F, 28 yr)	T4; positive	None	MSH2 and MSH6 absent	+	++	No	65.0	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
5 (F, 53 yr)	T1 to T2; positive	*MSH2* (c.942+3A→T)	MSH2 absent	+	+	No	103.0	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
6 (F, 77 yr)	T1 to T2; positive	*MSH6* (c.1969delC)	MSH6 absent	+++	+++	No	93.9	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
7 (F, 77 yr)	T1 to T2; positive	None	MLH1 and PMS2 absent	++	++	No	75.0	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
8 (F, 55 yr)	T3; positive	*MSH2* (c.1784T→G)	MSH2 absent	++	+	No	78.3	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR

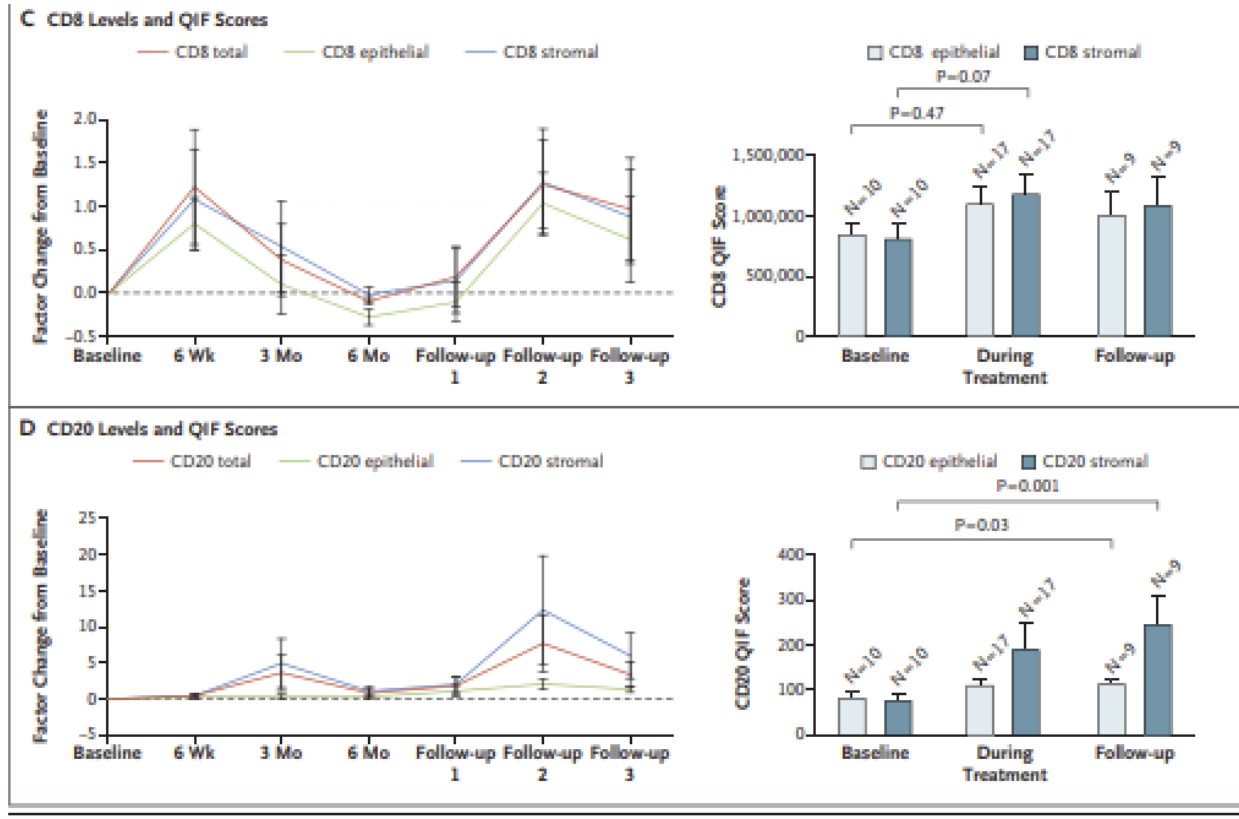
9 (M, 68 yr)	T3; positive	None	MSH2 and MSH6 absent	+++	++	No	62.6	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
10 (F, 78 yr)	T3; negative	None	MLH1 and PMS2 absent	+	+	No	37.9	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
11 (F, 55 yr)	T3; positive	*PMS2* (c.2500_2501delinsG)	MSH2 and MSH6 absent	++	++	No	52.7	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
12 (M, 27 yr)	T3; positive	None	PMS2 absent	+++	+++	No	54.4	Yes	No	CR	No palpable tumor; negative for tumor	CR	CR
13 (M, 26 yr)	T3; positive	*MLH1* (c.1489dupC)	MLH1 and PMS2 absent	NA	NA	No	47.8	No; ongoing, 12 wk	No	CR	No palpable tumor; negative for tumor	CR at 3 mo	CR
14 (M, 43 yr)	T3; positive	*MSH6* (c.3476dupA)	MSH6 absent	NA	NA	No	74.1	No; ongoing, 12 wk	No	CR	No palpable tumor; negative for tumor	Near-CR at 3 mo	CR
15 (M, 59 yr)	T3; positive	NA	PMS2 absent	NA	NA	NA	NA	No; ongoing, 5 wk	No	NE	NE; NE	NE	NE
16 (M, 51 yr)	T4b; positive	NA	MSH2 absent	NA	NA	NA	NA	No; ongoing, 3 wk	No	NE	NE; NE	NE	NE

* CR denotes complete response, CRT chemoradiotherapy, FDG-PET ^{18}F-fluorodeoxyglucose–positron-emission tomography, IHC immunohistochemical, NA not available, NE not able to be evaluated, PD-L1 programmed death ligand 1, and TIL tumor-infiltrating lymphocyte.
† All alterations identified are associated with the Lynch syndrome.
‡ Units are reported in mutations per megabase.


A Patient 2
Baseline
3 Mo
6 Mo
Endoscopy
Rectal MRI
FDG-PET
B Patient 9
Baseline
3 Mo
6 Mo
Endoscopy
Rectal MRI
FDG-PET


A
200 μm
B
200 μm
C
D
Patient No.
1
2
3
4
5
6
7
8
9
10
Tumor (%)
100
90
80
70
60
50
40
30
20
10
0
Base-line
6 Wk
3 Mo
6 Mo
Follow-up 1
Follow-up 2
Follow-up 3


A Representative Fluorescence Images
DAPI
Cytokeratin
PD-L1
CD8
CD20
a
100 μm
Before Treatment
b
100 μm
6 Wk
c
100 μm
3 Mo
d
100 μm
6 Mo
B PD-L1 Protein Levels and QIF Scores
PD-L1 total
PD-L1 epithelial
PD-L1 stromal
Factor Change from Baseline
Baseline
6 Wk
3 Mo
6 Mo
Follow-up 1
Follow-up 2
Follow-up 3
PD-L1 epithelial
PD-L1 stromal
P=0.22
P=0.06
PD-L1 QIF Score
N=10
N=10
N=17
N=17
N=9
N=9
Baseline
During Treatment
Follow-up


C CD8 Levels and QIF Scores
CD8 total
CD8 epithelial
CD8 stromal
Factor Change from Baseline
Baseline
6 Wk
3 Mo
6 Mo
Follow-up 1
Follow-up 2
Follow-up 3
CD8 epithelial
CD8 stromal
P=0.07
P=0.47
CD8 QIF Score
N=10
N=10
N=17
N=17
N=9
N=9
Baseline
During Treatment
Follow-up
D CD20 Levels and QIF Scores
CD20 total
CD20 epithelial
CD20 stromal
Factor Change from Baseline
CD20 epithelial
CD20 stromal
P=0.001
P=0.03
CD20 QIF Score

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Neoadjuvant Immunotherapy in Locally Advanced Mismatch Repair–Deficient Colon Cancer

Myriam Chalabi, M.D., Ph.D., Yara L. Verschoor, M.D., Pedro Batista Tan, M.Sc., Sara Balduzzi, Ph.D., Anja U. Van Lent, M.D., Ph.D., Cecile Grootscholten, M.D., Ph.D., Simone Dokter, M.Sc., Nikè V. Büller, M.D., Ph.D., Brechtje A. Grotenhuis, M.D., Ph.D., Koert Kuhlmann, M.D., Ph.D., Jacobus W. Burger, M.D., Ph.D., Inge L. Huibregtse, M.D., Ph.D., Tjeerd S. Aukema, M.D., Ph.D., Eduard R. Hendriks, M.D., Steven J. Oosterling, M.D., Ph.D., Petur Snaebjornsson, M.D., Ph.D., Emile E. Voest, M.D., Ph.D., Lodewyk F. Wessels, Ph.D., Regina G. Beets-Tan, M.D., Ph.D., Monique E. Van Leerdam, M.D., Ph.D., Ton N. Schumacher, Ph.D., José G. van den Berg, M.D., Ph.D., Geerard L. Beets, M.D., Ph.D., and John B. Haanen, M.D., Ph.D.

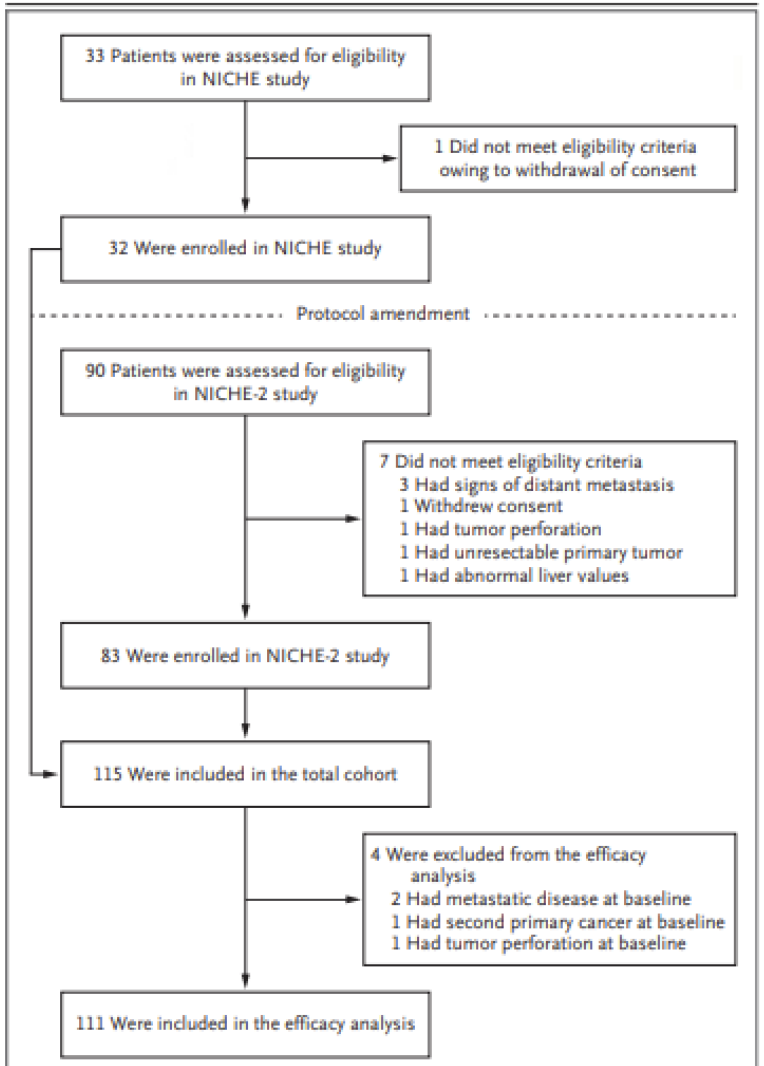


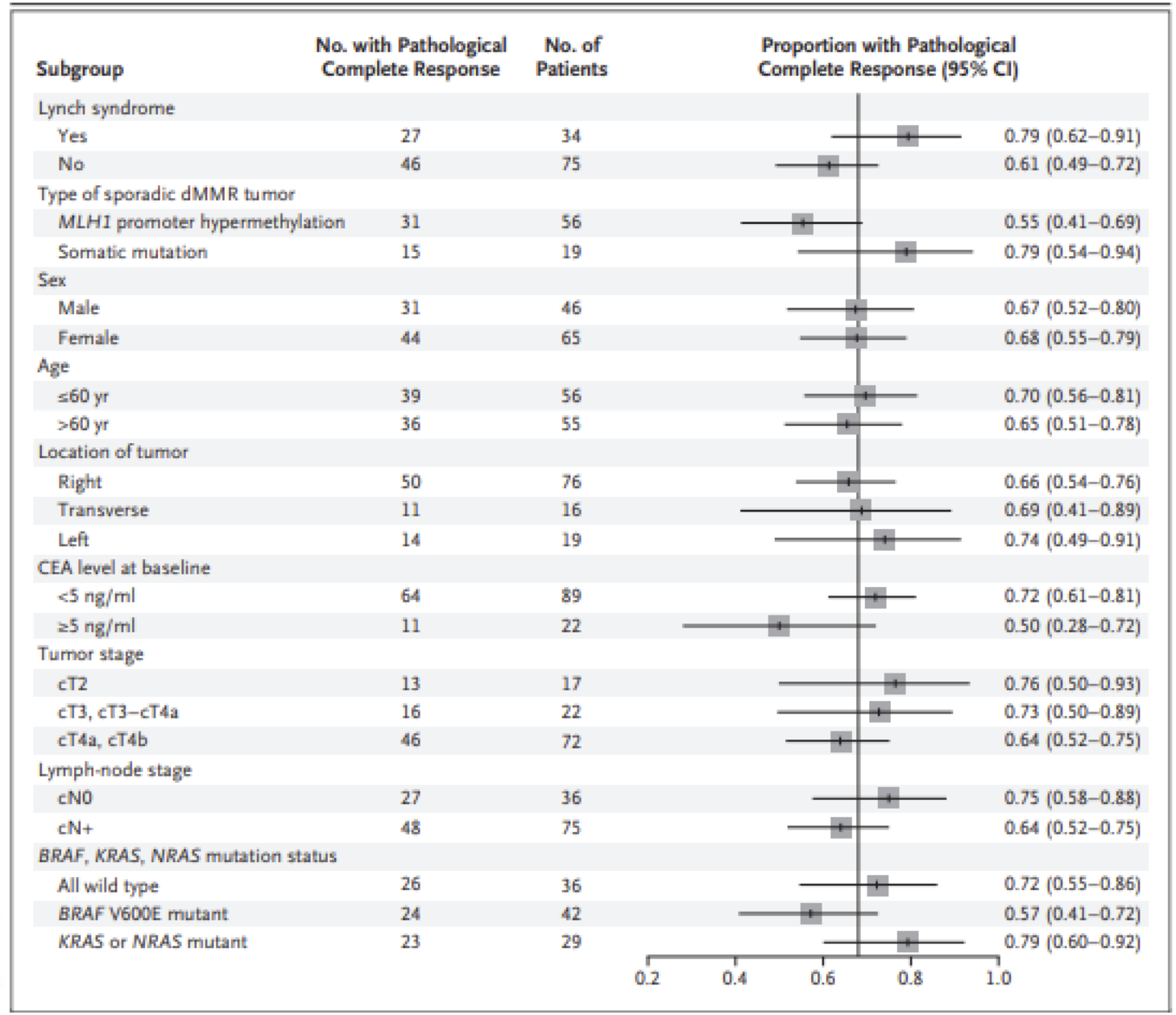
Figure 1. Screening and Enrollment, before and after Protocol Amendment.
A total of 115 patients with mismatch repair–deficient colon cancer were enrolled. A total of 32 patients were enrolled in the NICHE cohort. A protocol amendment in October 2020 then led to the enrollment of 83 patients in the NICHE-2 cohort, in which patients were eligible if they had disease classified by radiographic assessment as cT3 or higher, N+, or both according to the American Joint Committee on Cancer tumor–node–metastasis (TNM) staging system, version 8, in which T refers to the size and extent of the tumor (with higher numbers indicating greater advancement) and N+ indicates that cancer is present in the lymph nodes.

Table 1. Demographic and Disease Characteristics of the Patients.

Characteristic	Patients (N=115)
Female sex — no. (%)	67 (58)
Median age (range) — yr	60 (20–82)
WHO performance-status score — no. (%)*	
0	100 (87)
1	15 (13)
Race or ethnic group — no. (%)†	
White	97 (84)
Asian	6 (5)
Black	5 (4)
Other	7 (6)
Tumor stage — no. (%)‡	
cT2	17 (15)
cT3 or cT3–T4a	24 (21)
cT4a	41 (36)
cT4b	33 (29)
Nodal status — no. (%)§	
cN–	38 (33)
cN+	77 (67)
Primary tumor location — no. (%)	
Right	78 (68)
Transverse	17 (15)
Left	20 (17)
Lynch syndrome — no. (%)	37 (32)
Unexplained dMMR — no. (%)¶	2 (2)
Non–Lynch syndrome dMMR — no. (%)	76 (66)

Table 2. Pathological Responses among Patients in the Efficacy Analysis.*

Residual Viable Tumor	Patients (N = 111)
	no. (%)
≤50% Residual viable tumor	109 (98)
≤10% Residual viable tumor: major pathological response	105 (95)
0% Residual viable tumor: complete pathological response	75 (68)
11–49% Residual viable tumor: partial pathological response	4 (4)
≥50% Residual viable tumor, indicating lack of pathological response	1 (1)
Unable to be evaluated†	1 (1)



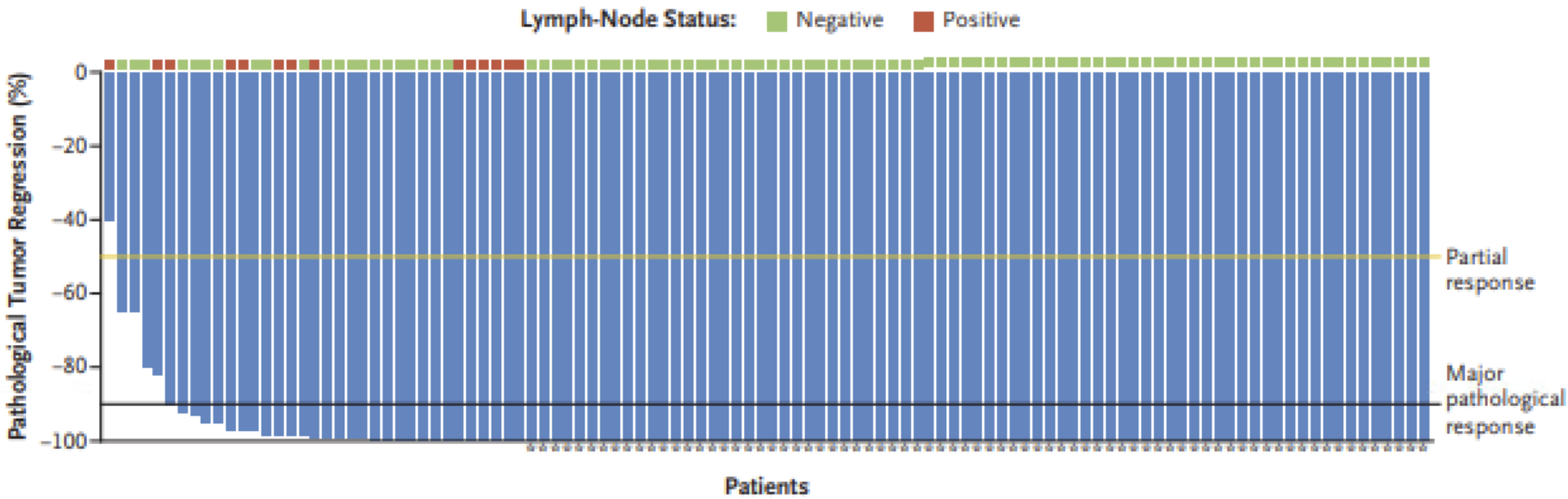
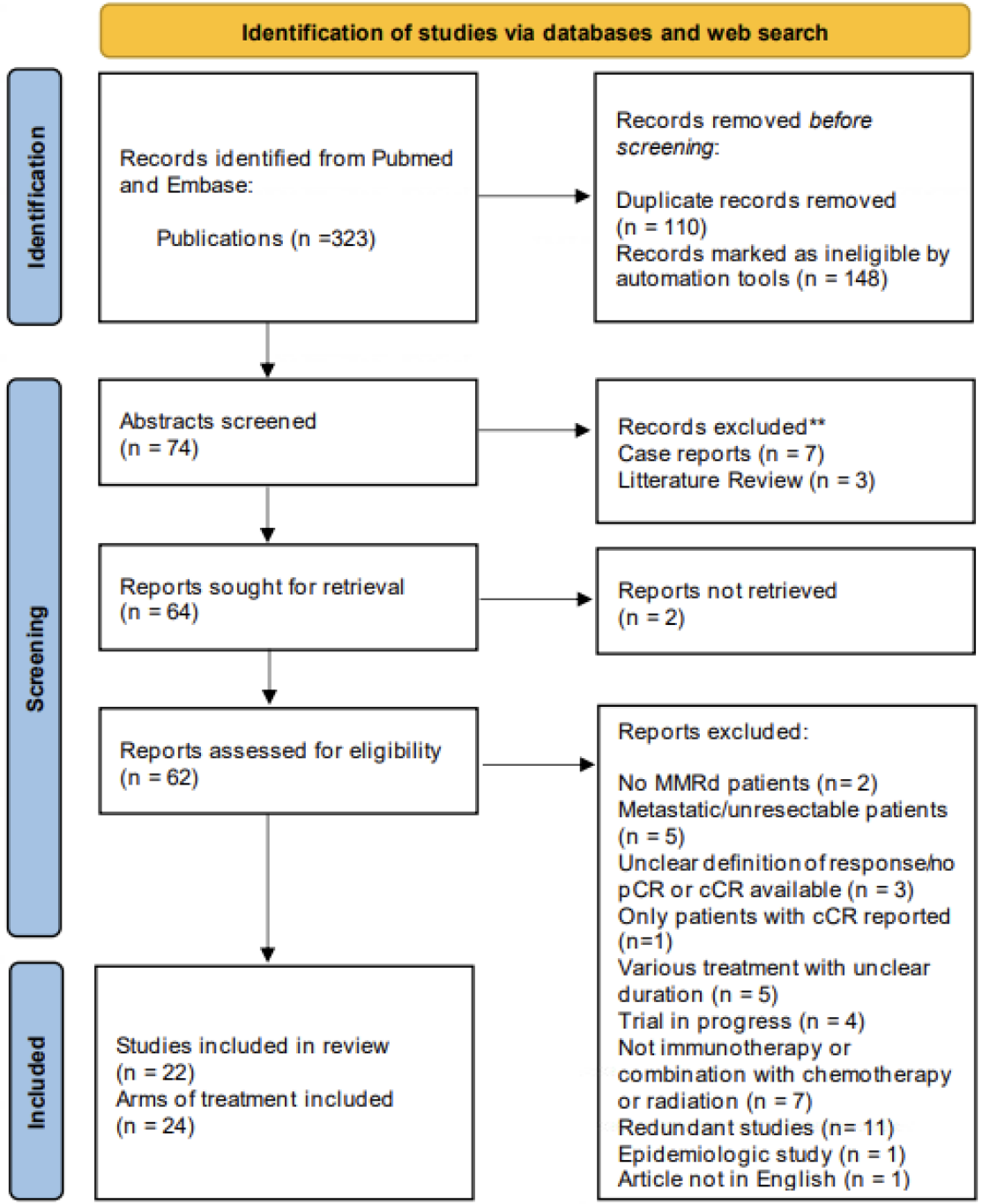


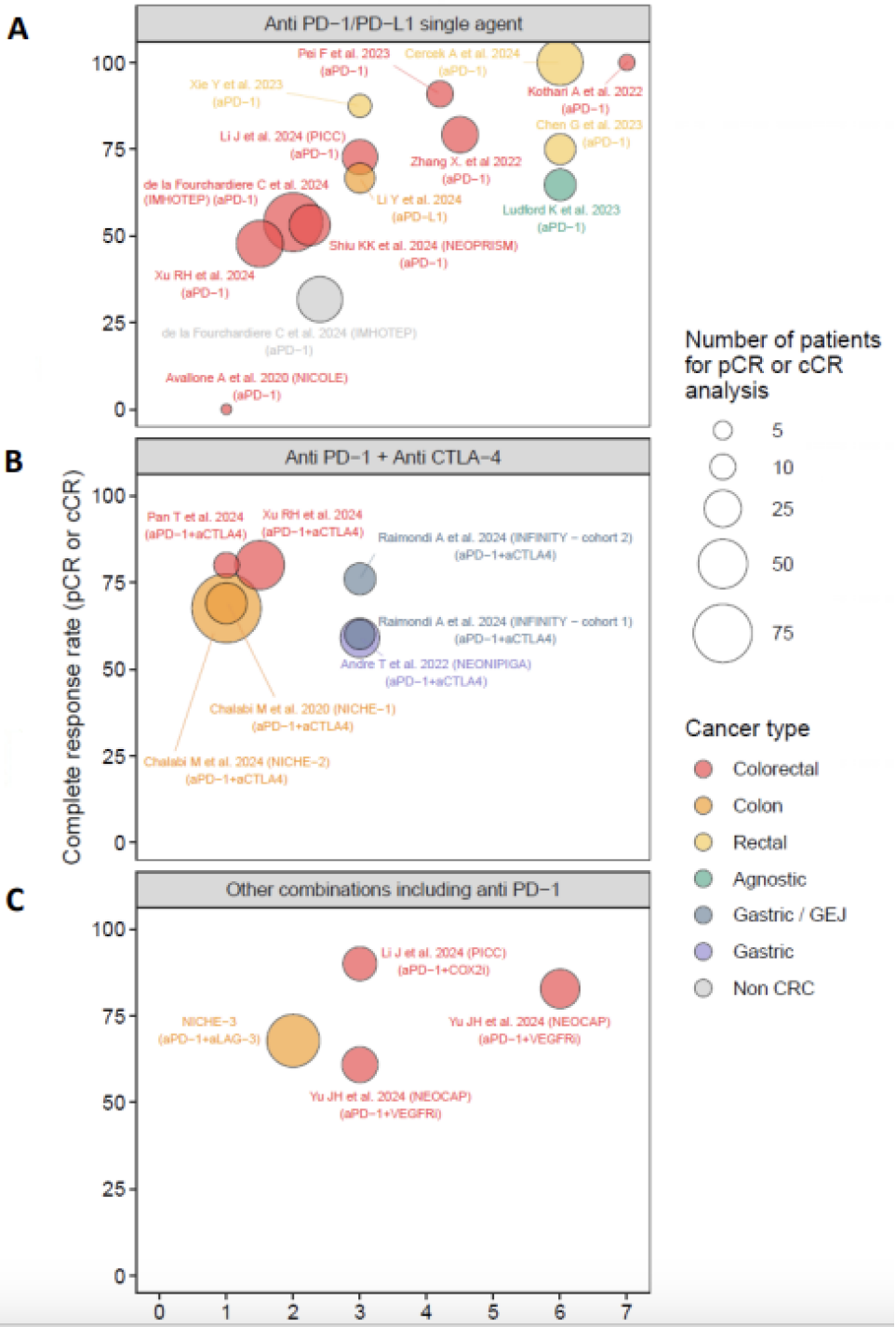
Figure 2. Pathological Responses among Patients in the Efficacy Analysis.

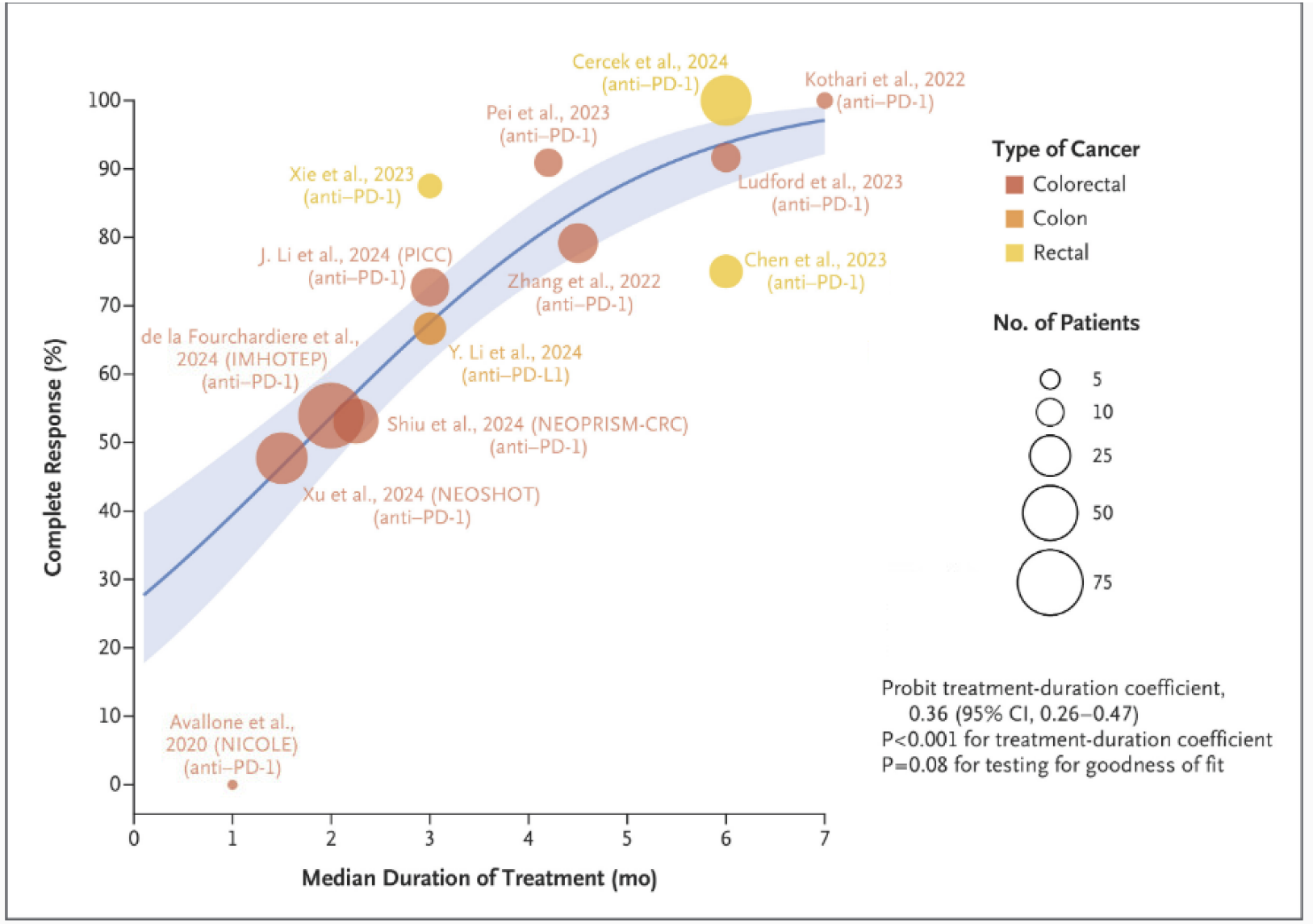
The waterfall plot shows the percentage of pathological tumor regression per tumor among the 110 tumors that could be evaluated for a pathological response. Boxes above each bar indicate the corresponding pathological lymph-node status. Patients with a pathological complete response in both the primary tumor and the lymph nodes are indicated by an asterisk. The black horizontal line indicates the threshold for a major pathological response, specified as at least 90% tumor regression. The yellow line indicates the threshold for a partial response, specified as at least a 50% regression.

CORRESPONDENCE

The Duration of Immunotherapy for Mismatch Repair–Deficient Cancers


Identification of studies via databases and web search
Identification
Records identified from Pubmed and Embase:
Publications (n =323)
Records removed *before screening*:
Duplicate records removed (n = 110)
Records marked as ineligible by automation tools (n = 148)
Screening
Abstracts screened (n = 74)
Records excluded**
Case reports (n = 7)
Litterature Review (n = 3)
Reports sought for retrieval (n = 64)
Reports not retrieved (n = 2)
Reports assessed for eligibility (n = 62)
Reports excluded:
No MMRd patients (n= 2)
Metastatic/unresectable patients (n = 5)
Unclear definition of response/ho pCR or cCR available (n = 3)
Only patients with cCR reported (n=1)
Various treatment with unclear duration (n = 5)
Trial in progress (n = 4)
Not immunotherapy or combination with chemotherapy or radiation (n = 7)
Redundant studies (n= 11)
Epidemiologic study (n = 1)
Article not in English (n = 1)
Included
Studies included in review (n = 22)
Arms of treatment included (n = 24)


A
Anti PD−1/PD−L1 single agent
Pei F et al. 2023 (aPD−1)
Cercek A et al. 2024 (aPD−1)
Xie Y et al. 2023 (aPD−1)
Kothari A et al. 2022 (aPD−1)
Chen G et al. 2023 (aPD−1)
Li J et al. 2024 (PICC) (aPD−1)
Zhang X. et al 2022 (aPD−1)
de la Fourchardiere C et al. 2024 (IMHOTEP) (aPD-1)
Li Y et al. 2024 (aPD−L1)
Ludford K et al. 2023 (aPD−1)
Shiu KK et al. 2024 (NEOPRISM) (aPD−1)
Xu RH et al. 2024 (aPD−1)
de la Fourchardiere C et al. 2024 (IMHOTEP) (aPD−1)
Avallone A et al. 2020 (NICOLE) (aPD−1)
B
Anti PD−1 + Anti CTLA−4
Complete response rate (pCR or cCR)
Pan T et al. 2024 (aPD−1+aCTLA4)
Xu RH et al. 2024 (aPD−1+aCTLA4)
Raimondi A et al. 2024 (INFINITY − cohort 2) (aPD−1+aCTLA4)
Raimondi A et al. 2024 (INFINITY − cohort 1) (aPD−1+aCTLA4)
André T et al. 2022 (NEONIPIGA) (aPD−1+aCTLA4)
Chalabi M et al. 2020 (NICHE−1) (aPD−1+aCTLA4)
Chalabi M et al. 2024 (NICHE−2) (aPD−1+aCTLA4)
C
Other combinations including anti PD−1
Li J et al. 2024 (PICC) (aPD−1+COX2i)
Yu JH et al. 2024 (NEOCAP) (aPD−1+VEGFRi)
NICHE−3 (aPD−1+aLAG−3)
Yu JH et al. 2024 (NEOCAP) (aPD−1+VEGFRi)
0
25
50
75
100
0
1
2
3
4
5
6
7
Number of patients for pCR or cCR analysis
5
10
25
50
75
Cancer type
Colorectal
Colon
Rectal
Agnostic
Gastric / GEJ
Gastric
Non CRC


Cercek et al., 2024 (anti–PD-1)
Kothari et al., 2022 (anti–PD-1)
Pei et al., 2023 (anti–PD-1)
Xie et al., 2023 (anti–PD-1)
Ludford et al., 2023 (anti–PD-1)
J. Li et al., 2024 (PICC) (anti–PD-1)
Chen et al., 2023 (anti–PD-1)
Zhang et al., 2022 (anti–PD-1)
de la Fourchardiere et al., 2024 (IMHOTEP) (anti–PD-1)
Y. Li et al., 2024 (anti–PD-L1)
Shiu et al., 2024 (NEOPRISM-CRC) (anti–PD-1)
Xu et al., 2024 (NEOSHOT) (anti–PD-1)
Avallone et al., 2020 (NICOLE) (anti–PD-1)
Complete Response (%)
Median Duration of Treatment (mo)
Type of Cancer
Colorectal
Colon
Rectal
No. of Patients
5
10
25
50
75
Probit treatment-duration coefficient, 0.36 (95% CI, 0.26–0.47)
P<0.001 for treatment-duration coefficient
P=0.08 for testing for goodness of fit