How Do I Selectively Use Radiation to Benefit the Rectal Cancer Patient?

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ALEXANDRIA SCHOOL OF MEDICINE

Basic Facts:

- 2nd & 3rd most common cancer in females & males.
- 1.4 million new case and 694000 deaths.
- Lowest rates in Africa & South Central Asia.

Principles:

***Surgery** is the cornerstone in management*

However,

Crude Local Recurrence Rates with Surgery Alone

Trial	Number of Patients	Local Recurrence Rate	Follow-up
MRC (Mobile)[2]	235	34%	5 years (minimum)
NSABP R-01[3]	184	25%	5.3 years (mean)
MRC (Fixed)[5]	140	46%	5 years (minimum)
GITSG 7175[7]	58	24%	6.7 years (median)
Norwegian (Tveit et al)[15]	72	30%	4 years (minimum)
Stockholm II[16]	285	27%	8.8 years (median)
Stockholm I[17]	425	23%	4.4 years (median)
EORTC[18]	228	31%	6.3 years (median)
Swedish Rectal Cancer Trial[19]	585	27%	5 years (minimum)

Clinical Colorectal Cancer, Vol. 4, No. 4, 233-240, 2004

Adjuvant Radiation Therapy:

Studies Demonstrating a Local Recurrence Advantage with the Addition of Radiation to Surgery in Stage II/III Patients

Study	Local Recurrence Rates		Follow-up
	Surgery	Surgery + Radiation	
MRC-mobile[2]	34% →	21%	5 years (minimum)
NSABP R-01[3]	25% →	16%	5.3 years (mean)
NSABP R-02[4]	13% →	8%	5 years (actuarial)
MRC-fixed[5]	46% →	36%	5 years (minimum)
CCCG metaanalysis[6]	22% →	13%	5 years (actuarial)

Clinical Colorectal Cancer, Vol. 4, No. 4, 233-240, 2004

Early-stage disease, defined as T1-2N0, is usually treated with *surgery alone*.

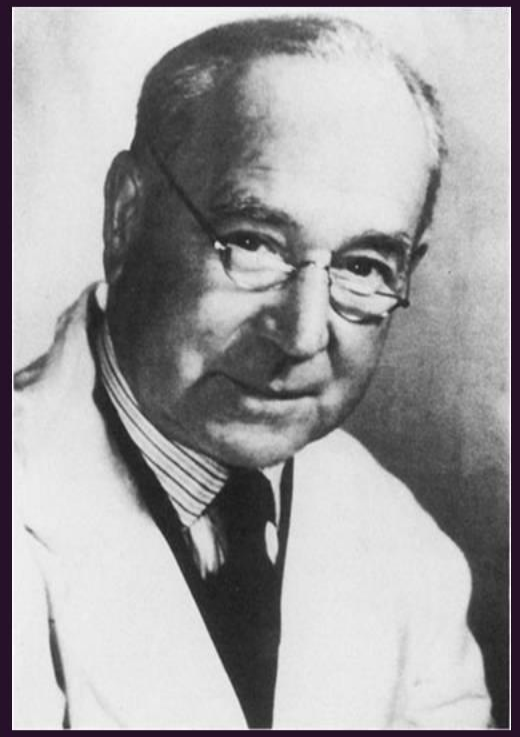
Locally advanced disease, defined as stage ***II/III disease***, requires initial clinical staging with pelvic MRI and endoscopic rectal ultrasound (ERUS) evaluation to determine the ***extent of disease and nodal involvement.***

Staging provides critical information

1- The likelihood of achieving a complete resection (R0)

2- The likelihood of sparing the rectal sphincter and thereby maintaining fecal continence.

Cuthbert Dukes 1932: Nodes as a prognostic factor



- system predicted **prognosis** and became a gold standard: Three-year survival after surgery was 80%, 73% and **7%** for A,B and C respectively.

NHS

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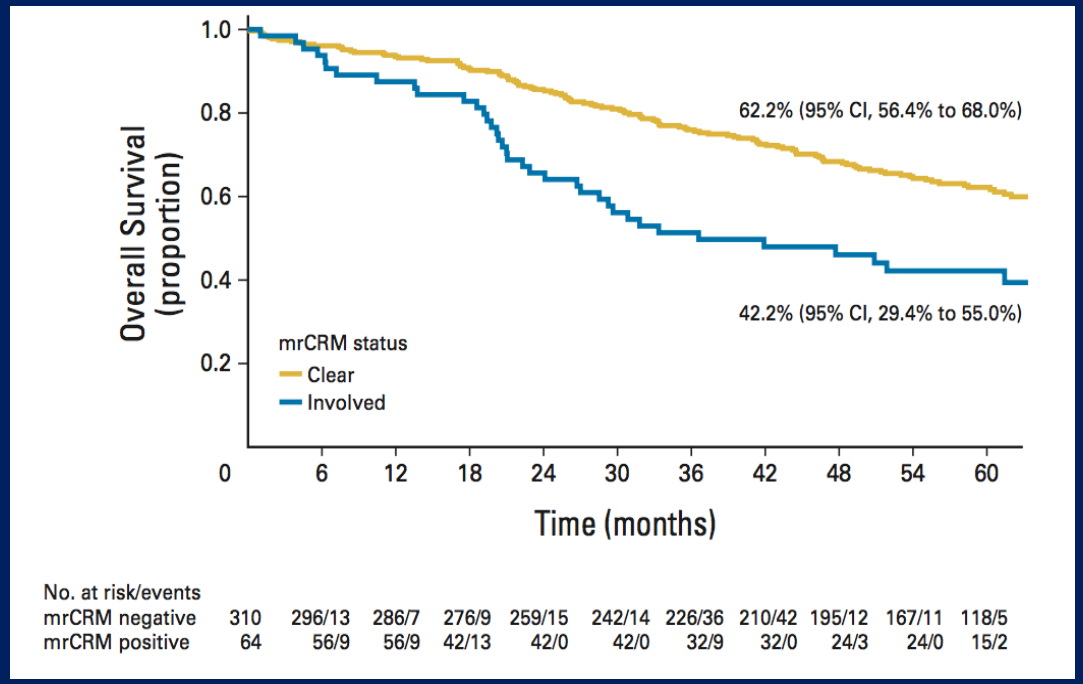
JOURNAL OF CLINICAL ONCOLOGY

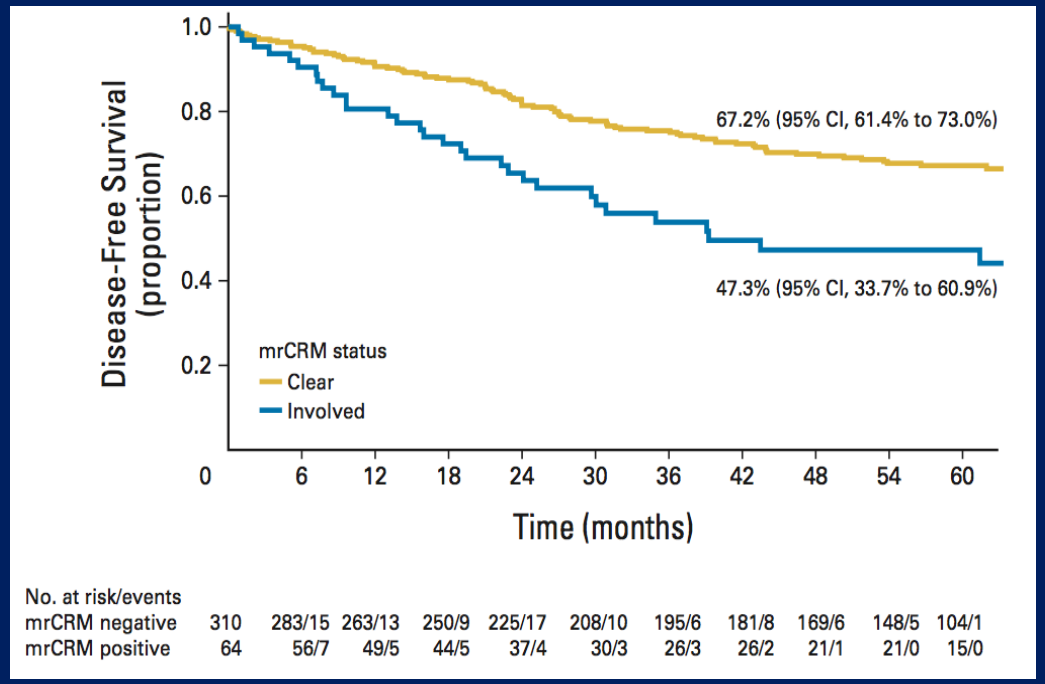
ORIGINAL REPORT

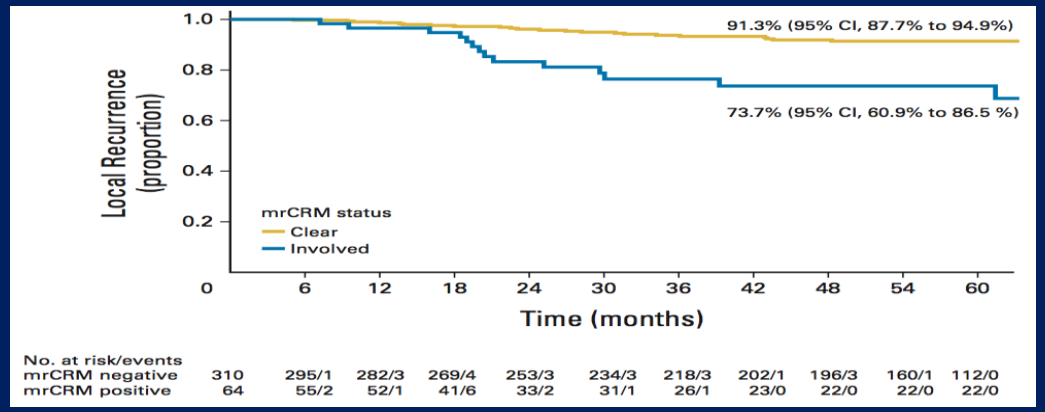
Preoperative Magnetic Resonance Imaging Assessment of Circumferential Resection Margin Predicts Disease-Free Survival and Local Recurrence: 5-Year Follow-Up Results of the MERCURY Study

Fiona G.M. Taylor, Philip Quirke, Richard J. Heald, Brendan J. Moran, Lennart Blomqvist, Ian R. Swift, David Sebag-Montefiore, Paris Tekkis, and Gina Brown

MURCERY Trial:







Fiona et al. JCO. 2014:1(32). 34-46.

CONCLUSION:

- *High resolution magnetic resonance imaging accurately predicts whether the surgical resection margins will be clear or affected by tumour.*

- *This technique can be reproduced accurately in multiple centres to* predict curative resection *and warns the multidisciplinary team of potential failure of surgery, thus enabling selection of patients for preoperative treatment.*

Reduced Circumferential Resection Margin Involvement in Rectal Cancer Surgery: Results of the Dutch Surgical Colorectal Audit

Lieke Gietelink, MD[a]; Michel W.J.M. Wouters, PhD[a,b]; Pieter J. Tanis, PhD[c]; Marion M. Deken, MD[d]; Martijn G. ten Berge, MD[a]; Rob A.E.M. Tollenaar, MD, PhD[a]; J. Han van Krieken, MD, PhD[e]; and Mirre E. de Noo, PhD[d]; on behalf of the Dutch Surgical Colorectal Cancer Audit Group

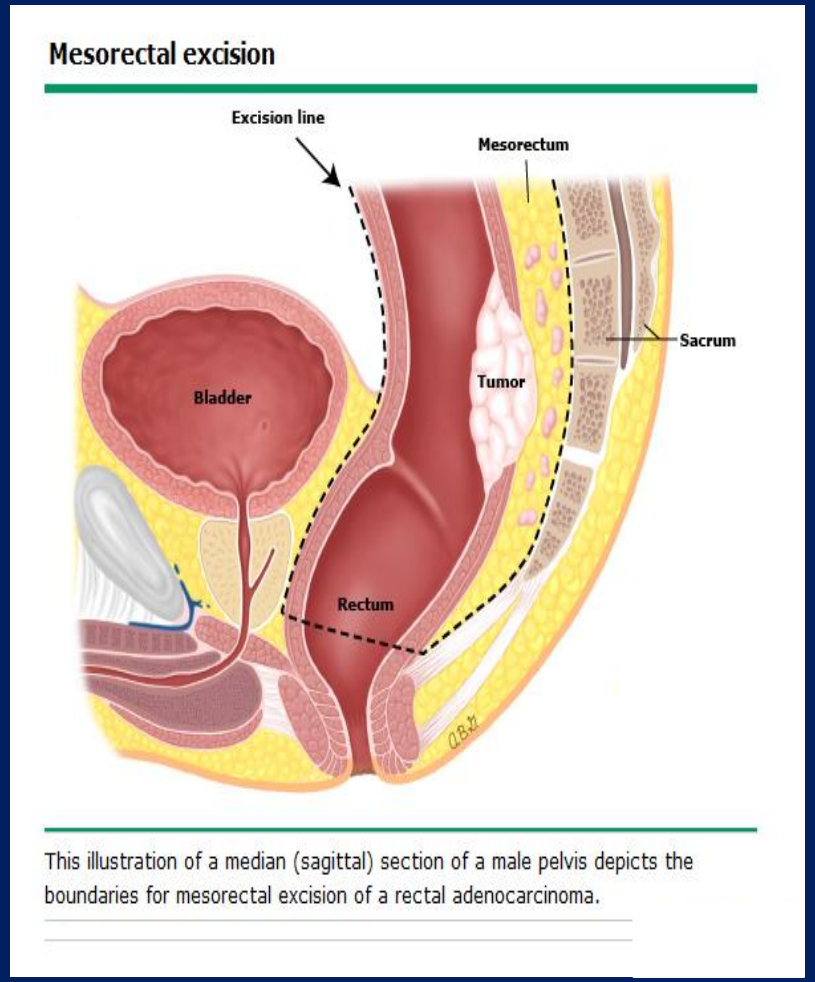
Abstract

Background: The circumferential resection margin (CRM) is a significant prognostic factor for local recurrence, distant metastasis, and survival after rectal cancer surgery. Therefore, availability of this parameter is essential. Although the Dutch total mesorectal excision trial raised awareness about CRM in the late 1990s, quality assurance on pathologic reporting was not available until the Dutch Surgical Colorectal Audit (DSCA) started in 2009. The present study describes the rates of CRM reporting and involvement since the start of the DSCA and analyzes whether improvement of these parameters can be attributed to the audit. **Methods:** Data from the DSCA (2009–2013) were analyzed. Reporting of CRM and CRM involvement was plotted for successive years, and variations of these parameters were analyzed in a funnelplot. Predictors of CRM involvement were determined in univariable analysis and the independent influence of year of registration on CRM involvement was analyzed in multivariable analysis. **Results:** A total of 12,669 patients were included for analysis. The mean percentage of patients with a reported CRM increased from 52.7% to 94.2% (2009–2013) and interhospital variation decreased. The percentage of patients with CRM involvement decreased from 14.2% to 5.6%. In multivariable analysis, the year of DSCA registration remained a significant predictor of CRM involvement. **Conclusions:** After the introduction of the DSCA, a dramatic improvement in CRM reporting and a major decrease of CRM involvement after rectal cancer surgery have occurred. This study suggests that a national quality assurance program has been the driving force behind these achievements. (J Natl Compr Canc Netw 2015;13:1111–1119)

- Radiotherapy and surgical resection are ***standard components*** of therapy for patients with stage II/III carcinoma of the rectum.

Total Mesorectal Excision (TME):

- **Removal of peri-rectal tissues involving lateral & circumferential margins of mesorectal envelop.**



Dis Colon Rectum. 2013 May;56(5):535-50.

Neoadjuvant Therapy

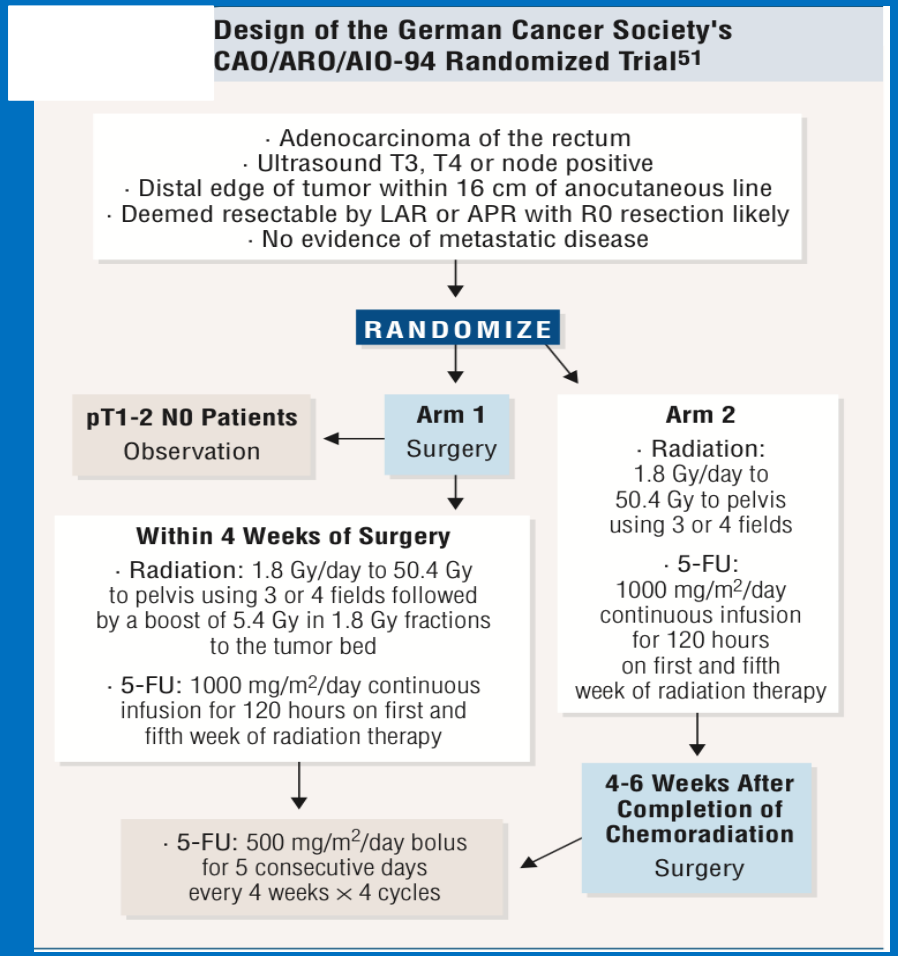
The objectives of neoadjuvant Therapy

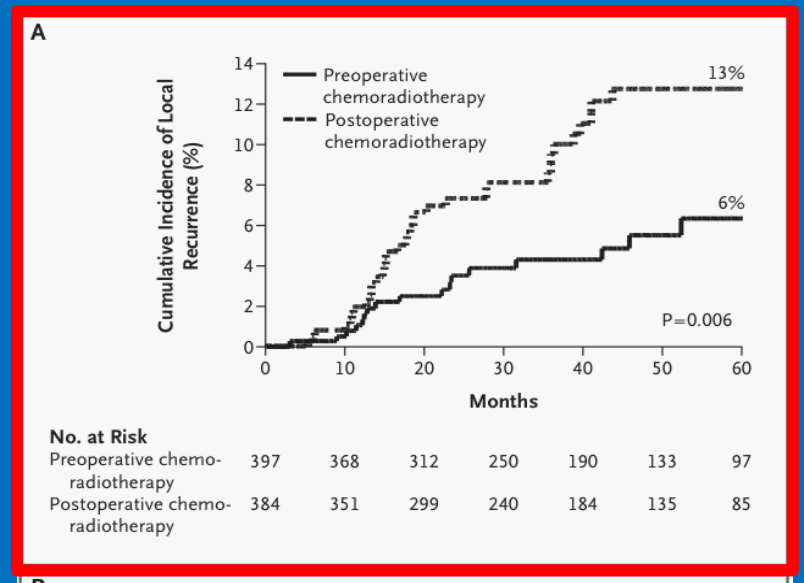
1-optimization of disease-free survival (DFS) overall survival (OS)

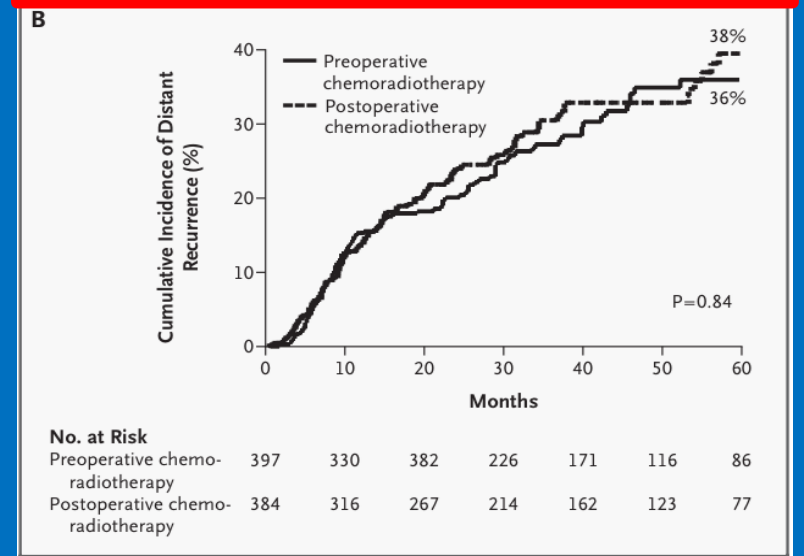
2-minimizing toxicity from RT and chemotherapy

3-eliminating local recurrence.

Neoadjuvant Therapy: The German Study: A Shifting Concept





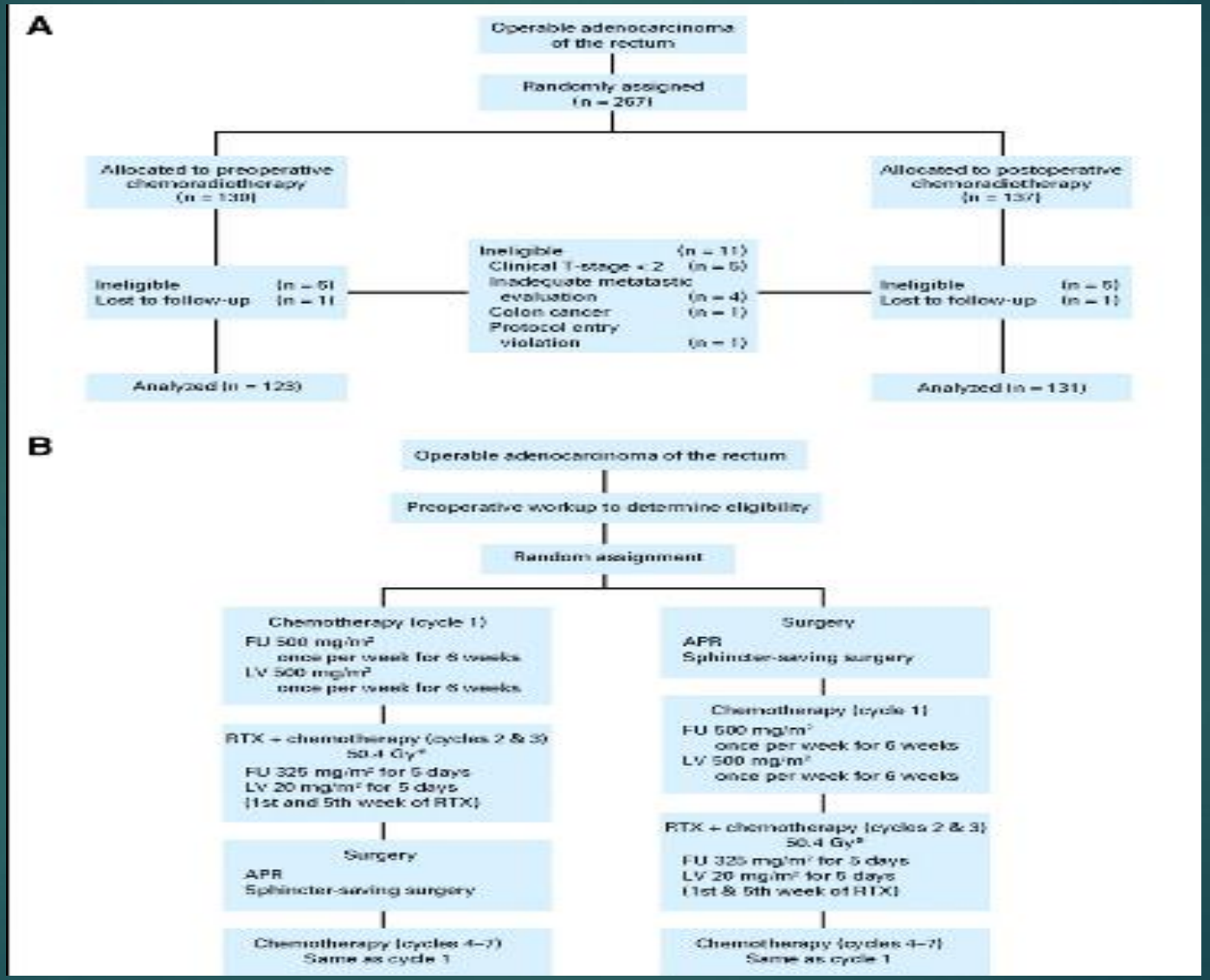


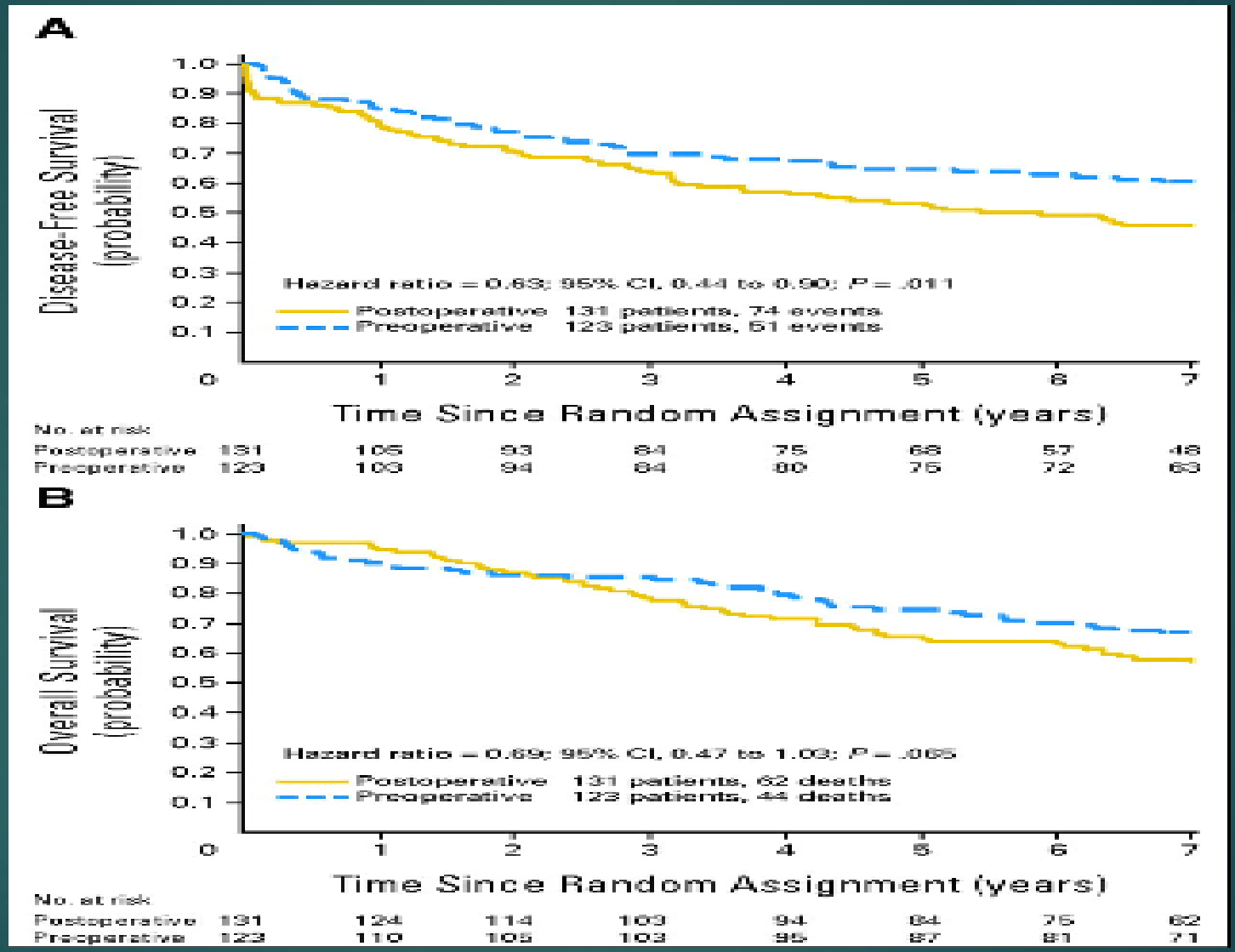
N Engl J Med 2004;351:1731-40.

Preoperative Multimodality Therapy Improves Disease-Free Survival in Patients With Carcinoma of the Rectum: NSABP R-03

- *Journal of Clinical Oncology 27, no. 31 (November 1 2009) 5124-5130.*

- Patients with clinical T3 or T4 or node-positive rectal cancer
- were randomly assigned to preoperative or postoperative chemoradiotherapy.
- Chemotherapy consisted of fluorouracil and leucovorin with 45 Gy in 25 fractions with a 5.40-Gy boost within the original margins of treatment.
- In the preoperative group, surgery was performed within 8 weeks after completion of radiotherapy. In the postoperative group, chemotherapy began after recovery from surgery but no later than 4 weeks after surgery.
- The primary end points were disease-free survival (DFS) and overall survival (OS).

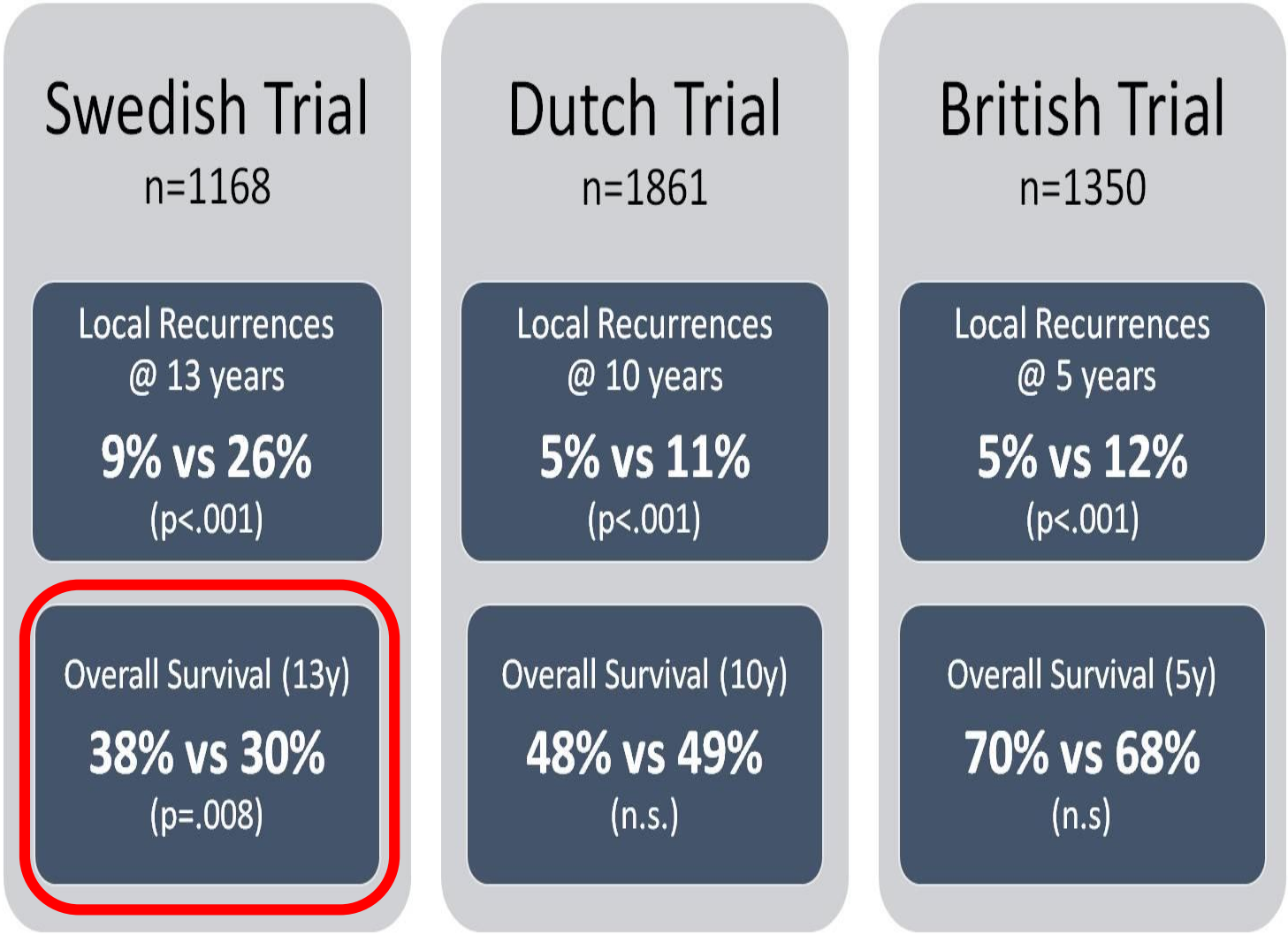

A
Operable adenocarcinoma of the rectum
Randomly assigned (n = 267)
Allocated to preoperative chemoradiotherapy (n = 138)
Allocated to postoperative chemoradiotherapy (n = 137)
Ineligible (n = 11)
Clinical T-stage < 2 (n = 6)
Inadequate metastatic evaluation (n = 4)
Colon cancer (n = 1)
Protocol entry violation (n = 1)
Ineligible (n = 6)
Lost to follow-up (n = 1)
Ineligible (n = 6)
Lost to follow-up (n = 1)
Analyzed (n = 123)
Analyzed (n = 131)
B
Operable adenocarcinoma of the rectum
Preoperative workup to determine eligibility
Random assignment
Chemotherapy (cycle 1)
FU 500 mg/m²
once per week for 6 weeks
LV 500 mg/m²
once per week for 6 weeks
RTX + chemotherapy (cycles 2 & 3)
50.4 Gy*
FU 325 mg/m² for 5 days
LV 20 mg/m² for 5 days
(1st and 5th week of RTX)
Surgery
APR
Sphincter-saving surgery
Chemotherapy (cycles 4–7)
Same as cycle 1
Surgery
APR
Sphincter-saving surgery
Chemotherapy (cycle 1)
FU 500 mg/m²
once per week for 6 weeks
LV 500 mg/m²
once per week for 6 weeks
RTX + chemotherapy (cycles 2 & 3)
50.4 Gy*
FU 325 mg/m² for 5 days
LV 20 mg/m² for 5 days
(1st & 5th week of RTX)
Chemotherapy (cycles 4–7)
Same as cycle 1


A
Disease-Free Survival (probability)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1
2
3
4
5
6
7
Hazard ratio = 0.63; 95% CI, 0.44 to 0.90; P = .011
Postoperative 131 patients, 74 events
Preoperative 123 patients, 61 events
Time Since Random Assignment (years)
No. at risk
Postoperative 131 105 93 84 75 68 57 48
Preoperative 123 103 94 84 80 75 72 63
B
Overall Survival (probability)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1
2
3
4
5
6
7
Hazard ratio = 0.69; 95% CI, 0.47 to 1.03; P = .065
Postoperative 131 patients, 62 deaths
Preoperative 123 patients, 44 deaths
Time Since Random Assignment (years)
No. at risk
Postoperative 131 124 114 103 94 84 75 62
Preoperative 123 110 105 103 95 87 81 71

T3/4 or N+ — 5-FU CRT + Surg *vs* ...

German Trial	French Trial	EORTC Trial
n=823	n=762	n=1011
Local Recurrences (10y) pre CRT vs post CRT **7% vs 10%** (p=.04)	Local Recurrences (10y) pre CRT vs pre RT **8% vs 16%** (p<.05)	Local Recurrences (10y) pre CRT vs pre RT **12% vs 22%** (p<.001)
Overall Survival (10y) **60% vs 60%** (n.s.)	Overall Survival (10y) **68% vs 67%** (n.s.)	Overall Survival (10y) **51% vs 49%** (n.s)
Sauer et al., J Clin Oncol 2012	Gerard et al., J Clin Oncol 2006	Bosset et al., Lancet Oncol 2014

T1-3 Nany — 5x5 Gy + Surg *vs* Surg alone

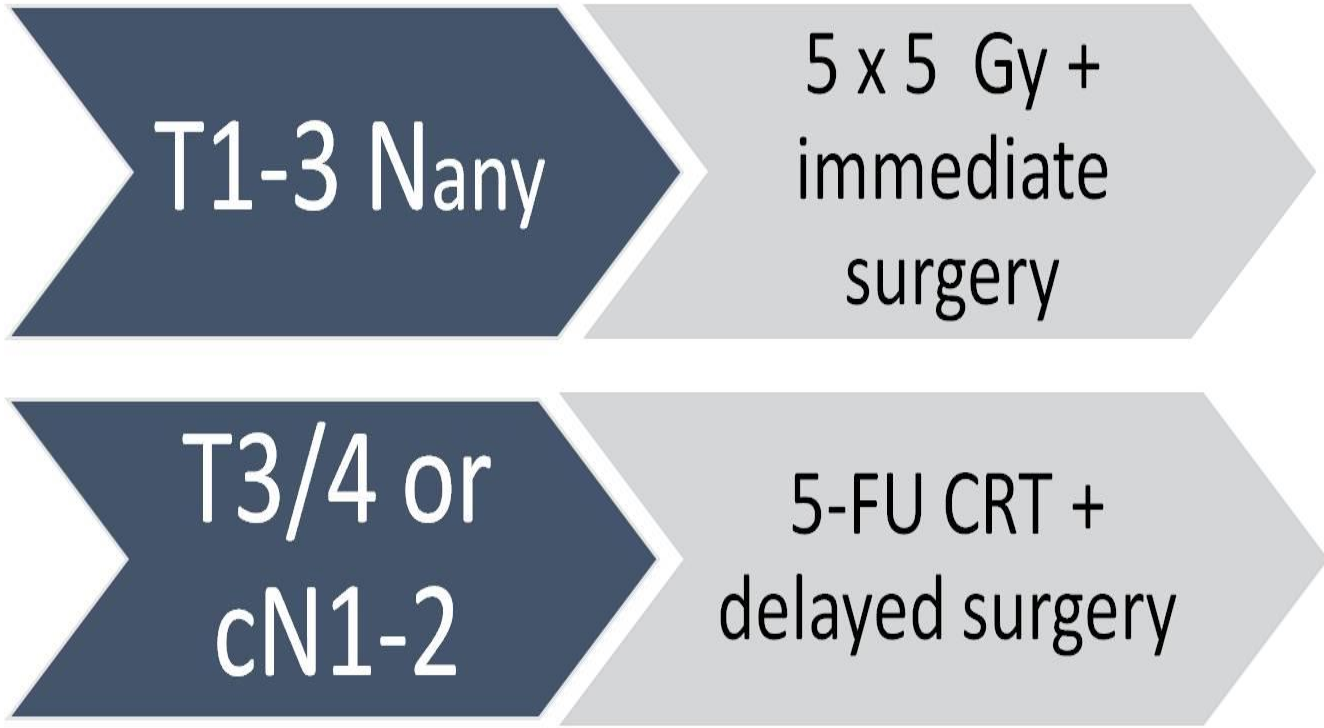


Fokesson et al., J Clin Oncol 2005

van Gijn et al., Lancet Oncol 2011

Sebag-Montefiore et al., Lancet 2009

Where do we come from?



Polish Trial	5x5 Gy	CRT	P value
Acute Tox (Grade 3-4, %)	3	18	<.001
pCR (%)	1	16	<.001
CRM + (%)	13	4	0.02
Sphincter Preservation (%)	61	58	n.s.
Local Recurrences (4y, %)	11	16	n.s.
Overall Survival (4y, %)	67	66	n.s.
Late Tox (Grade 3-4, %)	10	7	n.s.

Med. F/U: 48 months

Bujko et al., Radiother Oncol 2004
Buiko et al., Br J Surg 2006
Pietrzak et al. Radiother Oncol 2007

Trans-Tasman	5x5 Gy	CRT	P value
Acute Tox (Grade 3-4; %)	2	28	<.001
ypT0 (%)	1	15	<.001
Sphincter Preservation (%)	63	69	0.22
Local Recurrences (3y, %)*	**7.5**	**4.4**	**0.24**
Overall Survival (5y, %)	74	70	0.62
Late Tox (Grade 3-4, %)	5.8	8.2	0.53

Med. F/U: 5.9 years

*< 5 cm from AV: 6/48 *vs* 1/31 pts (p= 0.21)

Ngan SY et al., J Clin Oncol 2012

Bruce D. Minsky, Editorial, J Clin Oncol 2012

European Model of Stratification

based on MRI risk categorization

Where are we now?

NCCN Guidelines Rectal Cancer (Version 1/2016)

Preoperative Short-Course RT:

Option for T3 or N+; not recommended for T4

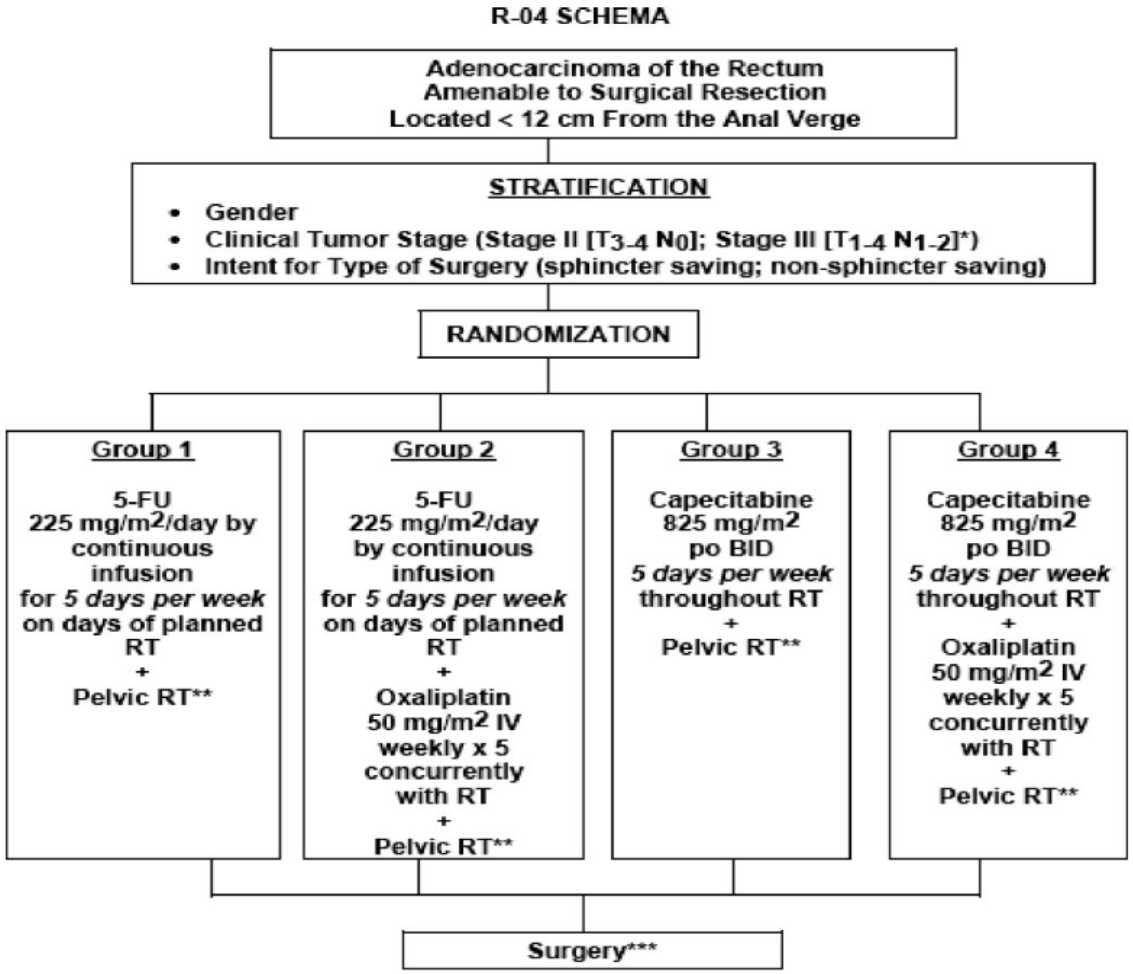
„Evaluation … should be in a multidisciplinary setting, with a discussion of the need of **downstaging** and the possibility of long-term toxicity.“

*Practical Radiation Oncology, in press 2016

Radiation + Chemotherapy are MANDATORY in Neoadjuvant Therapy:

Trial/Preoperative Treatment	RT Total Dose	% pCR	% 5-year LR	% SPS	% 5-year OS
EORTC 22921					
RT alone	45 Gy (1.8 Gy)	5.3	17.1	52.8	65
Chemo-RT*	45 Gy (1.8 Gy)	14	8.7	55.3	65
P value		<.0001	.0016	.05	NS
FFCD 9203					
RT alone	45 Gy (1.8 Gy)	3.7	16.5	51.7	66.6
Chemo-RT	45 Gy (1.8 Gy)	11.7	8	52.6	67.8
P value		<.05	NR	NS	NS
Polish Trial					
RT alone	25 Gy (5 Gy)	1	NR	61	NR
Chemo-RT	50.4 Gy (1.8 Gy)	16	NR	58	NR
P value		NR	NR	NS	NS
GRECCAR 1					
RT alone	63 Gy (1.8 Gy)	NR	NR	83	NR
Chemo-RT	45 Gy (1.8 Gy)	NR	NR	86	NR
P value		NR	NR	NS	NS

Neoadjuvant Therapy:
The Use of Capecitabine:



EQUIVALENT

The Cancer Journal • Volume 13, Number 3, May/June 2007

Neoadjuvant Therapy: Adding Oxaliplatin:

Table 1. Phase III trials adding oxaliplatin to preoperative fluorouracil-based chemoradiotherapy in stage II and III rectal cancer

Trial	Preoperative treatment	Surgery	Postoperative treatment	First results/comment
ACCORD 12 [6]	RT 45 Gy + capecitabine versus	TME	Postoperative CT free in	pCR: 14 versus 19% (n.s.)
				3/4 toxicity increased
STAR-01 [7▪▪]				6% both arms
				3/4 toxicity increased
NSABP R-04 [8]				9 versus 21% (n.s.)
				le 3/4 toxicity increased
	RT 50.4 Gy + capecitabine + oxaliplatin	TME		
CAO/ARO/ AIO-04 [9]	RT 50.4 Gy + 5-FU versus	TME	5-FU versus	pCR 13 versus 17% ($P=0.04$) Grade 3/4 toxicity not increased
	RT 50.4 Gy + 5-FU + oxaliplatin	TME	5-FU + oxaliplatin	
PETACC 6	RT 45 Gy + capecitabine versus	TME	Capecitabine versus	Accrual completed
	RT 45 Gy + capecitabine + oxaliplatin	TME	Capecitabine + oxaliplatin	

- ++ Toxicity & -- Compliance.
- Did not improve:
  1. R_0 RR.
  2. pCR.
  3. Sphincter Preservation

Curr Opin Oncol 2012, 24:441–447

Neoadjuvant Therapy:
Adding EGFR/VEGF Inhibition:

No Significant Added Benefit over Chemotherapy & Higher G 3 & 4 Adverse Events.

Curr Opin Oncol 2012, 24:441–447

Neoadjuvant Therapy: Indications:

1. T3 – T4 Lesions
2. Depth of Extramural Invasion:
   - T3 lesions (>5 mm) → ++ LNs involvement → Higher Cancer Specific Mortality (54% Versus 85%).
   - Selection of high risk T3 for treatment.
   - Approved outside US.
3. T1 – 2 lesions with Positive Nodes.
4. Low situated lesions.
5. Invasion of mesorectal fascia.

Br J Cancer 2000; 82:1131
www.uptodate.com (September 2015)

Neoadjuvant Therapy: Treatment Outcome:

- ypT_0N_0

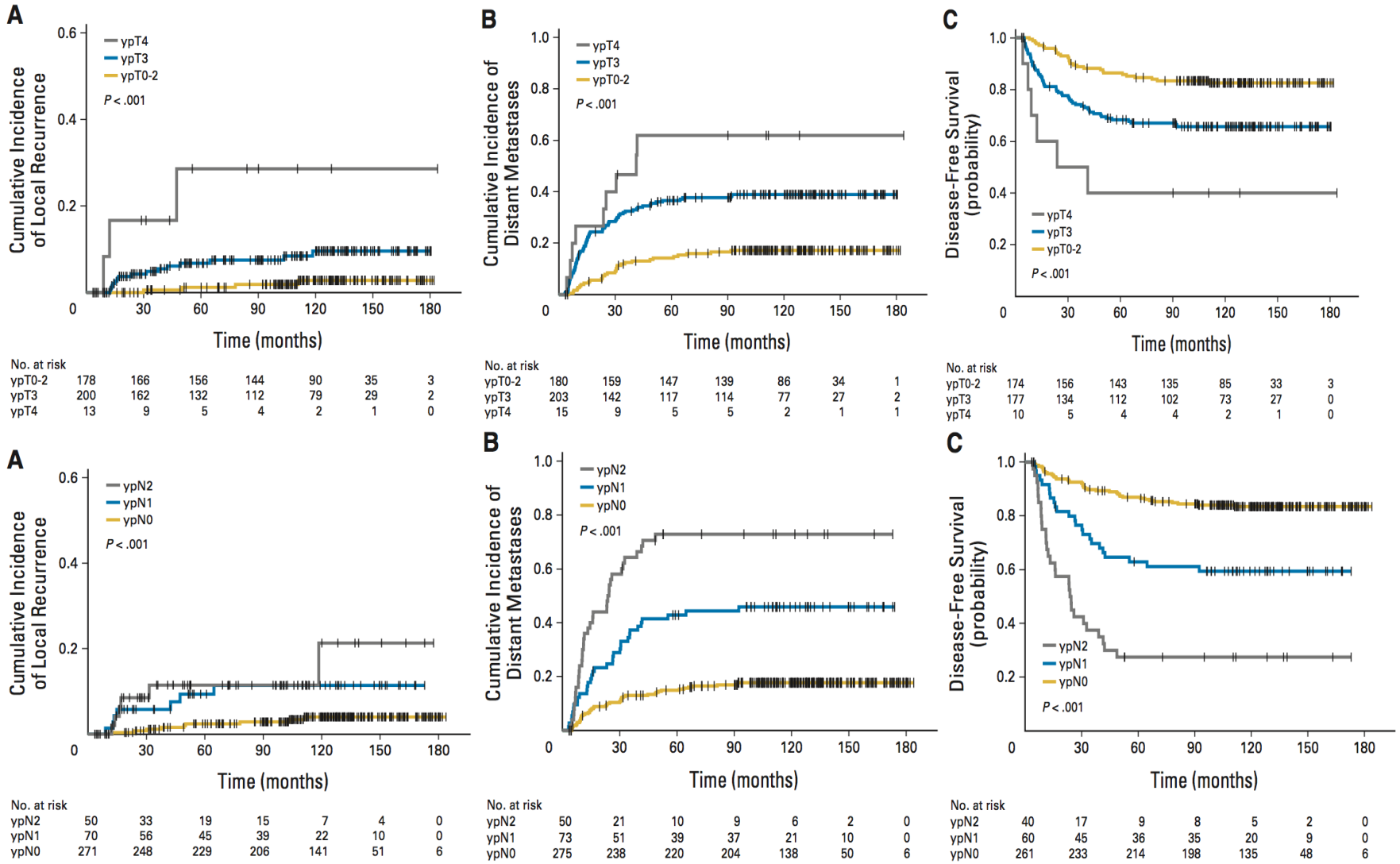
- 15 – 30%.
- Small & Less Advanced Lesions
- 10 – 12 Weeks.

- Involution to flat scar.
- DRE & Endoscopy.
- Imaging:
  - Endorectal US
  - PET-CT
  - MRI.

BIASED
NOT ACCEPTED

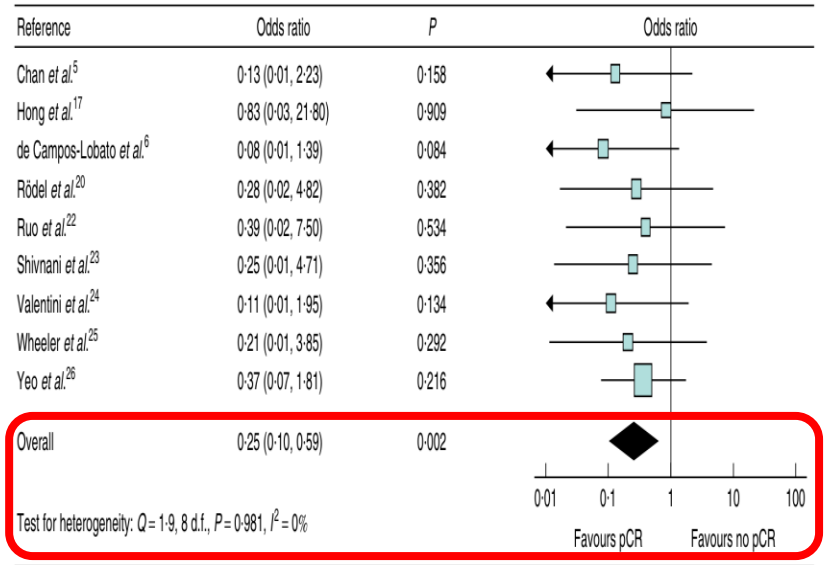
Martin R. et al. Surg Oncol Clin N Am 23 (2014) 113–125

Neoadjuvant Therapy: Treatment Outcome in Relation to pCR: German Study:



Neoadjuvant Therapy:

Impact of Pathological CR:

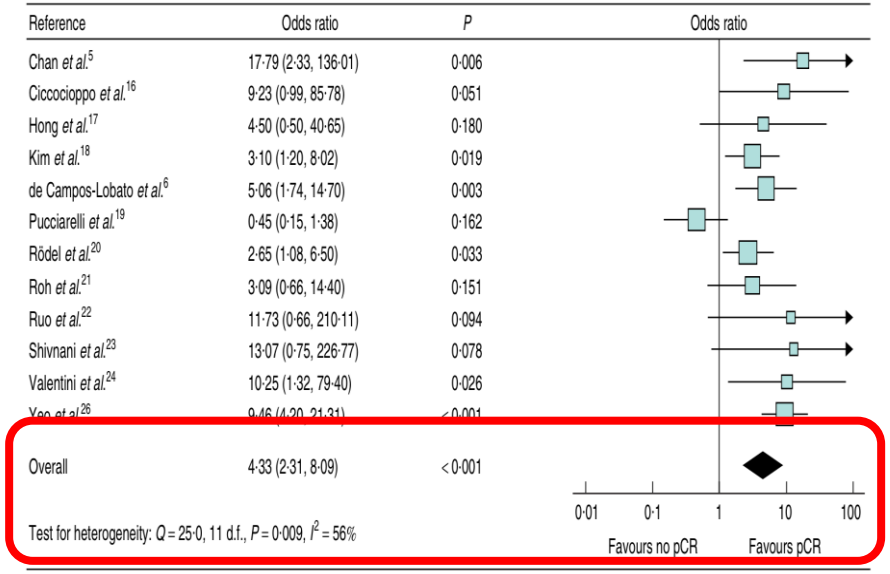


Reference	Odds ratio	P
Chan *et al.*[5]	0·13 (0·01, 2·23)	0·158
Hong *et al.*[17]	0·83 (0·03, 21·80)	0·909
de Campos-Lobato *et al.*[6]	0·08 (0·01, 1·39)	0·084
Rödel *et al.*[20]	0·28 (0·02, 4·82)	0·382
Ruo *et al.*[22]	0·39 (0·02, 7·50)	0·534
Shivnani *et al.*[23]	0·25 (0·01, 4·71)	0·356
Valentini *et al.*[24]	0·11 (0·01, 1·95)	0·134
Wheeler *et al.*[25]	0·21 (0·01, 3·85)	0·292
Yeo *et al.*[26]	0·37 (0·07, 1·81)	0·216
Overall	0·25 (0·10, 0·59)	0·002

Test for heterogeneity: $Q = 1·9$, 8 d.f., $P = 0·981$, $I^2 = 0\%$

Odds ratio: 0·01, 0·1, 1, 10, 100 — Favours pCR / Favours no pCR

a Local recurrence



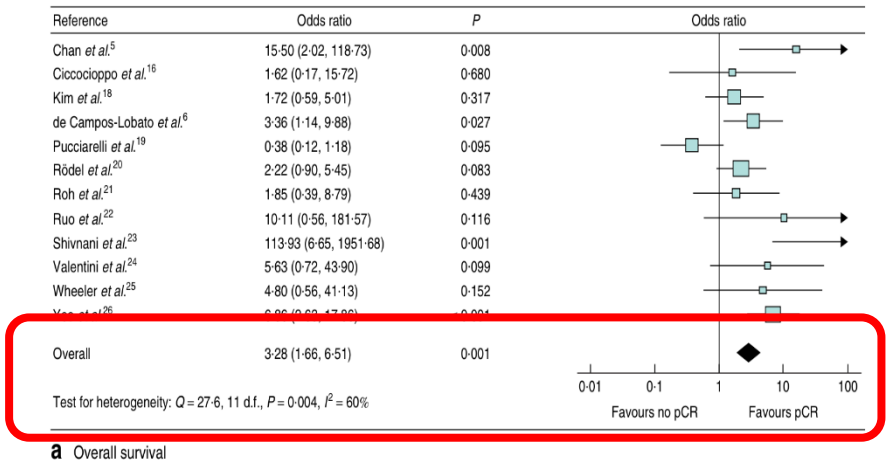
Reference	Odds ratio	P
Chan *et al.*[5]	17·79 (2·33, 136·01)	0·006
Ciccocioppo *et al.*[16]	9·23 (0·99, 85·78)	0·051
Hong *et al.*[17]	4·50 (0·50, 40·65)	0·180
Kim *et al.*[18]	3·10 (1·20, 8·02)	0·019
de Campos-Lobato *et al.*[6]	5·06 (1·74, 14·70)	0·003
Pucciarelli *et al.*[19]	0·45 (0·15, 1·38)	0·162
Rödel *et al.*[20]	2·65 (1·08, 6·50)	0·033
Roh *et al.*[21]	3·09 (0·66, 14·40)	0·151
Ruo *et al.*[22]	11·73 (0·66, 210·11)	0·094
Shivnani *et al.*[23]	13·07 (0·75, 226·77)	0·078
Valentini *et al.*[24]	10·25 (1·32, 79·40)	0·026
Yeo *et al.*[26]	9·46 (4·20, 21·31)	< 0·001
Overall	4·33 (2·31, 8·09)	< 0·001

Test for heterogeneity: $Q = 25·0$, 11 d.f., $P = 0·009$, $I^2 = 56\%$

Odds ratio: 0·01, 0·1, 1, 10, 100 — Favours no pCR / Favours pCR

b Disease-free survival

Can we Avoid Surgery?



Reference	Odds ratio	P
Chan *et al.*[5]	15·50 (2·02, 118·73)	0·008
Ciccocioppo *et al.*[16]	1·62 (0·17, 15·72)	0·680
Kim *et al.*[18]	1·72 (0·59, 5·01)	0·317
de Campos-Lobato *et al.*[6]	3·36 (1·14, 9·88)	0·027
Pucciarelli *et al.*[19]	0·38 (0·12, 1·18)	0·095
Rödel *et al.*[20]	2·22 (0·90, 5·45)	0·083
Roh *et al.*[21]	1·85 (0·39, 8·79)	0·439
Ruo *et al.*[22]	10·11 (0·56, 181·57)	0·116
Shivnani *et al.*[23]	113·93 (6·65, 1951·68)	0·001
Valentini *et al.*[24]	5·63 (0·72, 43·90)	0·099
Wheeler *et al.*[25]	4·80 (0·56, 41·13)	0·152
Yeo *et al.*[26]	6·66 (2·62, 17·00)	< 0·001
Overall	3·28 (1·66, 6·51)	0·001

Test for heterogeneity: $Q = 27·6$, 11 d.f., $P = 0·004$, $I^2 = 60\%$

Odds ratio: 0·01, 0·1, 1, 10, 100 — Favours no pCR / Favours pCR

a Overall survival

British Journal of Surgery 2012; 99: 918–928

Predicting Pathologic CR: Questions & Debates:

- **DRE:** Under estimation.
- **CT and ERUS :** Residual disease & nodes ($_{yp}$T0 → LN +ve = 2 – 9%)
- **Timing of Assessment:** 6 or 12 or 6 & 12 months?
- **CEA:** Cutoff Point = 2.7 ng/ml at 4 or 8 weeks?
- **Diffusion Weighted MRI:** Higher sensitivity and specificity.
- **Full Thickness Excision Biopsy**.
- **PET CT Scan:** 6 and 12 months.
- **Molecular Signature**: 33 & 54 genes signatures.

Chawla et al. Am J Clin Oncol 2015;38:534–540

Can we Avoid Surgery?

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ORIGINAL REPORT

Wait-and-See Policy for Clinical Complete Responders After Chemoradiation for Rectal Cancer

Monique Maas, Regina G.H. Beets-Tan, Doenja M.J. Lambregts, Guido Lammering, Patty J. Nelemans, Sanne M.E. Engelen, Ronald M. van Dam, Rob L.H. Jansen, Meindert Sosef, Jeroen W.A. Leijtens, Karel W.E. Hulsewé, Jeroen Buijsen, and Geerard L. Beets

See accompanying editorial on page 4604; listen to the podcast by Dr Kachnic at www.jco.org/podcasts

Can Surgery be Avoided After Preoperative Chemoradiation for Rectal Cancer in the Era of Organ Preservation? Current Review of Literature

Sheema Chawla, MD, Alan W. Katz, MD, MPH,† Stephen M. Rauh, MD,‡ and John R. T. Monson, MD, FRCS, FACS§*

Abstract: Approximately 10% to 25% of patients have a pathologic complete response after neoadjuvant chemoradiation. There is a compelling argument for attempting to avoid surgery in carefully selected groups of patients. Although nerve-preserving surgical techniques are now standard, the rates of urinary and sexual dysfunction are significant. Also, although sphincter function and quality of life among patients undergoing an ultra-low anterior resection is acceptable, results are poorer than expected and may be disabling. Trials of omission of surgery for selected patients with complete response after preoperative chemoradiation, otherwise known as "Watch and Wait," have shown favorable long-term results. We review the current literature on accepted standards of care and identify areas of controversy and important ongoing clinical studies aiming to resolve these issues.

Key Words: rectal cancer, organ preservation, neoadjuvant chemoradiation

(*Am J Clin Oncol* 2015;38:534–540)

TABLE 1. Selected Series of Reports of Nonoperative Approach in Rectal Cancer Treated by CRT

References (Institution)	Patients Treated	Follow-up (mo)	cCR (n [%])	Outcomes		
				Locoregional Failure	Disease-free Survival	Overall Survival
Habr-Gama et al[16] (Brazil)	265	57	71 (26.8)	2/71 (2.8%)	83% (5 y)	88% (5 y)
Habr-Gama et al[18] (Brazil)	361	60	99 (27.4)	5/99 (5%)	85% (5 y)	93% (5 y)
Habr-Gama et al[19] (Brazil)	360	NS	99 (27.5)	6/99 (6%)	NS	NS
Habr-Gama et al[20] (Brazil)	173	65	67 (39)	8/173 (4.6%)	72% (5 y)	96% (5 y)
Maas et al[22] (The Netherlands)	192	35±23 (Mean)	21 (11)	1/21 (5%)	89% (2 y)	100% (2 y)
Dalton et al[23] (England)	49	26	12 (24)	Biopsy negative: all NED Biopsy positive: 2/6 distant failure		
Smith et al[24] (MSKCC)	265	28	32 (12)	6/32 (19%)	88% (2 y)	96% (2 y)

cCR indicates clinical complete response; CRT, chemoradiation; MSKCC, Memorial Sloan-Kettering Cancer Center; NED, no evidence of disease, NS, not stated.

There may be patients with a pCR after neoadjuvant therapy who *may be* candidates for a "watch-and-wait" approach—thus avoiding surgery—which is the subject of current clinical investigation

World Journal of Gastrointestinal Surgery

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MINIREVIEWS

Watch and wait approach to rectal cancer: A review

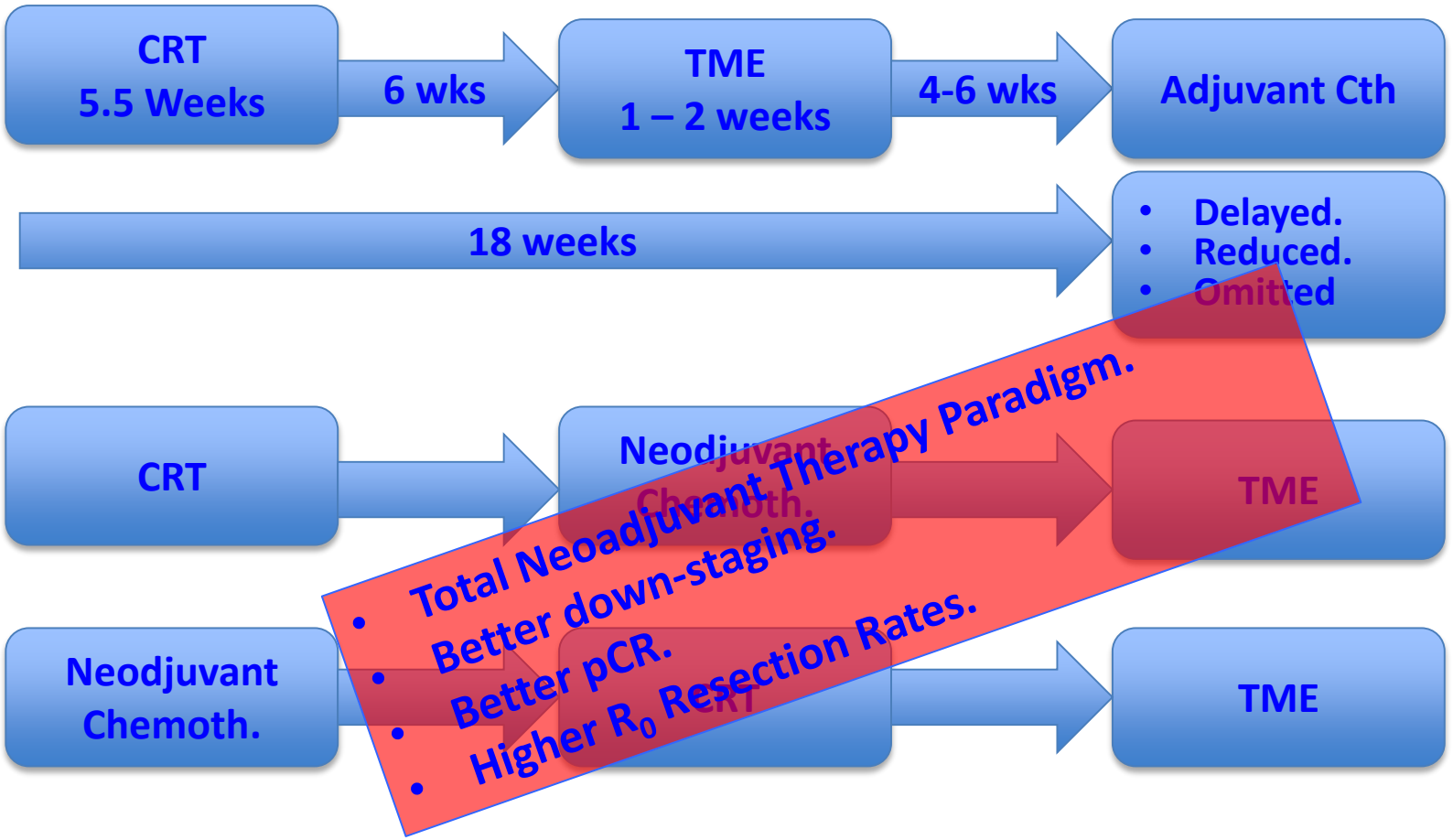
Marcos E Pozo, Sandy H Fang

Table 1 Watch and wait protocol surveillance schedule (adapted from Habr-Gama *et al*[10])

Assessment of complete response	Initial assessment	First year	Second year	Third year and after
DRE	10 wk	Every 1-2 mo	Every 3 mo	Every 6 mo
CEA	10 wk	Every 1-2 mo	Every 3 mo	Every 6 mo
Endoscopic assessment	10 wk	Every 1-2 mo	Every 3 mo	Every 6 mo
MRI	10 wk	If 1st assessment normal with cCR, then every 6 mo	Every 6 mo	Every 6 mo

Habr-Gama A, São Julião GP, Perez RO. Nonoperative manage ment of rectal cancer: identifying the ideal patients. Hematol Oncol Clin North Am 2015; 29: 135151 [PMID: 25475576 DOI: 10.1016/j.hoc.2014.09.004]

Neoadjuvant Therapy: Problems with Current Practice:

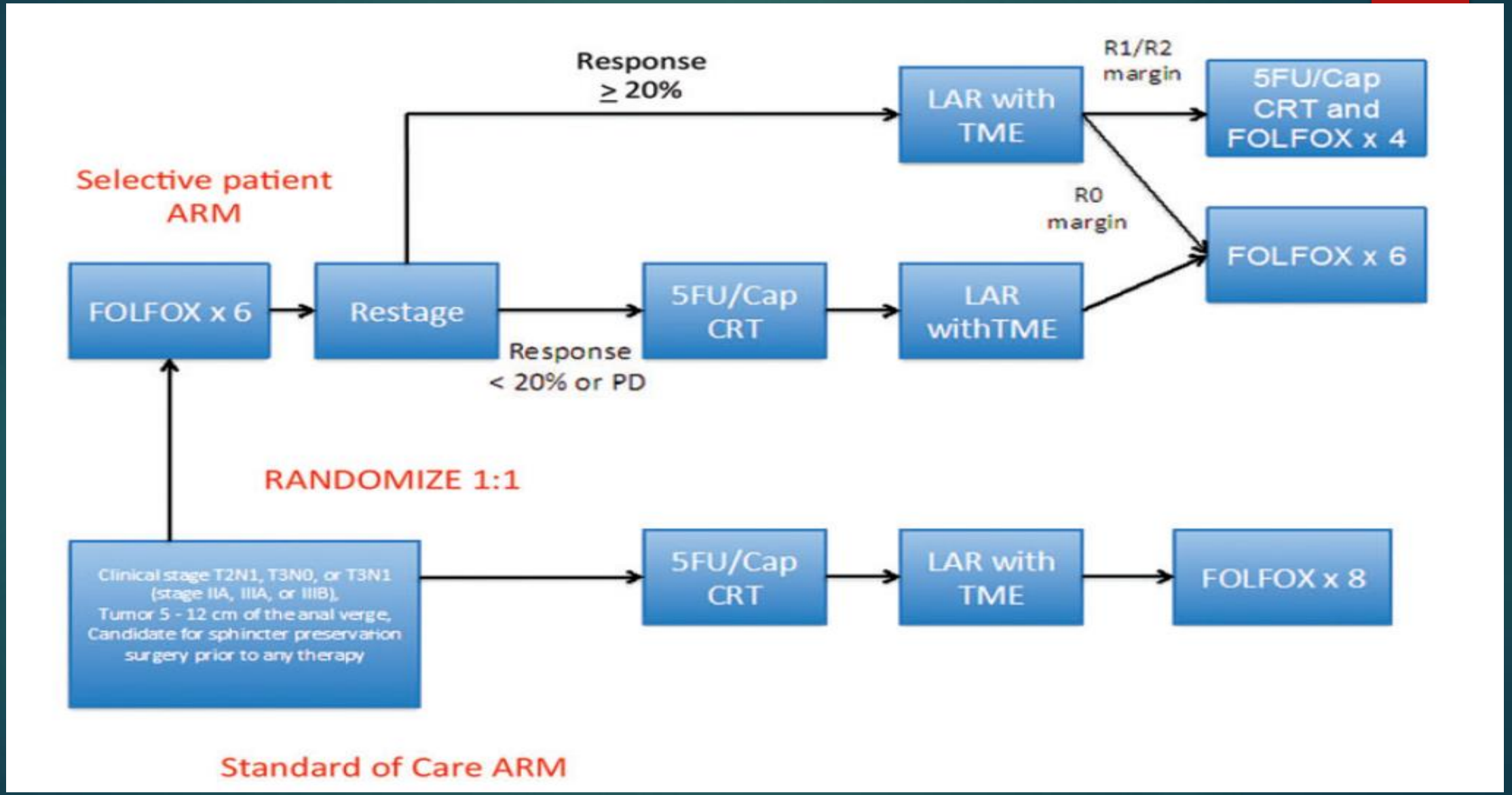


Adopted from Deborah Schrag's Presentation at 2015 ASCO Annual Meeting

The Art of Today:

- Radical resection remains the cornerstone in management regardless the achieved response.
- The identification of patients with pCR is challenging, however, patients should be informed about watch and wait strategy.
- Data showed higher incidence of relapse during the 1st year then becoming comparable to those following radical surgery → intensive follow up during the 1st year.
- Adoption of MDT should be encouraged.
- The need for more clinical trials is highly appreciated.

PROSPECT Trial



Conclusion

Preoperative chemoradiotherapy, compared with postoperative chemoradiotherapy, ***significantly improved DFS and showed a trend toward improved OS.***