Young Onset Colorectal Cancer

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Disclosures

- I do not have any relevant financial relationships.

This presentation and/or comments will provide a balanced, non-promotional, and evidence-based approach to all diagnostic, therapeutic and/or research related content.

Cultural Linguistic Competency (CLC) & Implicit Bias (IB)

STATE LAW:

The California legislature has passed Assembly Bill (AB) 1195, which states that as of July 1, 2006, all Category 1 CME activities that relate to patient care must include a cultural diversity/linguistics component. It has also passed AB 241, which states that as of January 1, 2022, all continuing education courses for a physician and surgeon **must** contain curriculum that includes specified instruction in the understanding of implicit bias in medical treatment.

The cultural and linguistic competency (CLC) and implicit bias (IB) definitions reiterate how patients' diverse backgrounds may impact their access to care.

EXEMPTION:

Business and Professions Code 2190.1 exempts activities which are dedicated solely to research or other issues that do not contain a direct patient care component.

The following CLC & IB components will be addressed in this presentation:

- Young adults have a special need for attention to fertility issues and certain survivorship issues are more relevant to this population.
- Lack of personalization of care to the needs of this population.

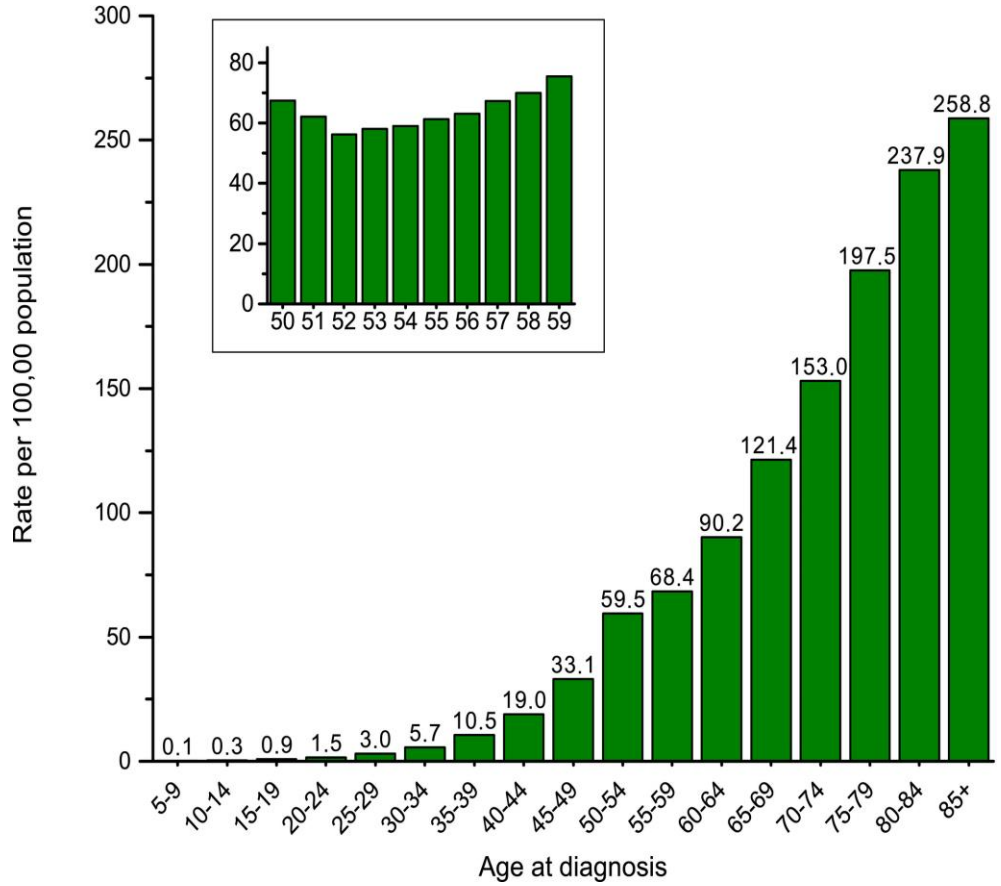
Epidemiology

Estimated New Cases

Males			Females		
Prostate	268,490	27%	Breast	287,850	31%
Lung & bronchus	117,910	12%	Lung & bronchus	118,830	13%
Colon & rectum	80,690	8%	Colon & rectum	70,340	8%
Urinary bladder	61,700	6%	Uterine corpus	65,950	7%
Melanoma of the skin	57,180	6%	Melanoma of the skin	42,600	5%
Kidney & renal pelvis	50,290	5%	Non-Hodgkin lymphoma	36,350	4%
Non-Hodgkin lymphoma	44,120	4%	Thyroid	31,940	3%
Oral cavity & pharynx	38,700	4%	Pancreas	29,240	3%
Leukemia	35,810	4%	Kidney & renal pelvis	28,710	3%
Pancreas	32,970	3%	Leukemia	24,840	3%
All Sites	**983,160**	**100%**	**All Sites**	**934,870**	**100%**

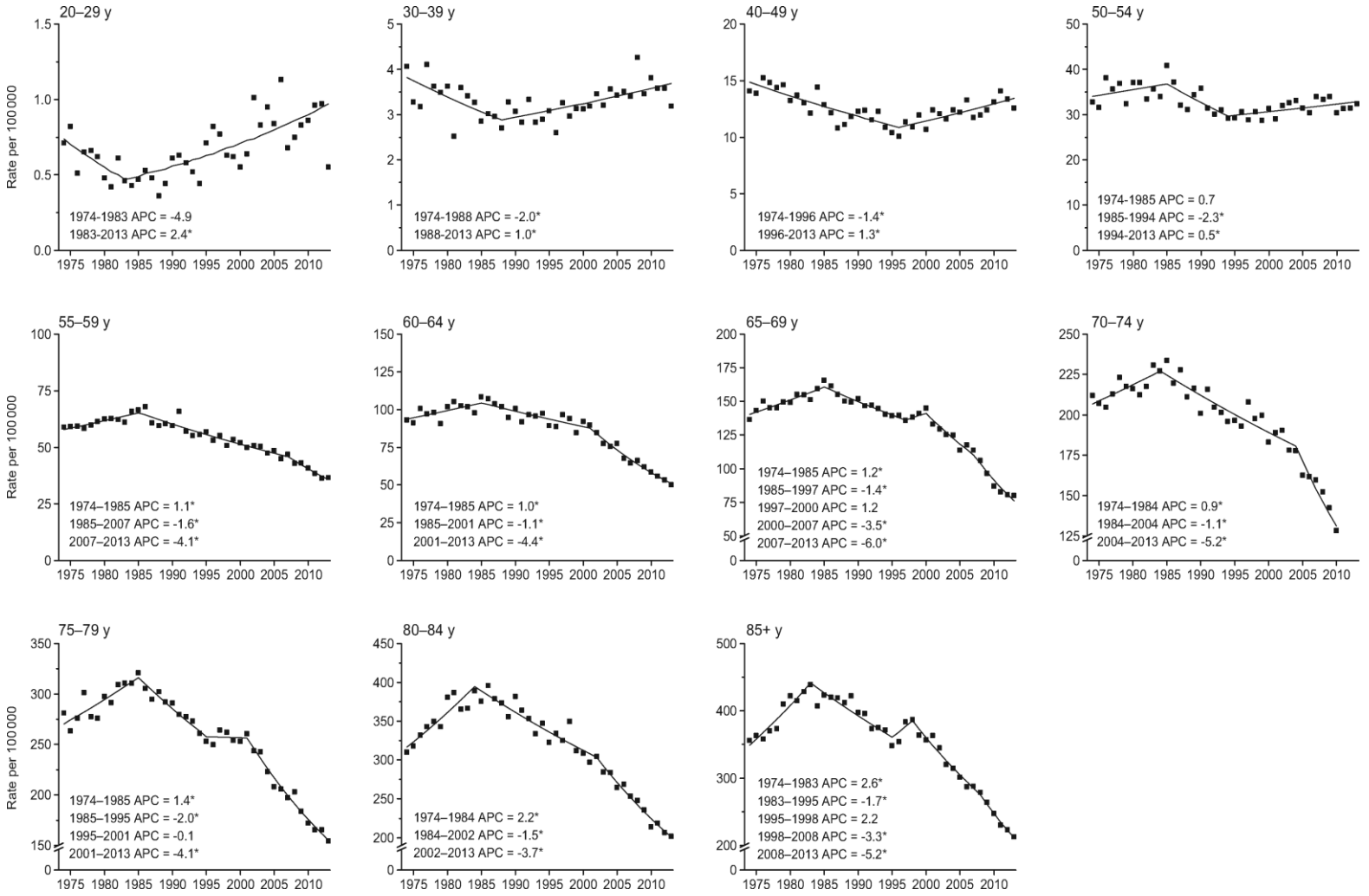
Estimated Deaths

Males			Females		
Lung & bronchus	68,820	21%	Lung & bronchus	61,360	21%
Prostate	34,500	11%	Breast	43,250	15%
Colon & rectum	28,400	9%	Colon & rectum	24,180	8%
Pancreas	25,970	8%	Pancreas	23,860	8%
Liver & intrahepatic bile duct	20,420	6%	Ovary	12,810	4%
Leukemia	14,020	4%	Uterine corpus	12,550	4%
Esophagus	13,250	4%	Liver & intrahepatic bile duct	10,100	4%
Urinary bladder	12,120	4%	Leukemia	9,980	3%
Non-Hodgkin lymphoma	11,700	4%	Non-Hodgkin lymphoma	8,550	3%
Brain & other nervous system	10,710	3%	Brain & other nervous system	7,570	3%
All Sites	**322,090**	**100%**	**All Sites**	**287,270**	**100%**



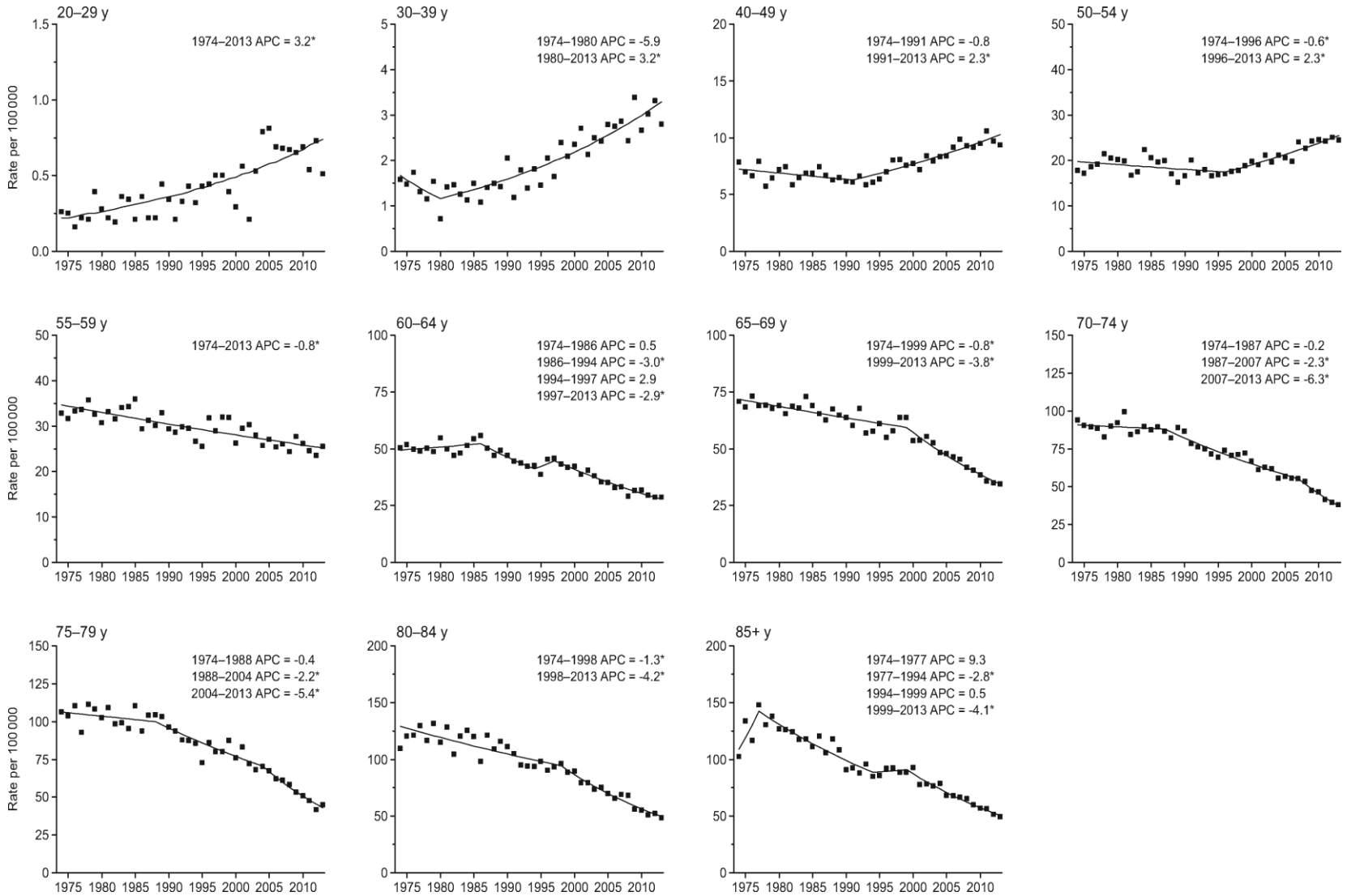
Siegel R, et al. Cancer statistics, 2022.
Siegel, R, et al. CA. Colorectal cancer statistics, 2020.

Changing Epidemiology: Colon Cancer



Siegel R, et al. *J Natl Cancer Inst*, August 2017.

Changing Epidemiology: Rectal Cancer



Siegel R, et al. *J Natl Cancer Inst*, August 2017.

Disparities in Changing Epidemiology

	2001-2002 TO 2017 – 2018 (% increase)
NHW	1.62*
Black	0.05
Hispanic	1.10*
AIAN	3.13*
Asian	0.37

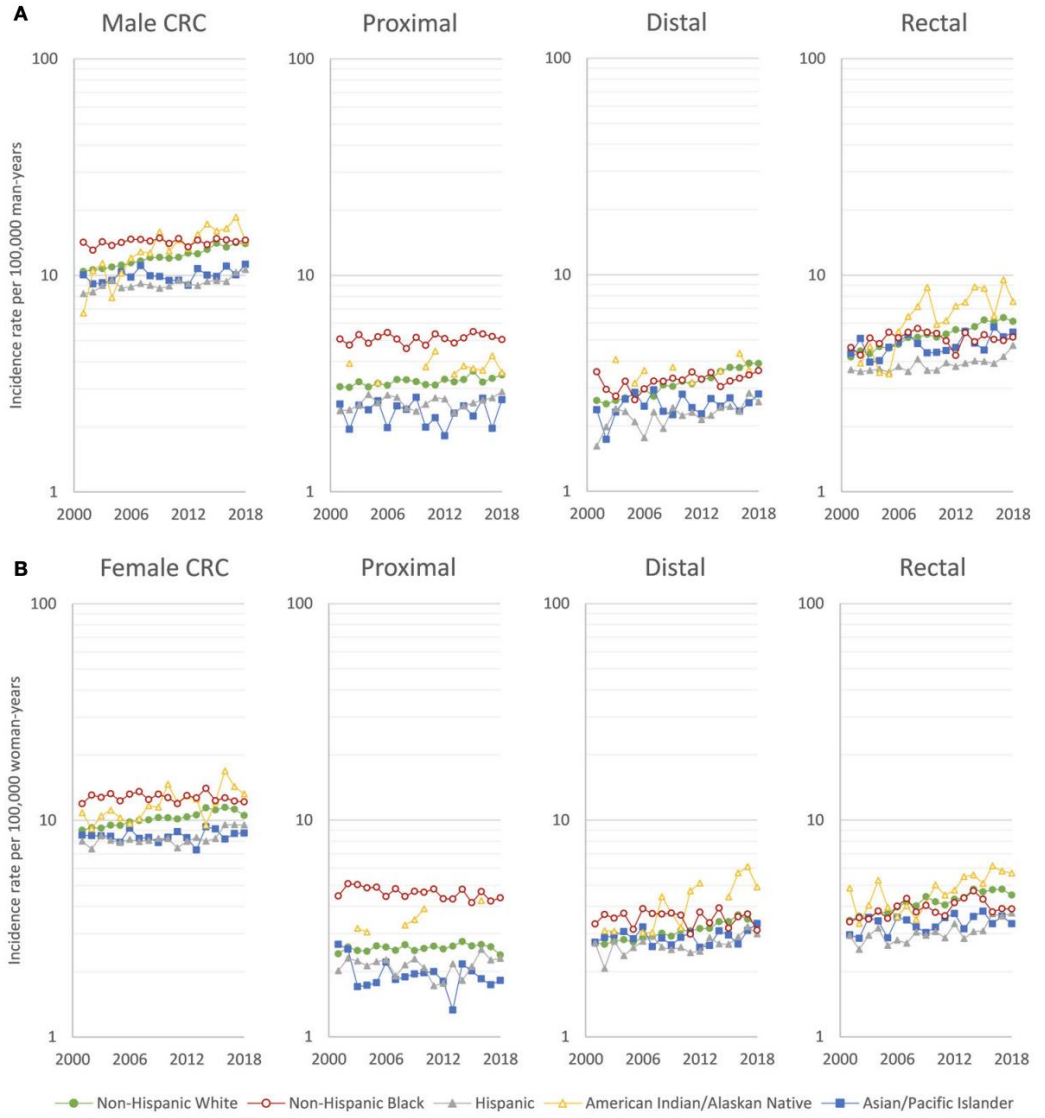
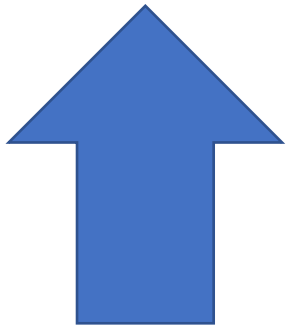


FIGURE 1 | Age-adjusted early-onset (20-49 years of age) colorectal cancer incidence rates per 100,000 person-years in **(A)** men and **(B)** women, US Cancer Statistics 2001-2018.

Shift in the Median Age

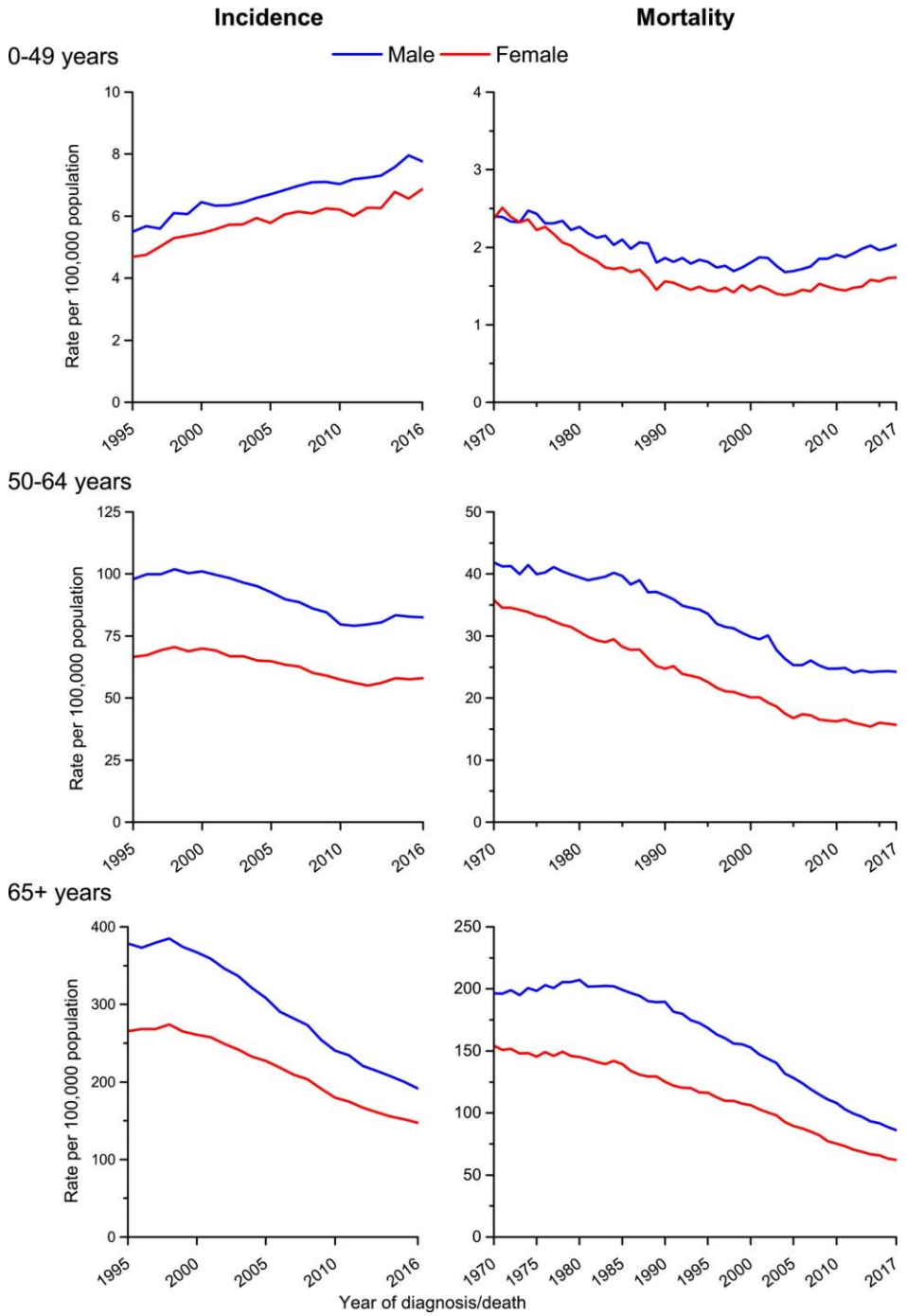
The median age of CRC patients went from **72 years during 2001-2002** to **66 years during 2015-2016**



The number of CRC in older patients is declining

The number of CRC in younger patients increasing

Not Just rising incidence, but *rising mortality* in young adults



Siegel, R, et al. CA. Colorectal cancer statistics, 2020.

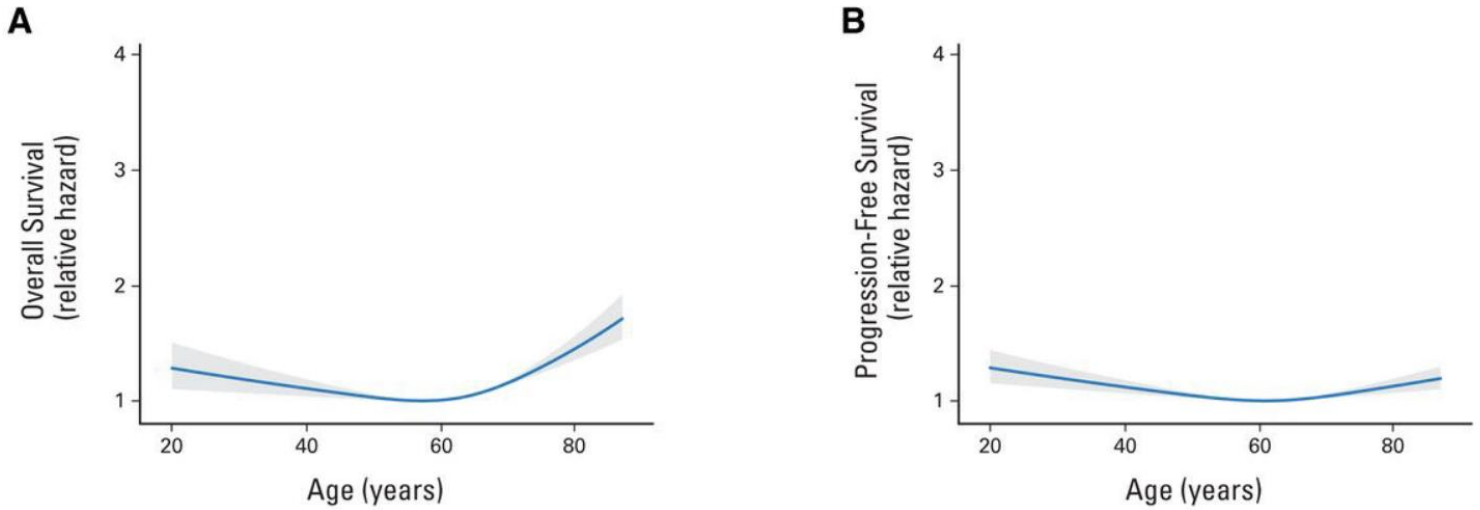
More Aggressive Treatment

- Higher utilization of treatment

Stage of Disease	Receipt of Cancer-Directed Surgery		Receipt of Cancer-Directed Radiation[b]	
	Age <50 Years	Age ≥50 Years	Age <50 Years	Age ≥50 Years
Localized	95.8%	94.9%	36.2%	29.7%
Regional	97.7%	97.1%	82.4%	77.7%
Distant	70.8%	66.6%	49.1%	41.9%

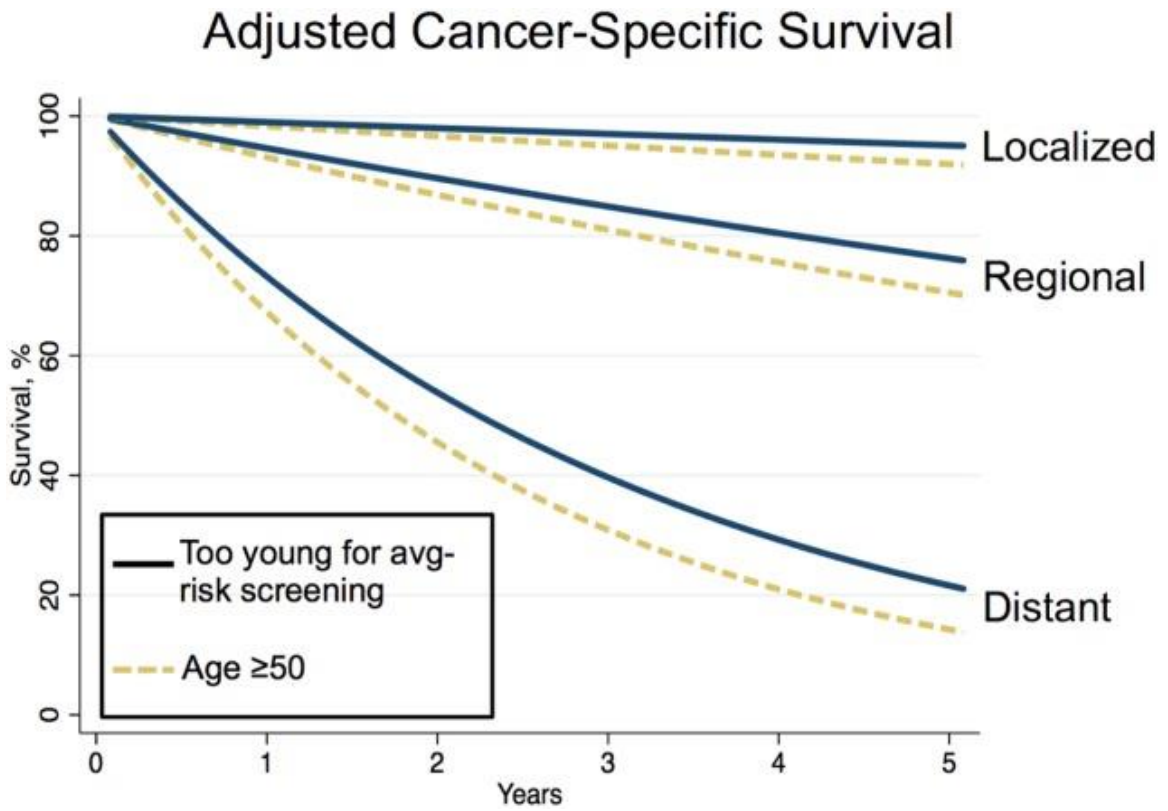
Abdelsattar, Z., et al. Cancer, 2016.

Poorer Survival on 1st Line Clinical Trials



Lieu, C., et al. JCO, 2014.

Cancer Specific Survival



The 5-year cancer-specific survival rate patients younger than 50 vs. those 50 and older was 95.1% versus 91.9% (*P*<.001) for localized disease, 76% versus 70.3% (*P*<.001) for regional disease, and 21.3% versus 14.1% (*P*<.001) for distant disease, respectively. Adjusted for sex, race/ethnicity, marital status, tumor location, stage at diagnosis, receipt of cancer-directed surgery or radiation, and year of diagnosis

Abdelsattar, Z., et al. Cancer, 2016.

Over-utilization of Treatment for Stage II

Table 2. Likelihood of Receiving Postoperative Systemic Chemotherapy and Multiagent Regimens for Young Adults (Ages 18-49 Years at Diagnosis) vs Older Adults (Ages 65-75 Years at Diagnosis) With Colon Cancers[a]

Patients Who Received Chemotherapy	Any Chemotherapy, No. (%)	Odds Ratio for Receiving Chemotherapy (95% CI)	Multiagent Regimens, No. (%)	Odds Ratio for Receiving Multiagent Regimen (95% CI)
Stage I				
Ages 65-75 y (n = 8991)	162 (1.8)	1 [Reference]	52 (43.0)	1 [Reference]
Ages 18-49 y (n = 1926)	109 (5.7)	2.88 (2.21-3.77)	43 (48.3)	1.38 (0.71-2.68)
Stage II Overall				
Ages 65-75 y (n = 11 011)	2748 (25.0)	1 [Reference]	773 (41.7)	1 [Reference]
Ages 18-49 y (n = 3083)	1732 (56.2)	3.93 (3.58-4.31)	670 (54.9)	1.71 (1.48-1.97)
Stage II Low Risk				
Ages 65-75 y (n = 4822)	923 (19.1)	1 [Reference]	313 (39.6)	1 [Reference]
Ages 18-49 y (n = 1636)	826 (50.5)	4.22 (3.70-4.81)	388 (52.5)	1.67 (1.34-2.09)
Stage II High Risk				
Ages 65-75 y (n = 6189)	1825 (29.5)	1 [Reference]	677 (42.7)	1 [Reference]
Ages 18-49 y (n = 1447)	906 (62.6)	3.69 (3.23-4.20)	454 (57.0)	1.77 (1.46-2.14)

Kneuertz,P., et al. JAMA Surgery, 2015.

Over-treatment, no Associated Survival Benefit

Table 3. Relative Survival of Young Adults (Ages 18-49 Years at Diagnosis) vs Older Adults (Ages 65-75 Years at Diagnosis) With Colon Cancers[a]

	Surgery			Surgery Plus Postoperative Systemic Chemotherapy		
Patients	No. (%)	Adjusted Relative Risk (95% CI)	Adjusted 5-Year Relative Survival, %	No. (%)	Adjusted Relative Risk (95% CI)	Adjusted 5-Year Relative Survival, %
Stage I						
Ages 65-75 y (n = 8991)	8829 (98.2)	1 [Reference]	96.8	NA	NA	NA
Ages 18-49 y (n = 1926)	1817 (94.3)	0.49 (0.29-0.85)	98.4	NA	NA	NA
Stage II Overall						
Ages 65-75 y (n = 11 011)	8263 (75.0)	1 [Reference]	82.3	2748 (25.0)	1 [Reference]	90.2
Ages 18-49 y (n = 3083)	1351 (43.8)	0.72 (0.58-0.88)	86.9	1732 (56.2)	0.90 (0.69-1.17)	91.1
Stage II Low Risk						
Ages 65-75 y (n = 4822)	3899 (80.9)	1 [Reference]	89.2	923 (19.1)	1 [Reference]	95.4
Ages 18-49 y (n = 1636)	810 (49.5)	0.60 (0.41-0.87)	93.3	826 (50.5)	1.03 (0.53-2.00)	95.2
Stage II High Risk						
Ages 65-75 y (n = 6189)	4364 (70.5)	1 [Reference]	74.6	1825 (29.5)	1 [Reference]	85.8
Ages 18-49 y (n = 1447)	541 (37.4)	0.80 (0.63-1.02)	78.9	906 (62.6)	0.85 (0.64-1.13)	87.7
Stage III						
Ages 65-75 y (n = 11 202)	3027 (27.0)	1 [Reference]	39.1	8175 (73.0)	1 [Reference]	71
Ages 18-49 y (n = 4780)	648 (13.6)	0.64 (0.55-0.74)	54.7	4132 (86.4)	0.89 (0.81-0.97)	73.7

Kneuertz,P., et al. JAMA Surgery, 2015.

IDEA: Recommendation for Stage III

3-year DFS rate (%) and HR by regimen and risk group	Regimen								
	CAPOX			FOLFOX			CAPOX/FOLFOX combined		
	3-year DFS, % (95% CI)		HR (95% CI)	3-year DFS, % (95% CI)		HR (95% CI)	3-year DFS, % (95% CI)		HR (95% CI)
	3 months	6 months		3 months	6 months		3 months	6 months	
Risk group									
Low-risk (T1–3/N1) ~60%	85.0 (83.1 to 86.9)	83.1 (81.1 to 85.2)	0.85 (0.71–1.01)	81.9 (80.2 to 83.6)	83.5 (81.9 to 85.1)	1.10 (0.96–1.26)	83.1 (81.8 to 84.4)	83.3 (82.1 to 84.6)	1.01 (0.90–1.12)
High-risk (T4 and/or N2) ~40%	64.1 (61.3 to 67.1)	64.0 (61.2 to 67.0)	1.02 (0.89–1.17)	61.5 (58.9 to 64.1)	64.7 (62.2 to 67.3)	1.20 (1.07–1.35)	62.7 (60.8 to 64.4)	64.4 (62.6 to 66.4)	1.12 (1.03–1.23)
Risk groups combined	75.9 (74.2 to 77.6)	74.8 (73.1 to 76.6)	0.95 (0.85–1.06)	73.6 (72.2 to 75.1)	76.0 (74.6 to 77.5)	1.16 (1.06–1.26)	(*P*-value interaction test: Regimen: 0.0061 Risk group: 0.11)		1.07 (1.00–1.15)

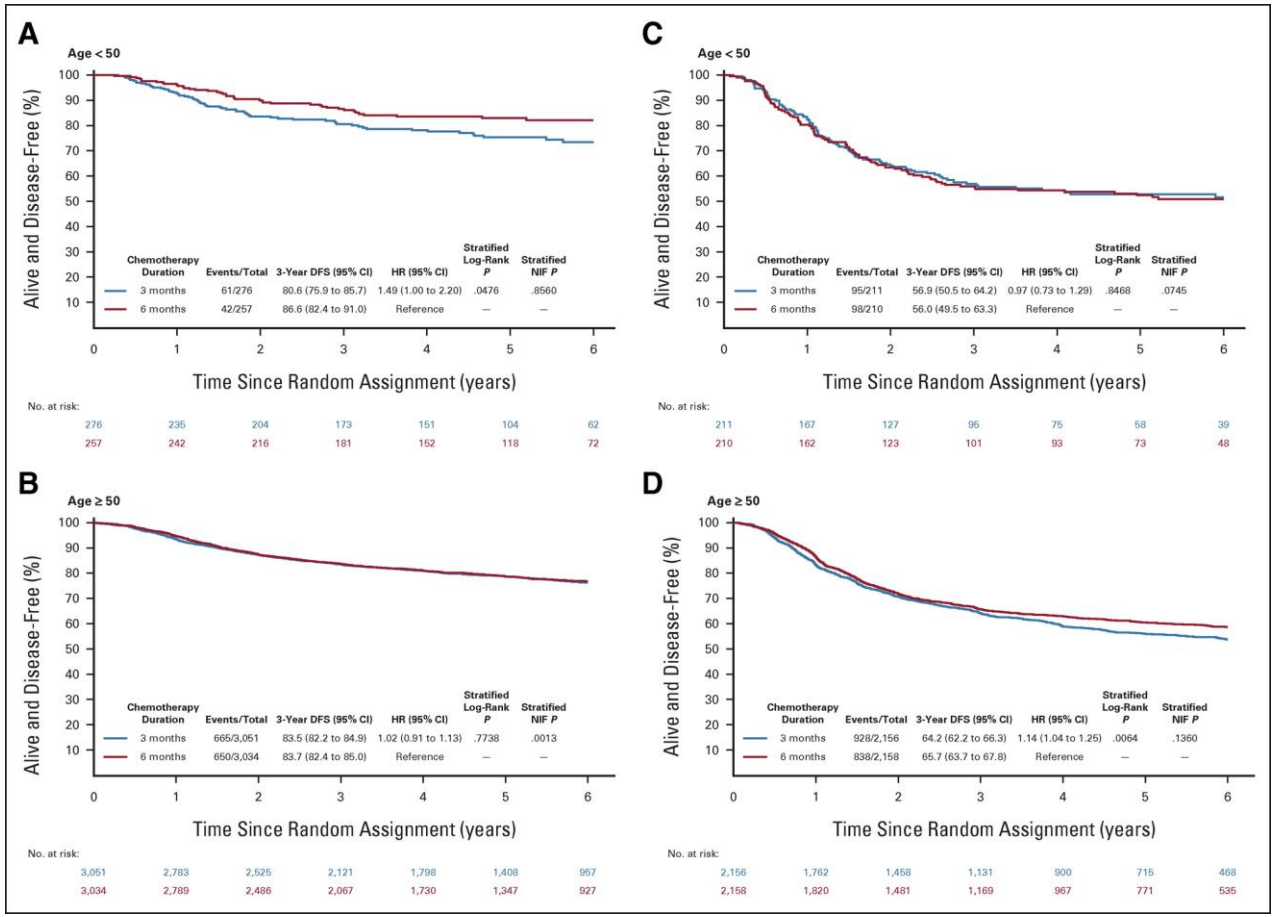
Key for 'non-inferiority' of 3 versus 6 months of adjuvant therapy:

Non-inferior | Not proven | Inferior

CAPOX, capecitabine plus oxaliplatin; CI, confidence interval; DFS, disease-free survival; FOLFOX, infusional 5-fluorouracil, leucovorin and oxaliplatin; HR, hazard ratio; N, node; T, tumour.

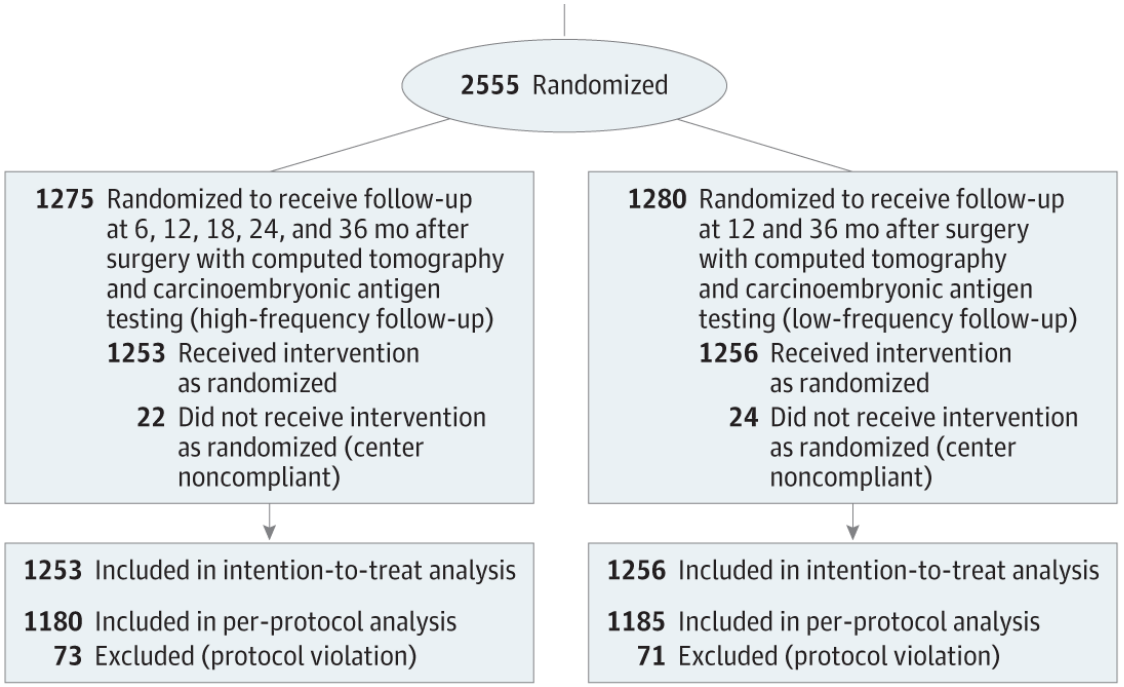
Sobrero, A. *Annals of Oncology*, 2018.

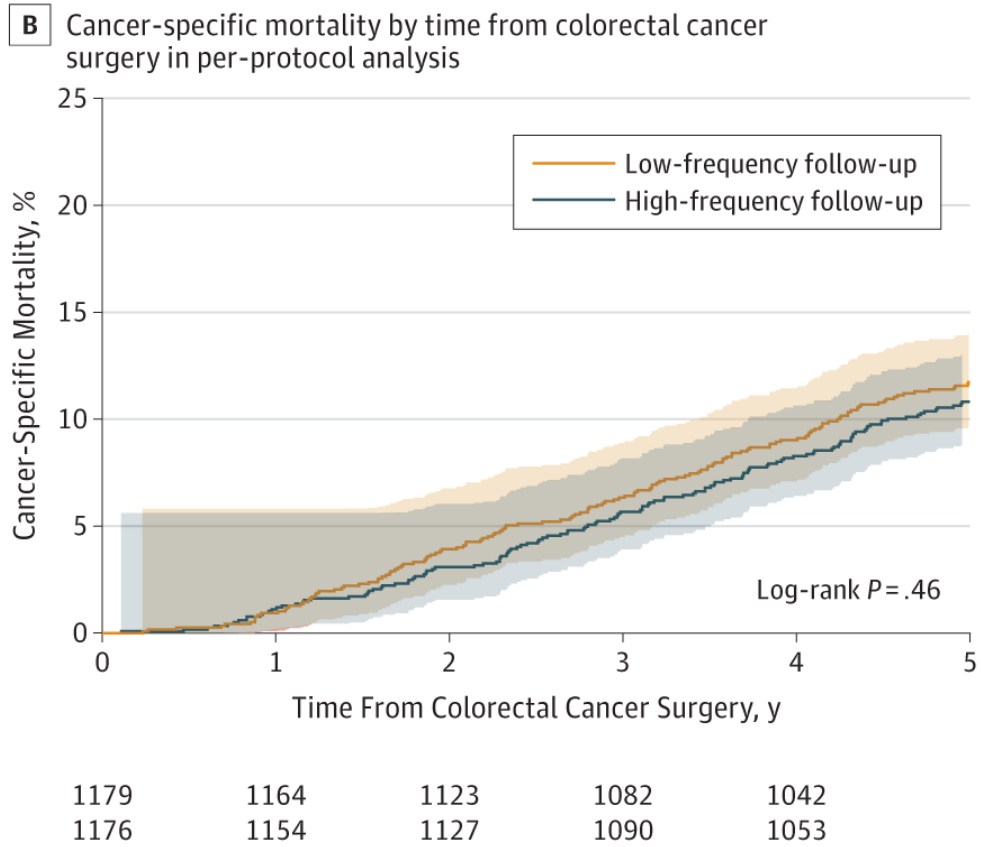
Adjuvant Therapy for Stage III, undertreatment?



Fontana, E., et al. JCO, 2021.

Surveillance: Annual CT scan





Wille-Jorgensen, P., JAMA, 2018.

Actionable Molecular Alteration

	MDACC Molecular Cohort							AACR Project GENIE Cohort							
	18-29 y	30-39 y	40-49 y	50-59 y	60-69 y	≥70 y	*P*	18-29 y	30-39 y	40-49 y	50-59 y	60-69 y	≥70 y	*P*	Combined *P*
Patients, No. (%)	46 (2)	177 (9)	411 (22)	605 (32)	454 (24)	184 (10)		31 (2)	126 (7)	371 (20)	518 (28)	510 (27)	312 (17)		
Mutation, No. (%)															
APC	12 (26)	71 (40)	181 (44)	287 (47)	208 (46)	88 (48)	.059	18 (58)	81 (64)	245 (66)	338 (65)	303 (59)	196 (63)	.33	.096
AKT1	1 (2)	3 (2)	1 (0)	4 (1)	4 (1)	1 (1)	.25	1 (3)	2 (2)	6 (2)	2 (0)	9 (2)	8 (3)	.067	.085
ATM	0 (0)	1 (1)	7 (2)	23 (4)	9 (2)	1 (1)	**.037**	6 (19)	5 (4)	25 (7)	31 (6)	23 (5)	31 (10)	**.004**	**.001**
BRAF	2 (4)	8 (5)	27 (7)	36 (6)	50 (11)	21 (11)	**.006**	4 (13)	16 (13)	33 (9)	46 (9)	59 (12)	55 (18)	**.004**	**<.001**
BRAF V600	2 (4)	5 (3)	17 (4)	30 (5)	43 (9)	18 (10)	**.001**	0 (0)	11 (9)	21 (6)	31 (6)	45 (9)	42 (13)	**.001**	**<.001**
CDKN2A	1 (2)	2 (1)	1 (0)	2 (0)	3 (1)	3 (2)	.11	0 (0)	3 (2)	10 (3)	7 (1)	11 (2)	10 (3)	.51	.22
CTNNB1	0 (0)	7 (4)	8 (2)	5 (1)	10 (2)	0 (0)	**.020**	4 (13)	9 (7)	10 (3)	23 (4)	23 (5)	18 (6)	.054	**.008**
ERBB2	0 (0)	2 (1)	3 (1)	7 (1)	4 (1)	4 (2)	.71	3 (10)	5 (4)	12 (3)	16 (3)	17 (3)	11 (4)	.53	.74
ERBB4	0 (0)	1 (1)	4 (1)	12 (2)	4 (1)	1 (1)	.55	3 (10)	7 (6)	20 (5)	18 (3)	27 (5)	14 (4)	.40	.55
FGFR3	1 (2)	2 (1)	3 (1)	3 (0)	2 (0)	0 (0)	.37	2 (6)	3 (2)	11 (3)	9 (2)	10 (2)	13 (4)	.15	.22
FBXW7	2 (4)	8 (5)	34 (8)	50 (8)	29 (6)	19 (10)	.26	2 (6)	10 (8)	33 (9)	57 (11)	46 (9)	41 (13)	.36	.31
GNAS	0 (0)	1 (1)	5 (1)	10 (2)	9 (2)	5 (3)	.61	2 (6)	6 (5)	17 (5)	8 (2)	23 (5)	11 (4)	**.031**	.094
KDR	0 (0)	1 (1)	5 (1)	6 (1)	4 (1)	3 (2)	.91	3 (10)	3 (2)	13 (4)	10 (2)	18 (4)	10 (3)	.18	.46
KIT	0 (0)	1 (1)	5 (1)	5 (1)	2 (0)	0 (0)	.68	1 (3)	0 (0)	14 (4)	8 (2)	11 (2)	4 (1)	.071	.19
KRAS	17 (37)	89 (50)	207 (50)	292 (48)	210 (46)	94 (51)	.46	12 (39)	47 (37)	161 (43)	244 (47)	239 (47)	148 (47)	.30	.41
MET	1 (2)	1 (1)	1 (0)	5 (1)	3 (1)	1 (1)	.52	1 (3)	5 (4)	12 (3)	7 (1)	4 (1)	8 (3)	**.023**	.065
NRAS	3 (7)	8 (5)	14 (3)	22 (4)	24 (5)	8 (4)	.61	1 (3)	5 (4)	15 (4)	20 (4)	26 (5)	17 (5)	.87	.87
PIK3CA	4 (9)	27 (15)	66 (16)	80 (13)	72 (16)	38 (21)	.16	8 (26)	29 (23)	67 (18)	102 (20)	94 (18)	58 (19)	0.71	.36
PTEN	2 (4)	2 (1)	14 (3)	6 (1)	16 (4)	6 (3)	**.017**	1 (3)	8 (6)	28 (8)	23 (4)	28 (5)	14 (4)	0.42	.042
RB1	1 (2)	1 (1)	6 (1)	2 (0)	4 (1)	2 (1)	.24	2 (6)	4 (3)	12 (3)	11 (2)	12 (2)	7 (2)	0.53	.39
RET	0 (0)	1 (1)	4 (1)	7 (1)	2 (0)	2 (1)	.85	3 (10)	4 (3)	12 (3)	6 (1)	11 (2)	6 (2)	**.036**	.14
SMAD4	9 (20)	24 (14)	53 (13)	66 (11)	58 (13)	23 (13)	.58	5 (16)	14 (11)	51 (14)	63 (12)	72 (14)	41 (13)	.88	.85
SMARCB1	0 (0)	0 (0)	4 (1)	4 (1)	6 (1)	1 (1)	.71	2 (6)	2 (2)	6 (2)	4 (1)	2 (0)	8 (3)	**.010**	.042
SMO	0 (0)	0 (0)	4 (1)	5 (1)	6 (1)	1 (1)	.77	4 (13)	6 (5)	12 (3)	12 (2)	9 (2)	7 (2)	**.020**	.080
STK11	0 (0)	1 (1)	2 (0)	8 (1)	1 (0)	2 (1)	.36	0 (0)	1 (1)	2 (1)	3 (1)	12 (2)	4 (1)	.14	.20
TP53	28 (61)	120 (68)	265 (64)	398 (66)	280 (62)	123 (67)	.62	18 (58)	91 (72)	269 (73)	347 (67)	326 (64)	204 (65)	.06	.16
MAPK summary	22 (48)	102 (58)	239 (58)	349 (58)	274 (60)	120 (65)	.27	15 (48)	71 (56)	211 (57)	303 (58)	321 (63)	217 (70)	**.004**	**.008**

Willauer, A, et al. Cancer, 2019.

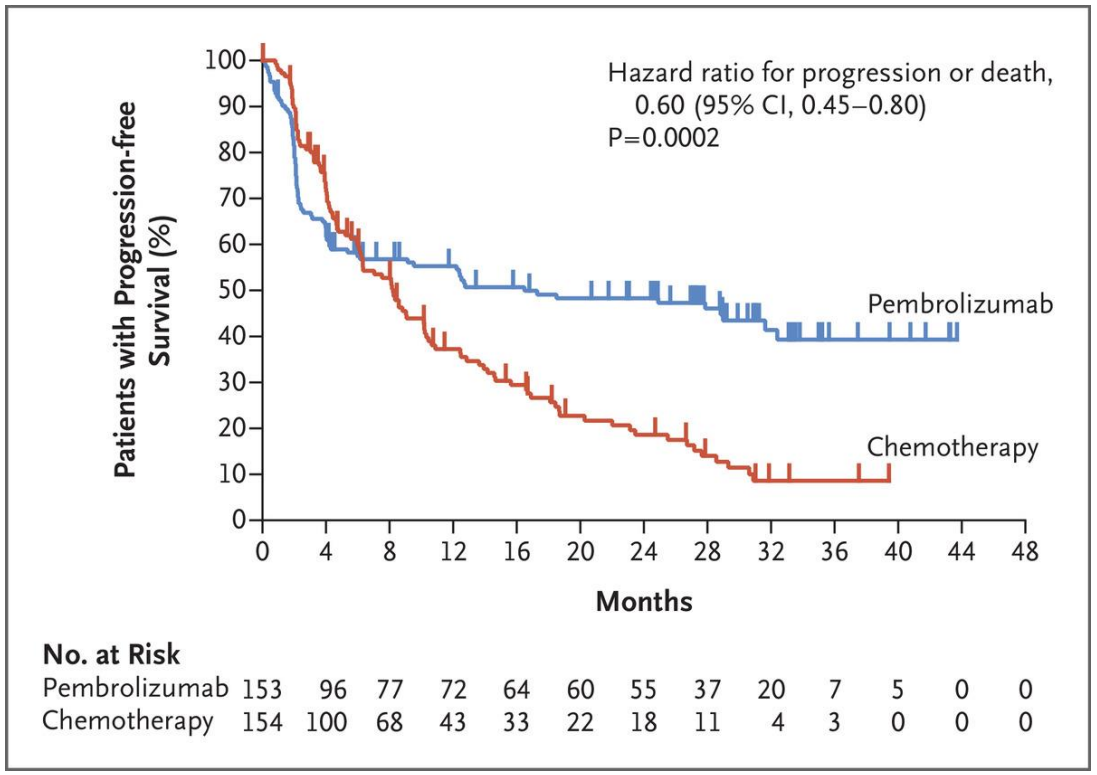
Molecular Landscape of Young Patients

	Onset <50 years, n = 24	Onset >70 years, n = 17	*P*-values
Mean number of mutations per patient	1.04	1.47	0.14
Median number of regions with copy number aberration per patient	43.29	26.88	0.02
Median percentage of normal copy number per patient	71.72	77.23	0.66

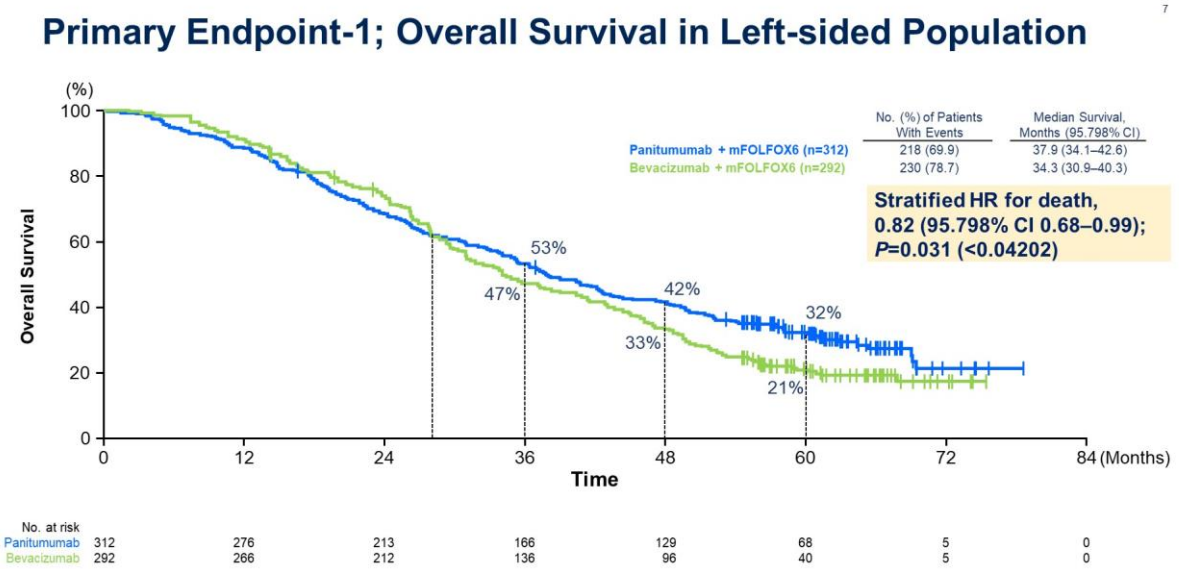
Median number of mutations per patient (= gene mutation index) is based on data from analyses of *KRAS*, *BRAF*, *PIK3CA*, *PTEN* and *TP53*. Median number of regions with copy number aberrations (= genomic complexity) and median percentage of normal copy number per patient are based on results from aCGH analysis.
doi:10.1371/journal.pone.0013978.t002

Berg M, et al. PLOS ONE, 2010.

Know the Biomarker: Role in Selection of 1st Line



André, T., et al. N Engl J Med, 2020.

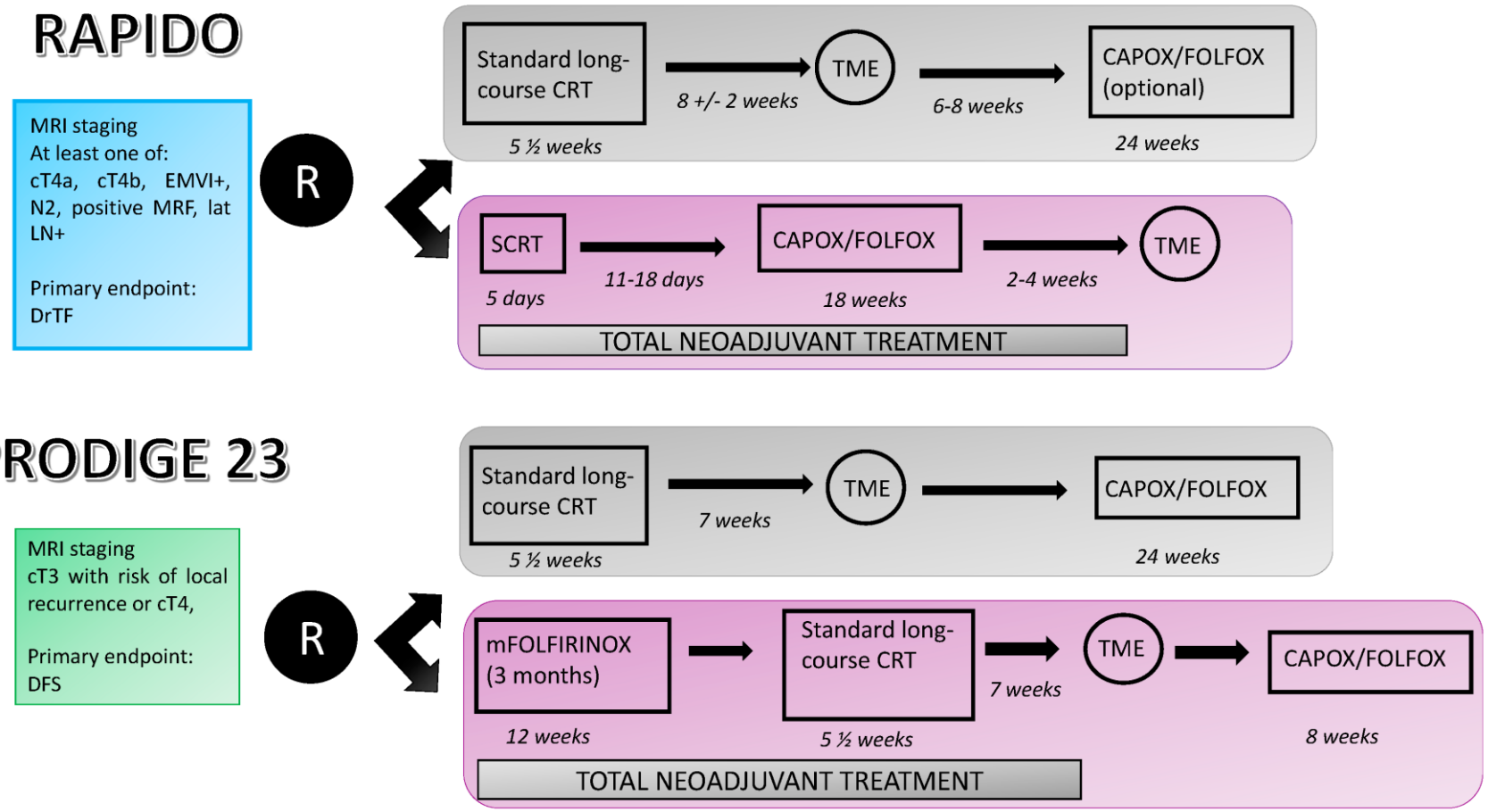


Yoshini, T. et al. ASCO 2022.

Treating Young Onset Rectal Cancer

Approximately 30% of rectal cancers are diagnosed in patients younger than age 55

TNT



Bahadoer, R., et al. Lancet Oncol, 2021.
Conroy, T., et al. Lancet Oncol, 2021.
Papaccio, F. et al. Cancers, 2020.

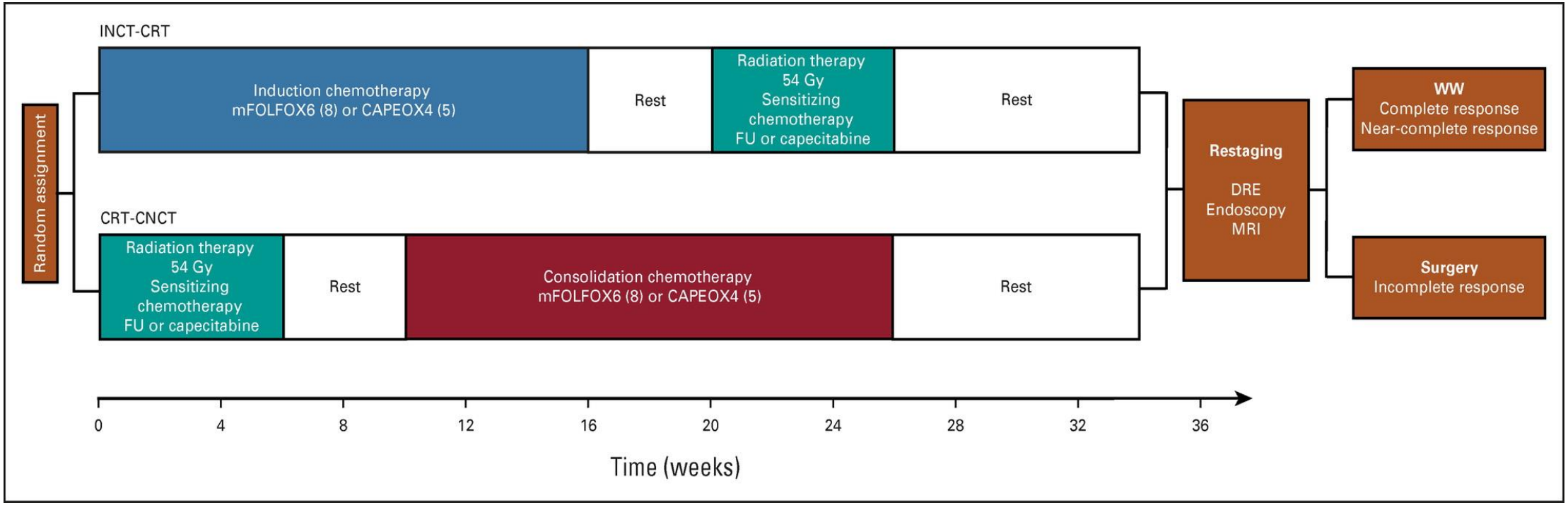
Reason to Intensify

Patient Characteristics	RAPIDO (TNT vs. CRT)	PRODIGE 23 (TNT vs. CRT)
Median age	61 yrs vs. 61 yrs	61 yrs vs. 62 yrs
Patients enrolled	462 vs. 450	231 vs. 230
cT4 (%)	30.4% vs. 31.8%	17.8% vs. 15.6%
cN2 (%)	68% vs. 68%	Not stated
EMVI+ (%)	32% vs. 28%	Not stated
MRF involved	62% vs. 60%	26% vs. 27.7%

Outcomes	RAPIDO (TNT vs. CRT)	PRODIGE 23 (TNT vs. CRT)
Median FU	4.6 yrs	3.8 yrs
Primary endpoint	3-yrs DrTF 23.7% vs. 30.4% (HR 0.75 [95% CI 0.60–0.96]; $p = 0.019$)	3-yrs DFS 75.7% vs. 68.5% (HR 0.69 95% [CI 0.49–0.97]; $p = 0.034$)
3-year MFS	80% vs. 73.2%	78.8% vs. 71.7%
pCR rate	28.4% vs. 14.3%	27.5% vs. 11.7%
Local relapse	8.7% vs. 5.4%	4.8% vs. 7%
3-year OS	89.1% vs. 88.8%	90.8% vs. 87.7%

Papaccio, F, et al. Cancers, 2020.

OPRA Trial



Garcia-Aguilar, J., et al. JCO, 2022.

Non-operative Management in Young Patients?

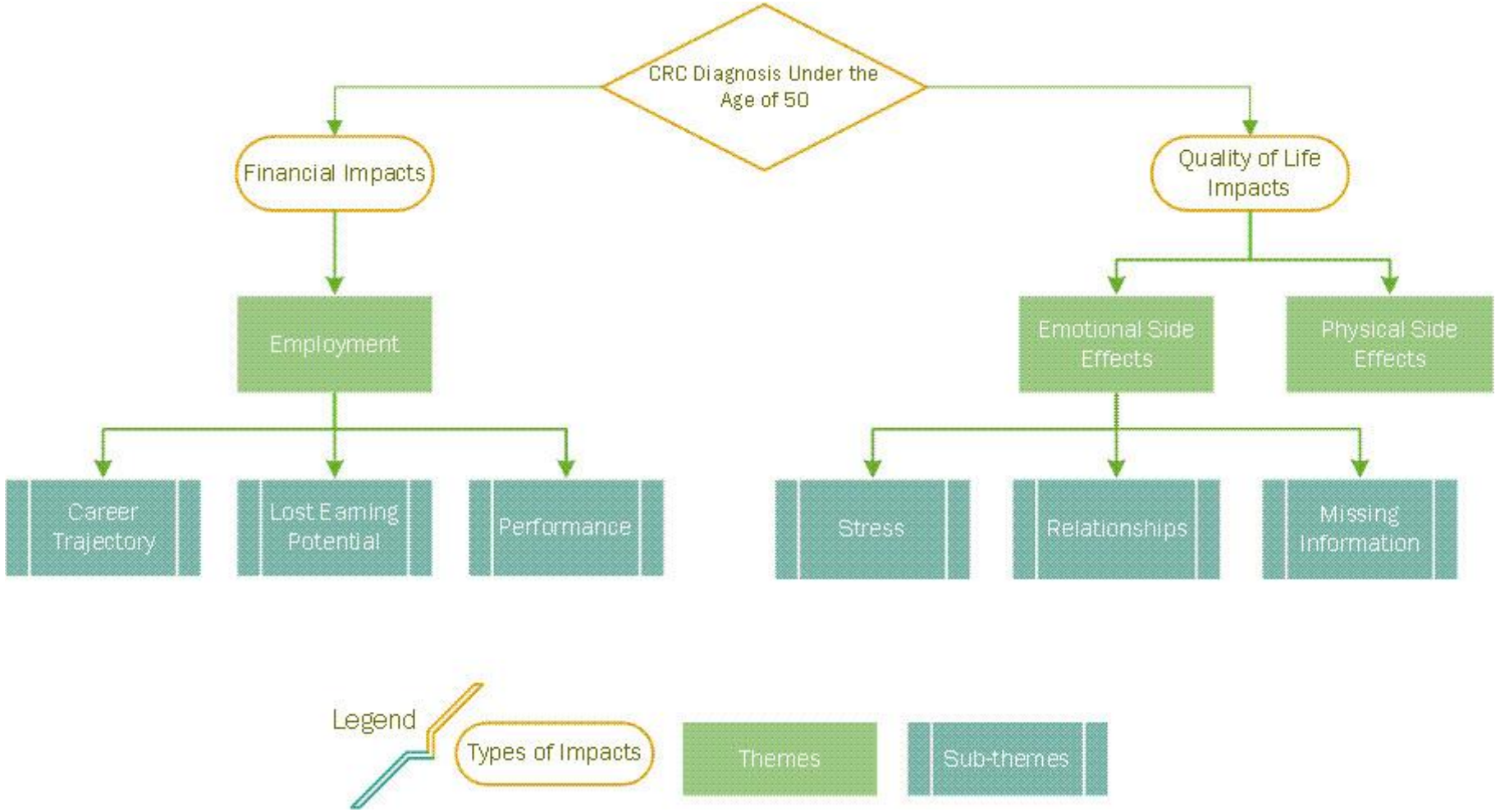
	Five-year OS	DSS
WW (113 patients)	73% (60-89%)	90% (81-99%)
PCR (136 patients)	94% (90-99%)	98% (95-100%)

Smith, J., et al. JAMA Oncology, 2019.

Selecting the Goal

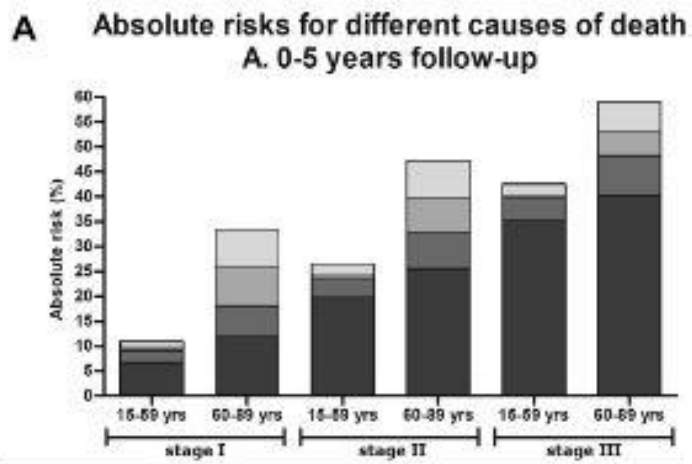
- TNT
  - Extended survival?
  - Better QOL?
  - Time commitment?
  - **Organ preservation**
  - Surgical approach >>> sexual functioning
- Caution
  - Identify the goal
  - Avoid longer than needed or intensified chemotherapy
  - Discuss the need for follow up care if WW pursued

Care for the Patient, not the Cancer

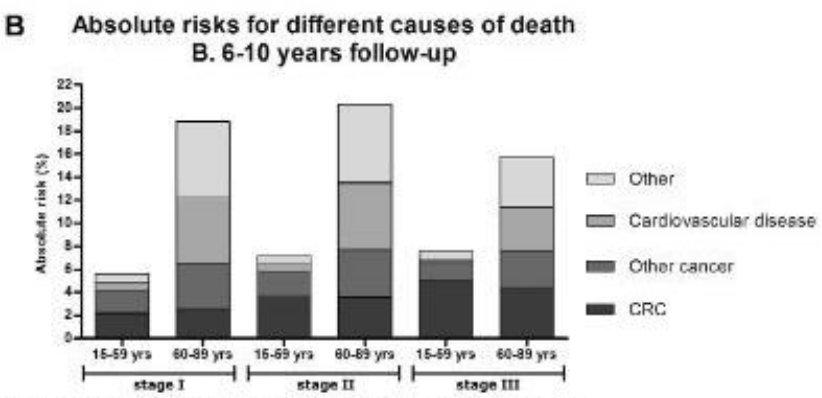


Health Expectations, Volume: 22, Issue: 5, Pages: 1050-1057, 2019.

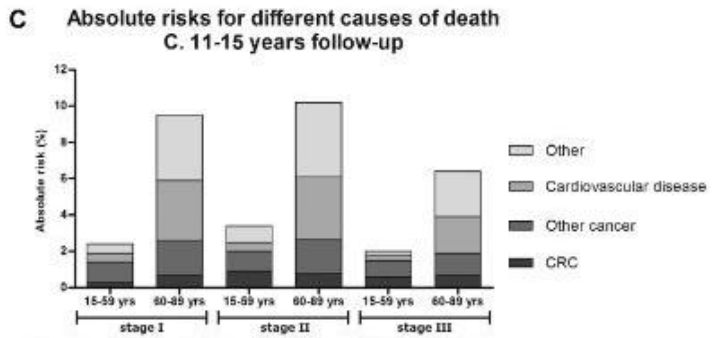
Changing Needs for Care



Proportional distribution causes of death for patients who died during follow-up						
Other	11%	23%	9%	16%	5%	10%
CVD	7%	23%	3%	16%	1%	8%
Other ca	21%	18%	13%	15%	11%	14%
CRC	61%	36%	75%	54%	83%	68%



Proportional distribution causes of death for patients who died during follow-up						
Other	12%	35%	11%	33%	9%	27%
CVD	14%	30%	10%	29%	3%	25%
Other ca	34%	21%	27%	20%	21%	20%
CRC	40%	14%	62%	18%	67%	28%



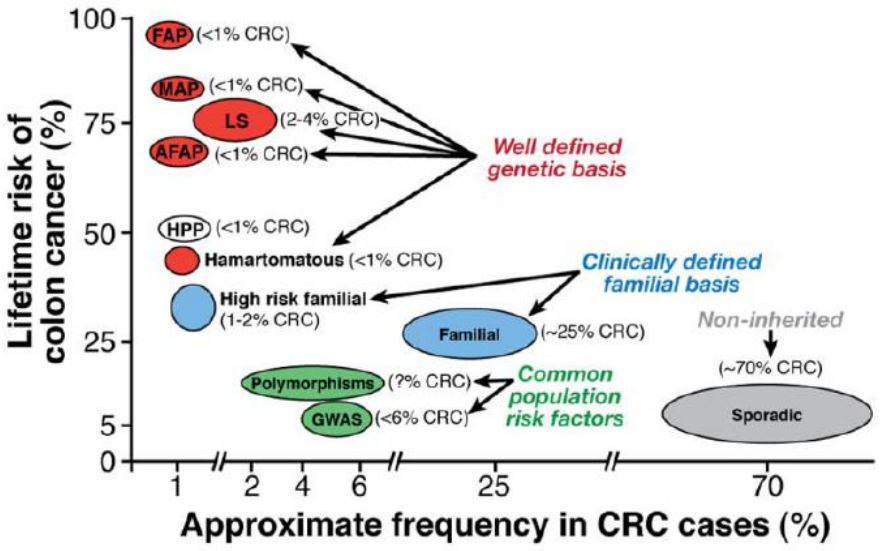
Proportional distribution causes of death for patients who died during follow-up						
Other	20%	39%	25%	41%	8%	39%
CVD	21%	34%	19%	33%	15%	31%
Other ca	48%	20%	31%	18%	45%	18%
CRC	11%	7%	25%	8%	32%	12%

Van Erning, F N, et al. EJC, 2014.

- Young Onset Colorectal Cancer

Genetics of colorectal cancer

5% of patients have hereditary cancer syndrome



16% of young adults have hereditary cancer syndrome

Gene	Associated Syndrome or Cancer(s)	Overall Penetrance	Patients With Mutation, No. (%)	(95% CI)
Any pathogenic or likely pathogenic mutation			72 (16)	(12.8–19.8)
Genes associated with colon cancer			59 (13.1)	(10.2–16.7)
MLH1	Lynch syndrome	High	13 (2.9)	(1.6–5.0)
MSH2	Lynch syndrome	High	16 (3.6)	(2.1–5.8)
MSH2/monoallelic *MUTYH*	Lynch syndrome/colon cancer	High/low	1 (0.2)	(0.01–1.4)
MSH6	Lynch syndrome	Moderate	2 (0.4)	(0.08–1.8)
PMS2	Lynch syndrome	Moderate	5 (1.1)	(0.4–2.7)
APC	Familial adenomatous polyposis (FAP)	High	5 (1.1)	(0.4–2.7)
APC p.I1307K	Colon cancer	Low	4 (0.9)	(0.3–2.4)
MUTYH				
Biallelic	MUTYH-associated polyposis (MAP)	High	4 (0.9)	(0.3–2.4)
Monoallelic	Colon cancer	Low	7 (1.6)	(0.7–3.3)
SMAD4	Juvenile polyposis syndrome	High	1 (0.2)	(0.01–1.4)
APC/PMS2	FAP/Lynch syndrome	High/moderate	1 (0.2)	(0.01–1.4)
Genes not traditionally associated with colon cancer			13 (2.9)	(1.6–5.0)
BRCA1	Hereditary breast-ovarian cancer syndrome	High	2 (0.4)	(0.08–1.8)
BRCA2	Hereditary breast-ovarian cancer syndrome	High	4 (0.9)	(0.3–2.4)
ATM	Breast cancer, pancreatic cancer	Moderate	3 (0.7)	(0.2–2.1)
ATM/CHEK2	Breast cancer, pancreatic cancer	Moderate	1 (0.7)	(0.01–1.4)
PALB2	Breast cancer, pancreatic cancer	Moderate	2 (0.4)	(0.08–1.8)
CDKN2A	Melanoma, pancreatic cancer	High	1 (0.2)	(0.01–1.4)

Pearlman R, Prevalence and Spectrum of Germline Cancer Susceptibility Gene Mutations Among Patients With Early-Onset Colorectal Cancer, JAMA Oncol 2017

Jasperson KW, Hereditary and familial colon cancer. Gastroenterology 2010

Conclusion

- Young onset colorectal cancer may not be a different disease. Yet, patients have different needs.
    - Discussion about long- and short-term toxicities
    - Expectations of treatment
    - Germline testing and genetic counseling
    - Sexual functioning and fertility remains an area in need of attention in this population
        - Expanding the horizons of multidisciplinary care beyond its traditional definition
- Data shows a more aggressive management approach in these young patients
    - Avoid over and under treatment and adhere to the available high-quality data
    - Sparing young patients from long term toxicities is detrimental to health of this population