Meta analysis in Rectal Cancer

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Areas of meta analysis in rectal cancers

- Epidemiology and risk factors
- Diagnostics
- Molecular pathology and Genetics
- Surgical approach and techniques
- Timing of RT/chemo
- Efficacy of chemotherapy
- Wait and watch

Epidemiology and risk factors

World Cancer Research Fund

American Institute for Cancer Research

CUP Continuous Update Project

Analysing research on cancer prevention and survival

Diet, nutrition, physical activity and colorectal cancer

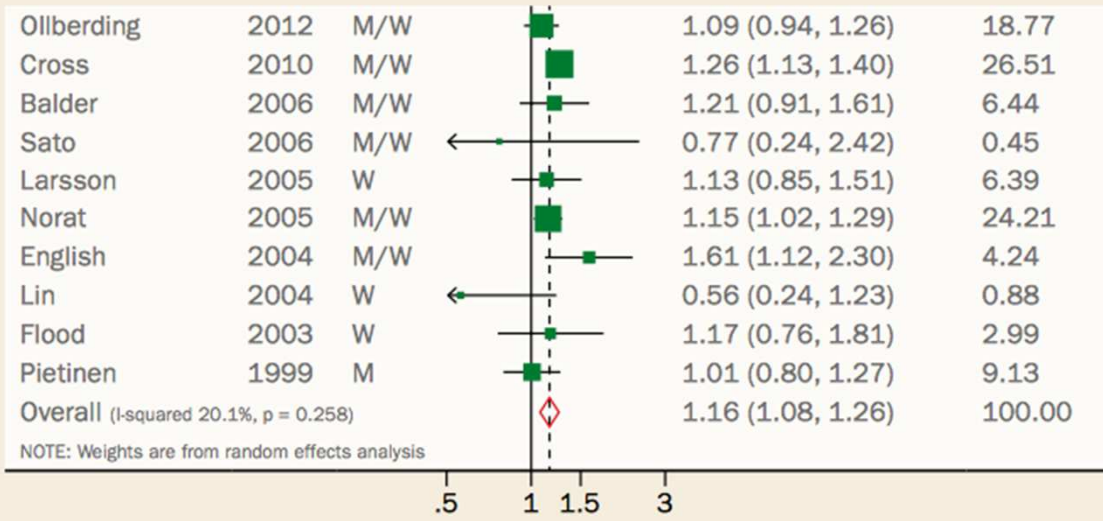
2017

Processed meat and colorectal cancer

ble 14: Summary of CUP 2016 cancer site dose-response meta-analyses – ocessed meat

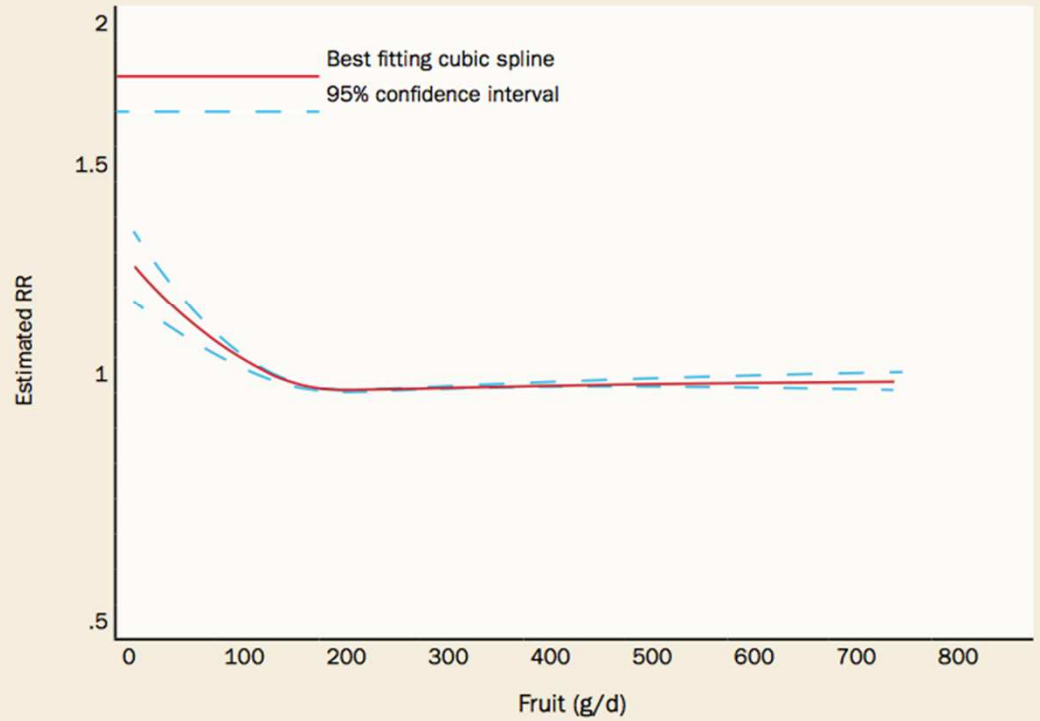
Analysis	Sex	Increment	RR (95% CI)	I^2	No. Studies	No. Cases
Colorectal cancer	M	Per 50 g/day	1.11 (0.86–1.43)	34%	2	-
	W	Per 50 g/day	1.18 (0.99–1.41)	19%	5	-
Colon cancer	M/W	Per 50 g/day	1.23 (1.11–1.35)	26%	12	8,599
Rectal cancer	M/W	Per 50 g/day	1.08 (1.00–1.18)	0%	10	3,029

Figure 8: Dose-response meta-analysis of processed meat and colorectal cancer per 50 grams per day



Fruit intake and CRC

Figure 5: Non-linear dose-response association of fruit intake and colorectal cancer



Alcohol and CRC

Figure 18: Non-linear dose-response associations of alcohol (as ethanol) intake and colorectal cancer

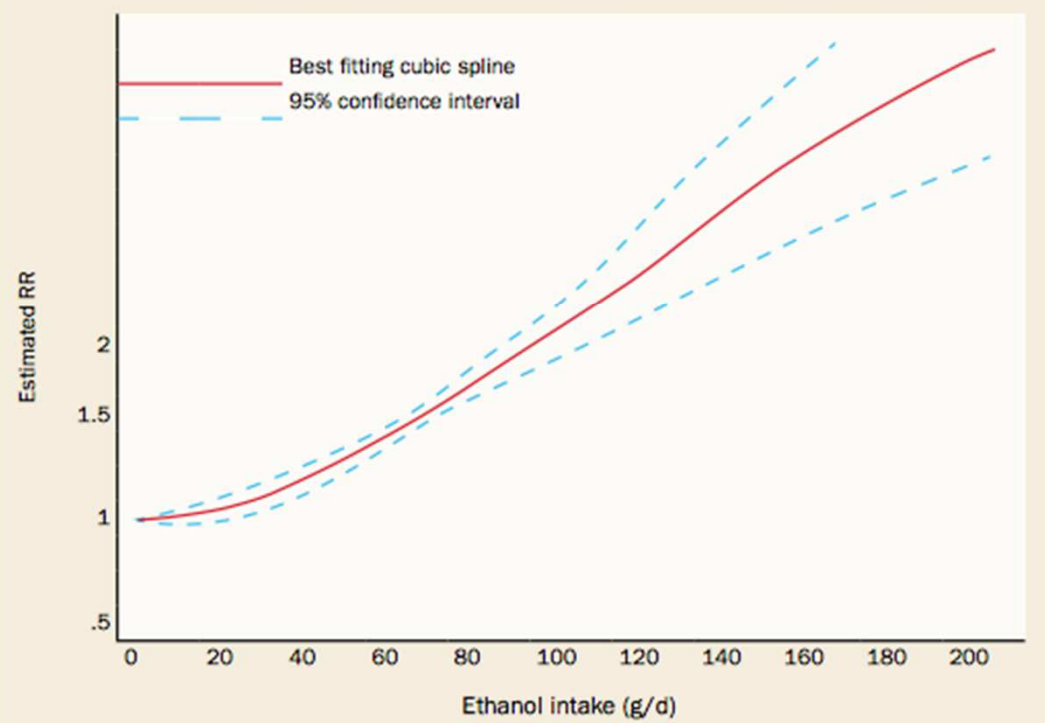
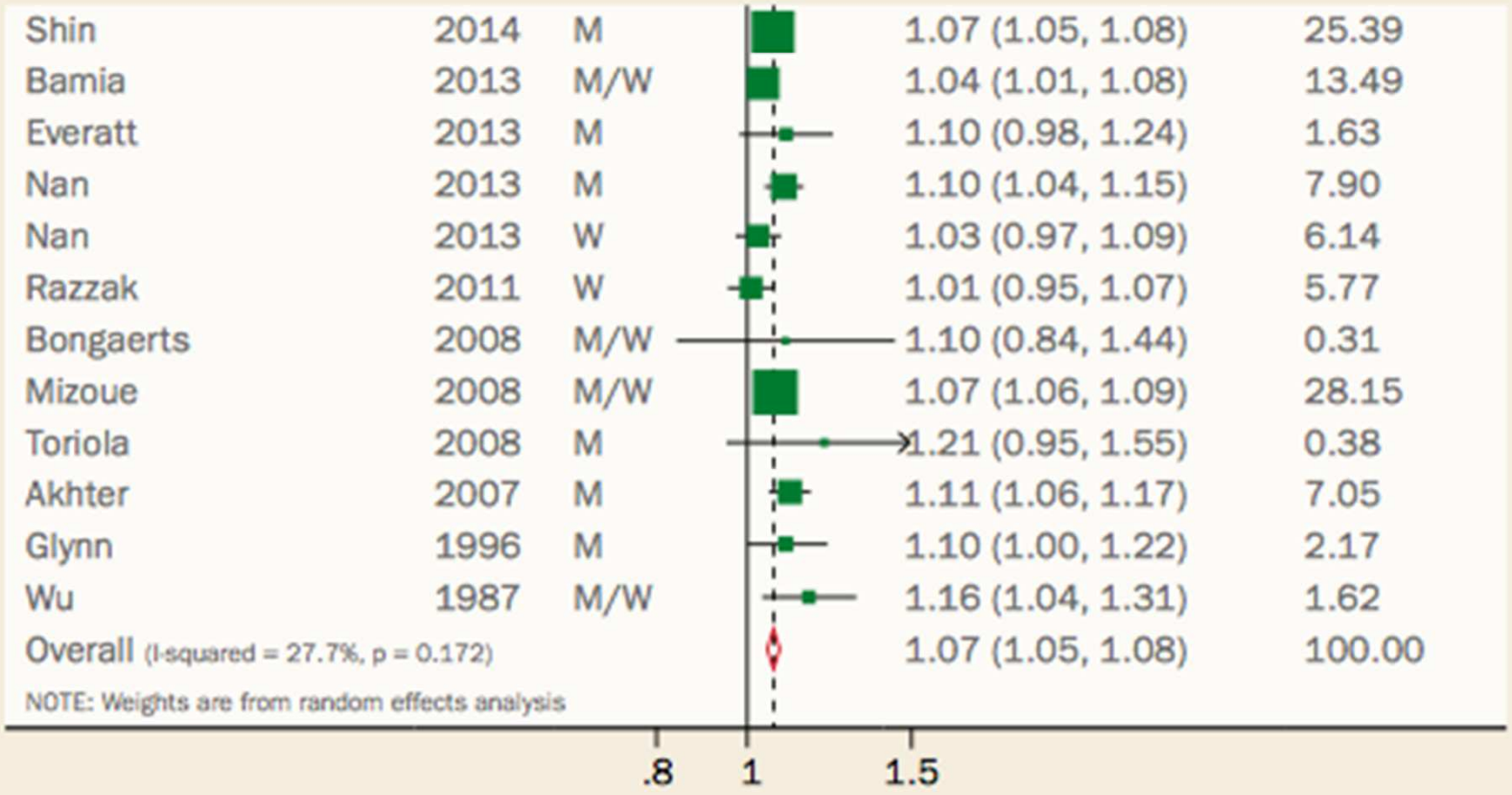


Figure 17: Dose-response meta-analysis of alcohol (as ethanol) and colorectal cancer per 10 grams per day



Association Between Dietary Inflammation Index and The Risk of Colorectal Cancer: A Meta-Analysis

Caixia Zhang, Weijing Wang & Dongfeng Zhang

To cite this article: Caixia Zhang, Weijing Wang & Dongfeng Zhang (2017): Association Between Dietary Inflammation Index and The Risk of Colorectal Cancer: A Meta-Analysis, Nutrition and Cancer, DOI: 10.1080/01635581.2017.1374418

To link to this article: http://dx.doi.org/10.1080/01635581.2017.1374418

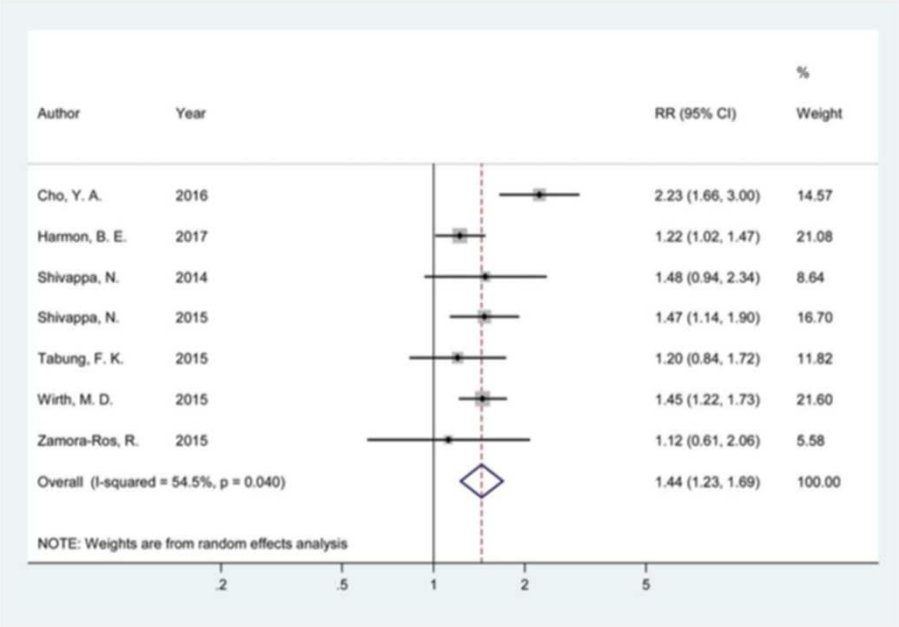
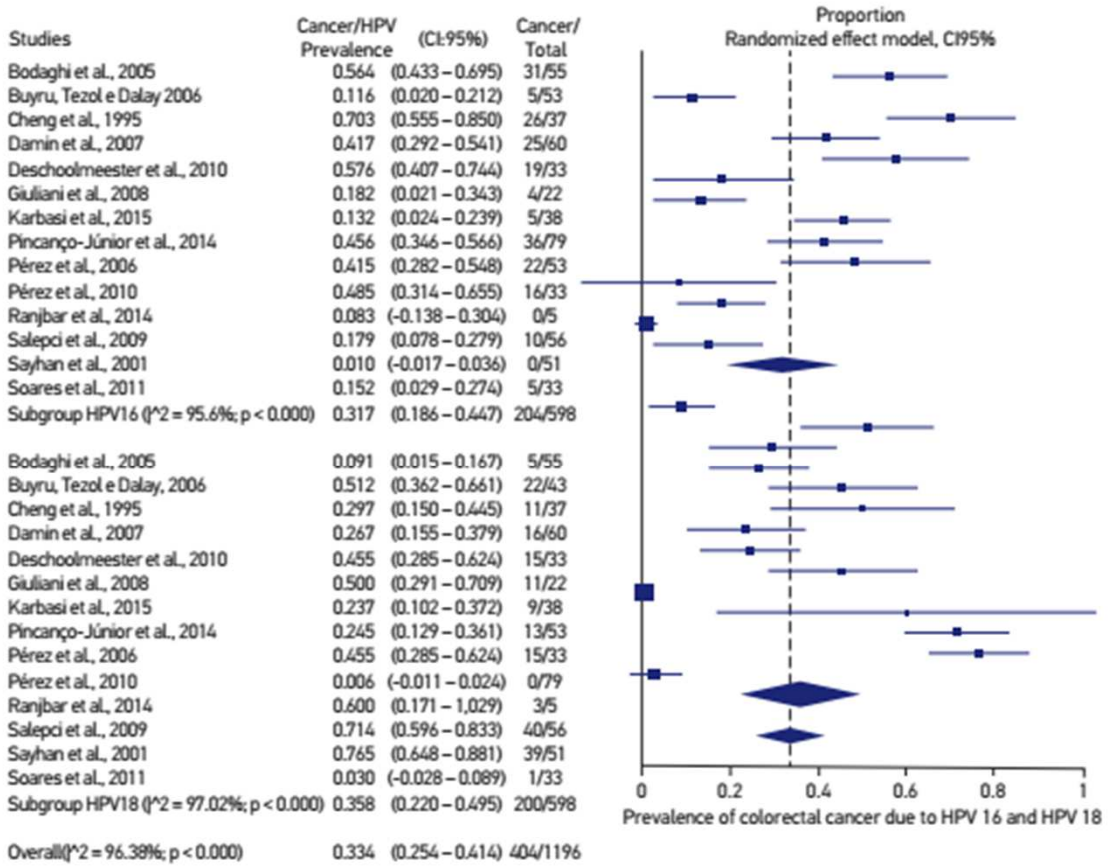


Figure 3. Forest plot of the relative risks (RRs) with corresponding 95% confidence intervals (CIs) of studies on DII and rectal cancer.

2017	DIET, NUTRITION, PHYSICAL ACTIVITY AND COLORECTAL CANCER 2017		
		DECREASES RISK	INCREASES RISK
STRONG EVIDENCE	Convincing	Physical activity[1,2]	Processed meat[3] Alcoholic drinks[4] Body fatness[5] Adult attained height[6]
	Probable	Wholegrains Foods containing dietary fibre[7] Dairy products[8] Calcium supplements[9]	Red meat[10]
LIMITED EVIDENCE	Limited – suggestive	Foods containing vitamin C[11] Fish Vitamin D[12] Multivitamin supplements[13]	Low intakes of non-starchy vegetables[14] Low intakes of fruits[14] Foods containing haem iron[15]
	Limited – no conclusion	Cereals (grains) and their products; potatoes; animal fat; poultry; shellfish and other seafood; fatty acid composition; cholesterol; dietary n-3 fatty acid from fish; legumes; garlic; non-dairy sources of calcium; foods containing added sugars; sugar (sucrose); coffee; tea; caffeine; carbohydrate; total fat; starch; glycaemic load; glycaemic index; folate; vitamin A; vitamin B6; vitamin E; selenium; low fat; methionine; beta-carotene; alpha-carotene; lycopene; retinol; energy intake; meal frequency; dietary pattern	

World Cancer Research Fund International/American Institute for Cancer Research. Continuous Update Project Report: Diet, Nutrition, Physical Activity and Colorectal Cancer. 2017. Available at: **wcrf.org/colorectal-cancer-2017**.

Colorectal cancer prevalence linked to human papillomavirus: a systematic review with meta-analysis



- Colorectal cancer owing to HPV was diagnosed in 51.8% of cases.
- Of these, the majority was linked to HPV 16 and 18
- Similarity between genders.

Figure 3: Estimate of colorectal cancer due to human papillomavirus 16 and 18.

Pelizzer T et al; Rev. bras. epidemiol. vol.19 no.4 São Paulo Oct./Dec. 201

Timing of RT

Preoperative Radiotherapy for Resectable Rectal Cancer

Article *in* JAMA The Journal of the American Medical Association · August 2000

DOI: 10.1001/jama.284.8.1008 · Source: PubMed

e 1. Overall Mortality

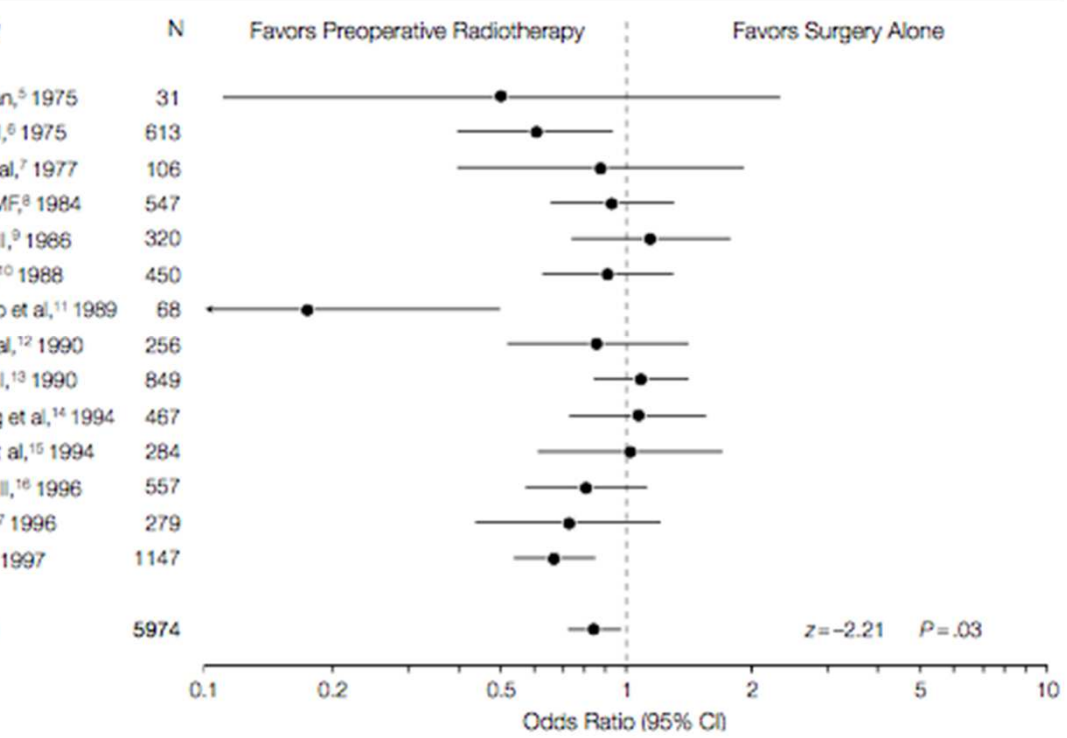


Figure 2. Cancer-Related Mortality

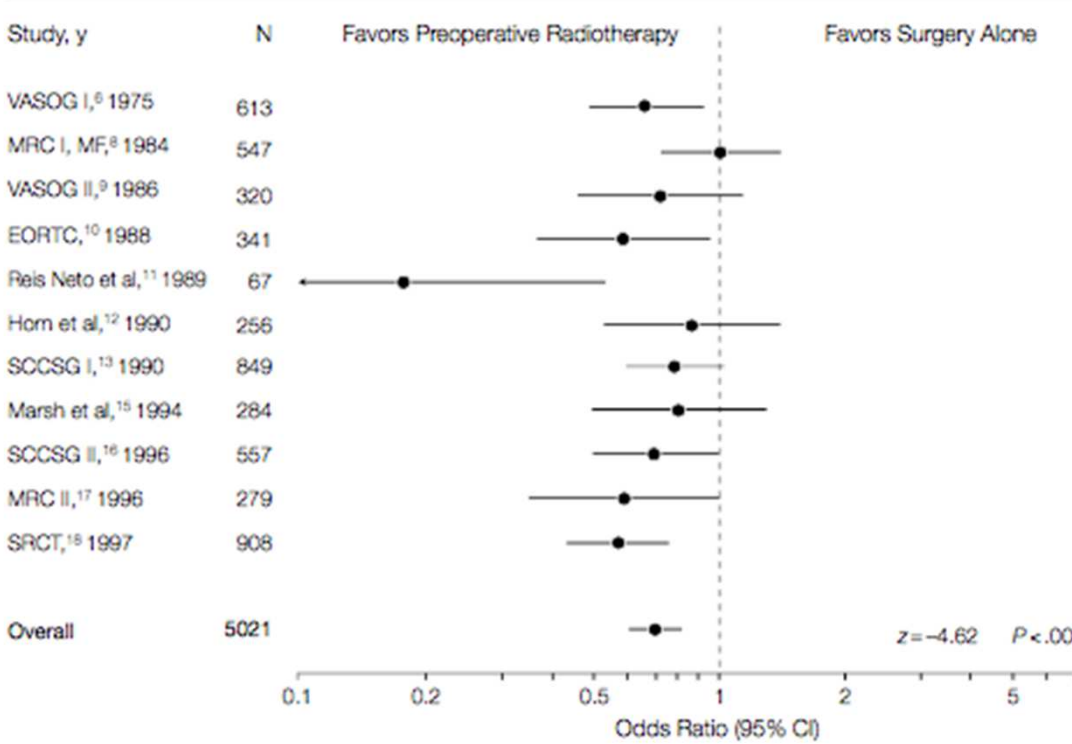
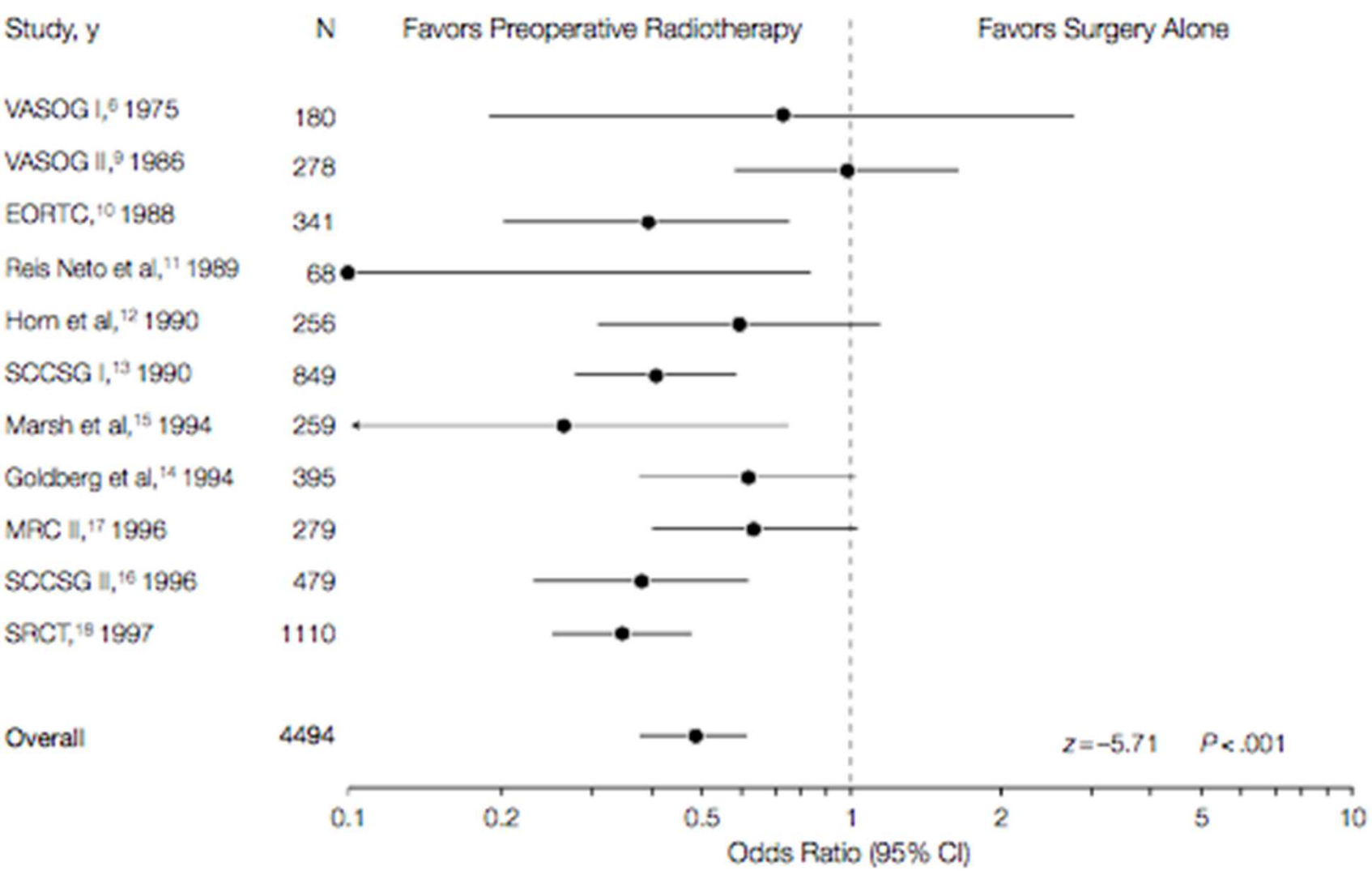


Figure 3. Local Recurrence



Ann Surg Oncol (2013) 20:4169–4182
DOI 10.1245/s10434-013-3198-9

Annals of
SURGICAL ONCOLOGY
OFFICIAL JOURNAL OF THE SOCIETY OF SURGICAL ONCOLOGY

ORIGINAL ARTICLE – COLORECTAL CANCER

Neoadjuvant Radiotherapy for Rectal Cancer: Meta-analysis of Randomized Controlled Trials

Nuh N. Rahbari, MD[1], Heike Elbers, MD[1], Vasileios Askoxylakis, MD[2], Edith Motschall[3], Ulrich Bork, MD[4], Markus W. Büchler, MD[1], Jürgen Weitz, MD[4], and Moritz Koch, MD[4]

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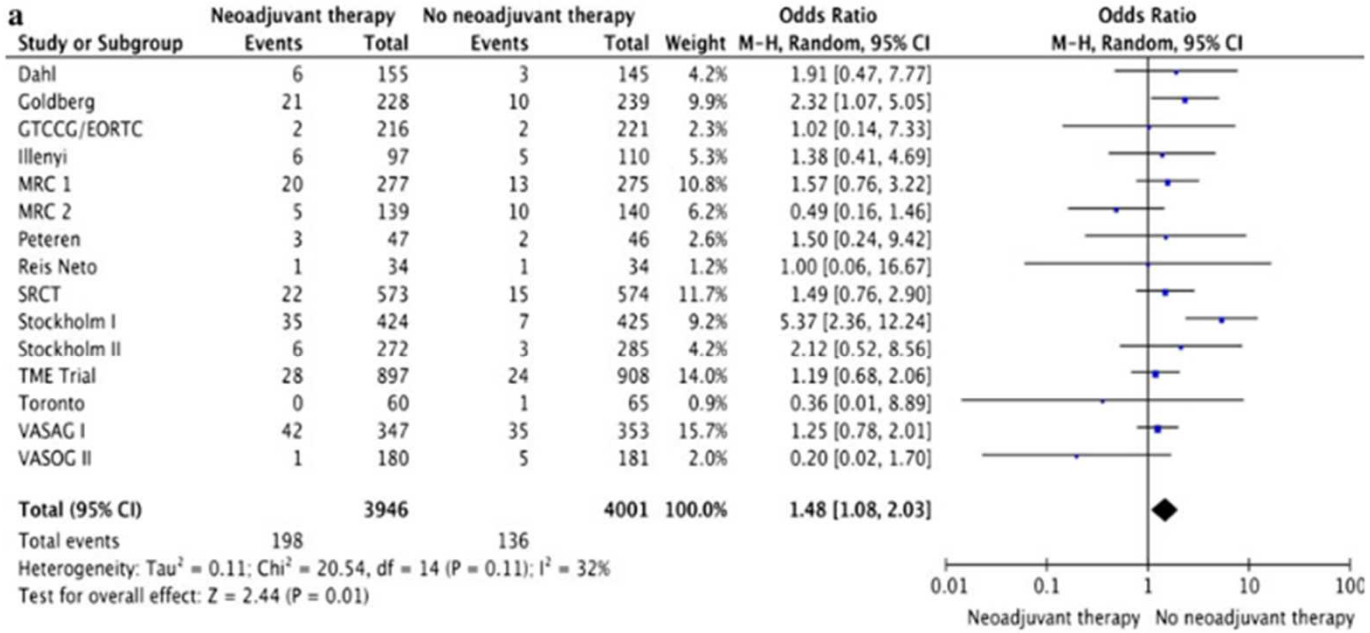
Meta analysis of Perioperative mortality



a

Study or Subgroup	Neoadjuvant therapy Events	Total	No neoadjuvant therapy Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Dahl	6	155	3	145	4.2%	1.91 [0.47, 7.77]
Goldberg	21	228	10	239	9.9%	2.32 [1.07, 5.05]
GTCCG/EORTC	2	216	2	221	2.3%	1.02 [0.14, 7.33]
Illenyi	6	97	5	110	5.3%	1.38 [0.41, 4.69]
MRC 1	20	277	13	275	10.8%	1.57 [0.76, 3.22]
MRC 2	5	139	10	140	6.2%	0.49 [0.16, 1.46]
Peteren	3	47	2	46	2.6%	1.50 [0.24, 9.42]
Reis Neto	1	34	1	34	1.2%	1.00 [0.06, 16.67]
SRCT	22	573	15	574	11.7%	1.49 [0.76, 2.90]
Stockholm I	35	424	7	425	9.2%	5.37 [2.36, 12.24]
Stockholm II	6	272	3	285	4.2%	2.12 [0.52, 8.56]
TME Trial	28	897	24	908	14.0%	1.19 [0.68, 2.06]
Toronto	0	60	1	65	0.9%	0.36 [0.01, 8.89]
VASAG I	42	347	35	353	15.7%	1.25 [0.78, 2.01]
VASOG II	1	180	5	181	2.0%	0.20 [0.02, 1.70]
Total (95% CI)		**3946**		**4001**	**100.0%**	**1.48 [1.08, 2.03]**
Total events	198		136			

Heterogeneity: $Tau^2 = 0.11$; $Chi^2 = 20.54$, df = 14 (P = 0.11); $I^2 = 32\%$

Test for overall effect: Z = 2.44 (P = 0.01)

Odds Ratio M-H, Random, 95% CI

0.01 0.1 1 10 100

Neoadjuvant therapy No neoadjuvant therapy

All studies

b

Study or Subgroup	Neoadjuvant therapy Events	Total	No neoadjuvant therapy Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
SRCT	241	573	190	574	19.1%	1.47 [1.15, 1.87]
Stockholm I	112	424	81	425	15.7%	1.52 [1.10, 2.11]
Stockholm II	111	272	79	285	14.6%	1.80 [1.26, 2.56]
TME Trial	336	897	297	908	21.0%	1.23 [1.02, 1.50]
Toronto	0	60	1	65	0.4%	0.36 [0.01, 8.89]
VASAG I	184	347	187	353	16.8%	1.00 [0.74, 1.35]
VASOG II	63	180	77	181	12.3%	0.73 [0.48, 1.11]
Total (95% CI)		**2753**		**2791**	**100.0%**	**1.25 [1.02, 1.54]**
Total events	1047		912			

Heterogeneity: $Tau^2 = 0.04$; $Chi^2 = 16.04$, df = 6 (P = 0.01); $I^2 = 63\%$

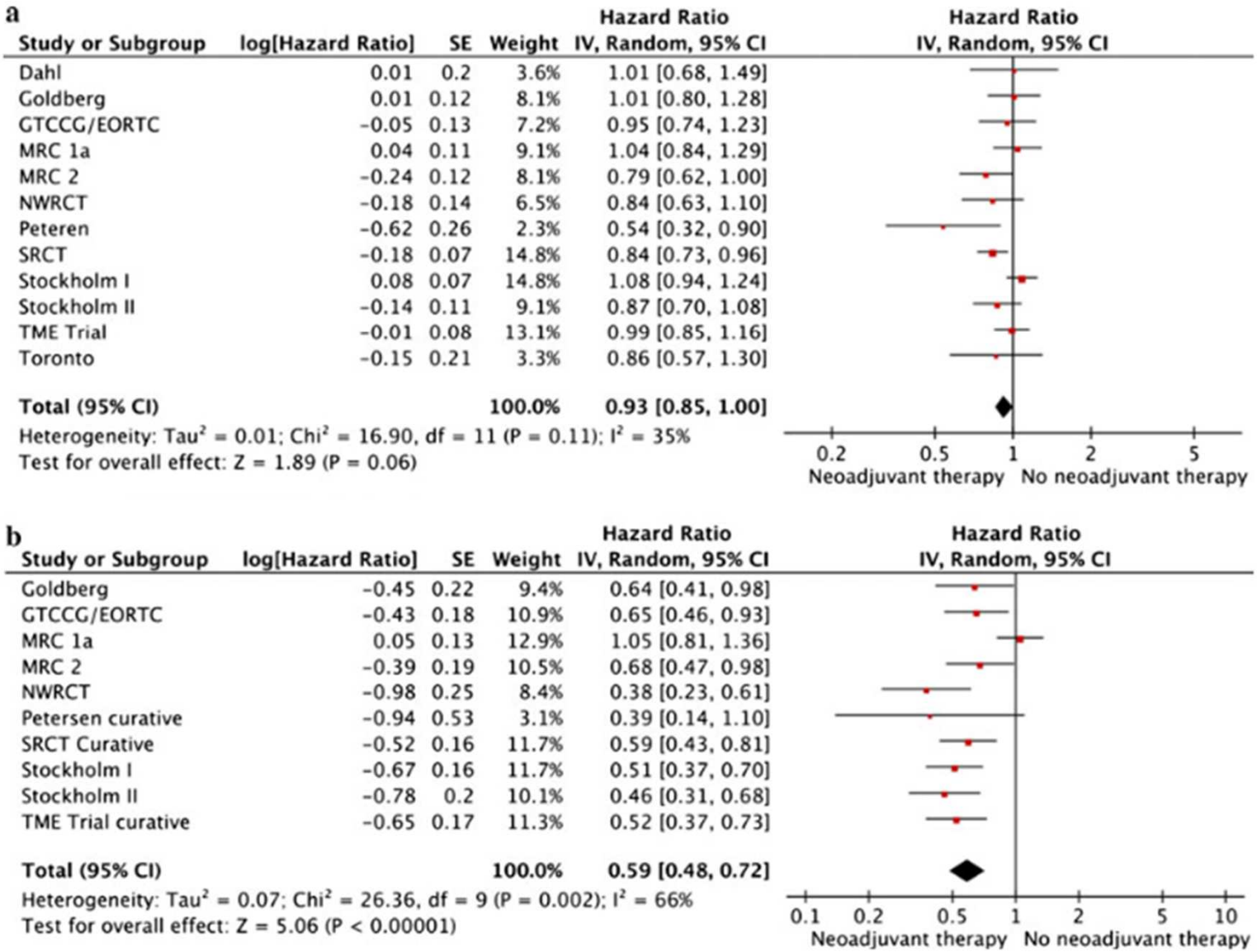
Test for overall effect: Z = 2.16 (P = 0.03)

Odds Ratio M-H, Random, 95% CI

0.05 0.2 1 5 20

Neoadjuvant therapy No neoadjuvant therapy

Subgroup analysis of studies with radiation dose of >5Gy/fr



. 3 Meta-analyses on **a** overall survival and **b** local recurrence-free survival in studies comparing neoadjuvant therapy to surgery alone

Preoperative chemoradiation versus radiation alone for stage II and III resectable rectal cancer (Review)

De Caluwé L, Van Nieuwenhove Y, Ceelen WP

Cochrane Database of Systematic Reviews 2013, Issue 2. Art. No.: CD006041. DOI: 10.1002/14651858.CD006041.p

Local Recurrence at 5 yrs

Figure 1. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.10 Local Recurrence at 5y.

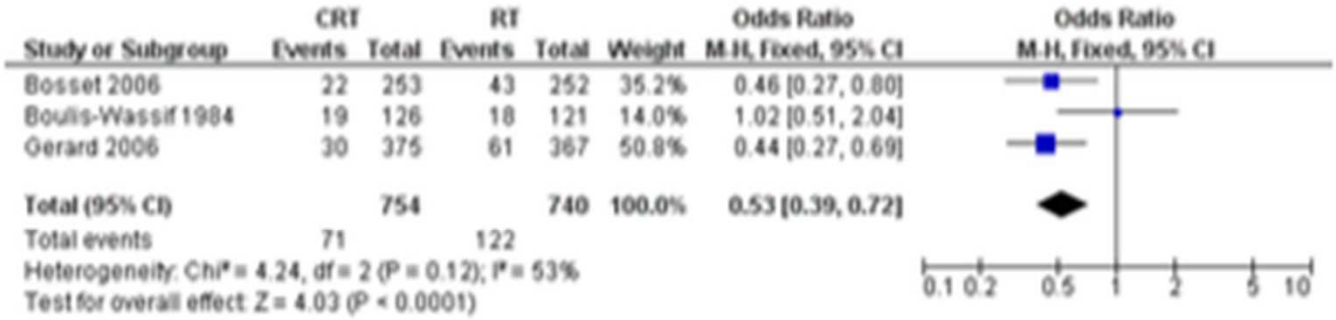


Figure 2. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.12 HR'LR.

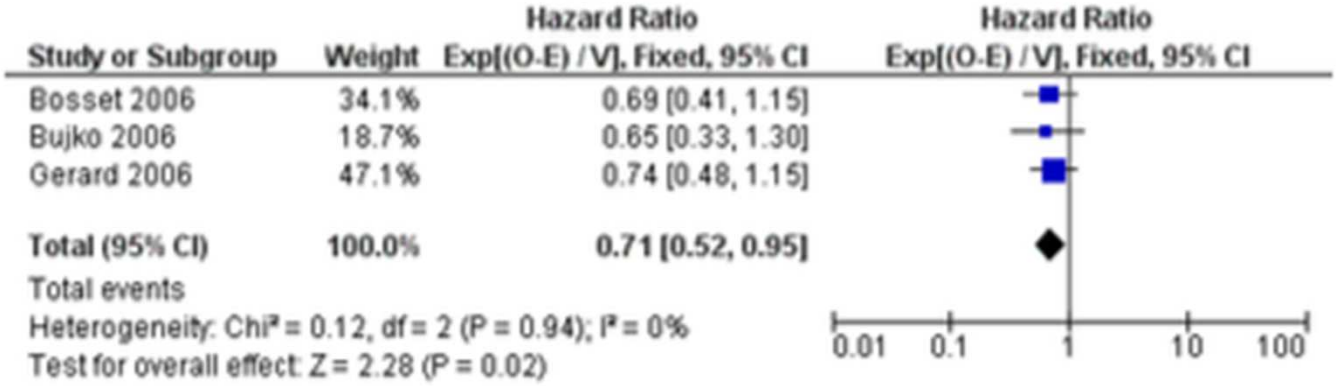
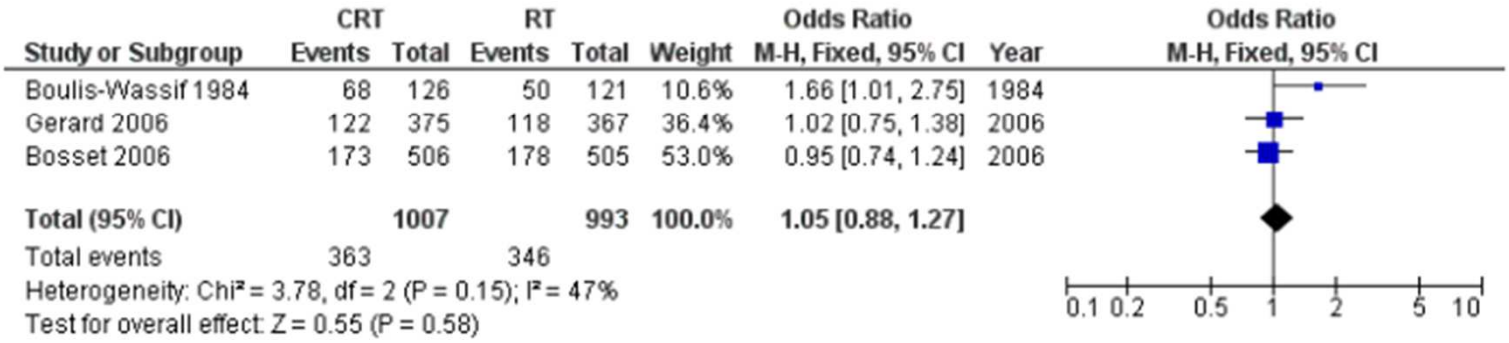
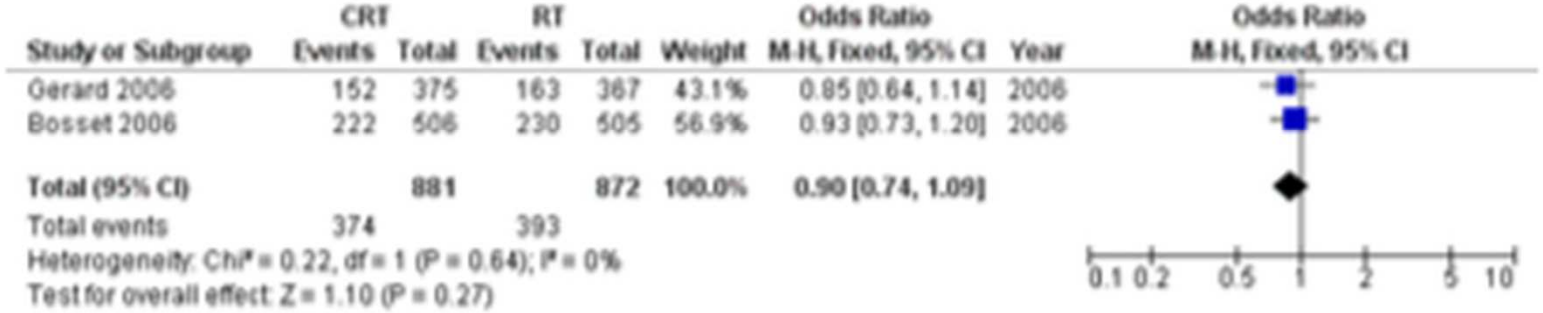


Figure 3. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.1 Overall Survival at 5y.



5-ys OS

Figure 5. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.3 Disease free survival at 5 y.



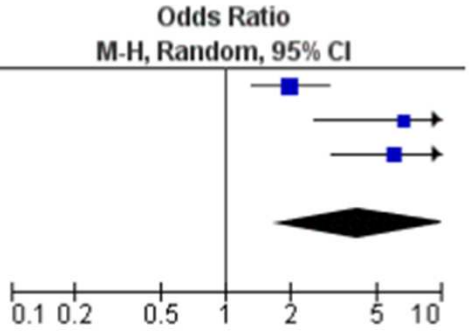
5-ys DFS

Toxicity

Figure 7. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.6 Grade III - IV toxicity.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	67	483	37	495	38.4%	1.99 [1.31, 3.04]
Bujko 2006	29	157	5	155	28.0%	6.80 [2.56, 18.07]
Gerard 2006	55	375	10	367	33.6%	6.14 [3.08, 12.24]
Total (95% CI)		**1015**		**1017**	**100.0%**	**4.10 [1.68, 10.00]**
Total events	151		52			

Heterogeneity: Tau² = 0.49; Chi² = 10.57, df = 2 (P = 0.005); I² = 81%
Test for overall effect: Z = 3.10 (P = 0.002)



Sphincter preservation

Figure 8. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.7 Sphincter preservation.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	263	473	249	475	45.0%	1.14 [0.88, 1.47]
Boulis-Wassif 1984	13	124	6	121	2.9%	2.24 [0.82, 6.11]
Bujko 2006	87	157	87	155	14.7%	0.97 [0.62, 1.52]
Gerard 2006	188	357	185	357	34.1%	1.03 [0.77, 1.39]
Latkauskas 2011	32	46	26	37	3.3%	0.97 [0.38, 2.49]
Total (95% CI)		**1157**		**1145**	**100.0%**	**1.09 [0.92, 1.30]**
Total events	583		553			

Heterogeneity: Tau² = 0.00; Chi² = 2.54, df = 4 (P = 0.64); I² = 0%
Test for overall effect: Z = 1.00 (P = 0.32)

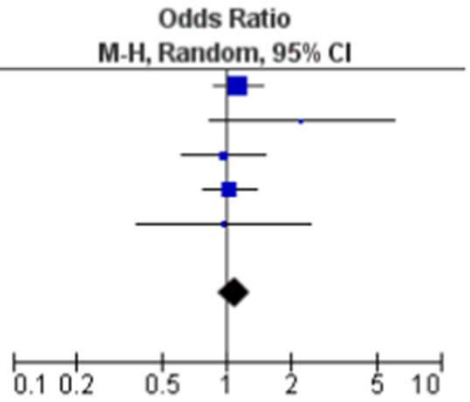
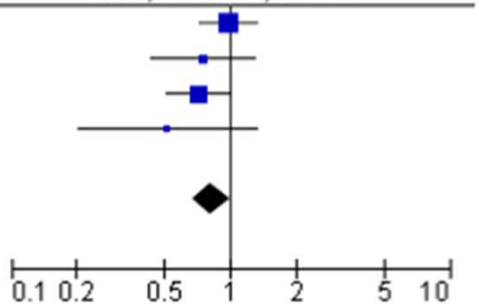


Figure 10. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.5 Postop morbidity.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	111	487	112	483	46.2%	0.98 [0.73, 1.32]
Bujko 2006	31	152	39	153	14.3%	0.75 [0.44, 1.28]
Gerard 2006	75	359	97	360	34.7%	0.72 [0.51, 1.01]
Latkauskas 2011	12	46	15	37	4.8%	0.52 [0.20, 1.31]
Total (95% CI)		**1044**		**1033**	**100.0%**	**0.82 [0.67, 1.00]**
Total events	229		263			

Heterogeneity: Tau² = 0.00; Chi² = 2.98, df = 3 (P = 0.40); I² = 0%
Test for overall effect: Z = 1.92 (P = 0.05)

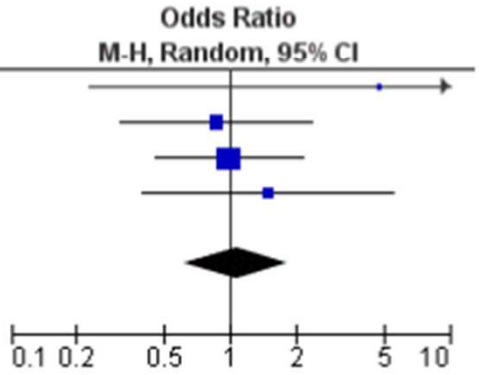


Post op morbidity

Figure 11. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.9 Anastomotic leak.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	2	267	0	255	3.2%	4.81 [0.23, 100.71]
Bujko 2006	8	87	9	86	29.5%	0.87 [0.32, 2.36]
Gerard 2006	14	188	14	185	50.0%	0.98 [0.45, 2.12]
Latkauskas 2011	7	46	4	37	17.2%	1.48 [0.40, 5.50]
Total (95% CI)		**588**		**563**	**100.0%**	**1.07 [0.62, 1.84]**
Total events	31		27			

Heterogeneity: Tau² = 0.00; Chi² = 1.40, df = 3 (P = 0.71); I² = 0%
Test for overall effect: Z = 0.24 (P = 0.81)

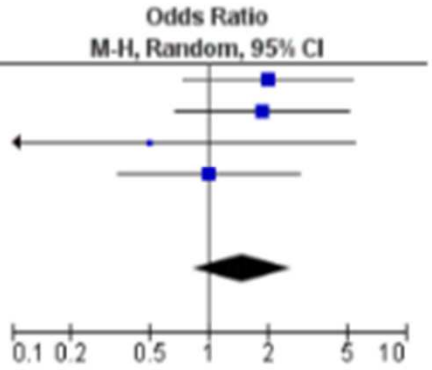


Anastomotic leak

Figure 9. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.4 Mortality 30 d.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	12	487	6	483	33.7%	2.01 [0.75, 5.40]
Boulis-Wassif 1984	11	124	6	121	31.2%	1.87 [0.67, 5.22]
Bujko 2006	1	152	2	153	5.7%	0.50 [0.04, 5.57]
Gerard 2006	7	359	7	360	29.4%	1.00 [0.35, 2.89]
Latkauskas 2011	0	46	0	37		Not estimable
Total (95% CI)		**1168**		**1154**	**100.0%**	**1.48 [0.83, 2.63]**
Total events	31		21			

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.86$, df = 3 (P = 0.60); $I^2 = 0\%$
Test for overall effect: Z = 1.34 (P = 0.18)

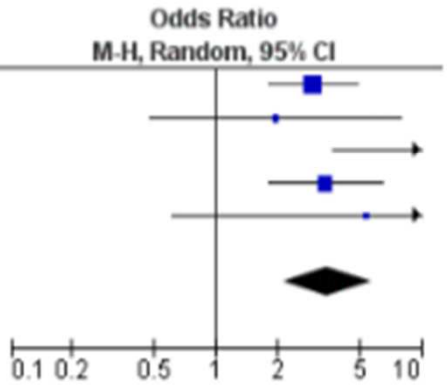


30-day mortality

Figure 12. Forest plot of comparison: 1 radiotherapy vs radiochemotherapy, outcome: 1.8 pCR.

Study or Subgroup	CRT Events	CRT Total	RT Events	RT Total	Weight	Odds Ratio M-H, Random, 95% CI
Bosset 2006	60	473	22	476	43.6%	3.00 [1.81, 4.97]
Boulis-Wassif 1984	6	126	3	121	11.1%	1.97 [0.48, 8.05]
Bujko 2006	22	138	1	148	5.8%	27.88 [3.70, 209.90]
Gerard 2006	41	359	13	360	34.4%	3.44 [1.81, 6.54]
Latkauskas 2011	6	46	1	37	5.1%	5.40 [0.62, 47.03]
Total (95% CI)		**1142**		**1142**	**100.0%**	**3.52 [2.12, 5.84]**
Total events	135		40			

Heterogeneity: $Tau^2 = 0.09$; $Chi^2 = 5.44$, df = 4 (P = 0.25); $I^2 = 26\%$
Test for overall effect: Z = 4.88 (P < 0.00001)



pCR

ORIGINAL ARTICLE

Year : 2018 | Volume : 14 | Issue : 8 | Page : 224-231

Comparison of short-course with long-course preoperative neoadjuvant therapy fo rectal cancer: A meta-analysis

Ke Chen, Guoming Xie, Qi Zhang, Yanping Shen, Taoqi Zhou

Department of Radiochemotherapy, Yinzhou Hospital Affiliated to Medical School of Ningbo University, Ningbo, China

Date of Web Publication 26-Mar-2018

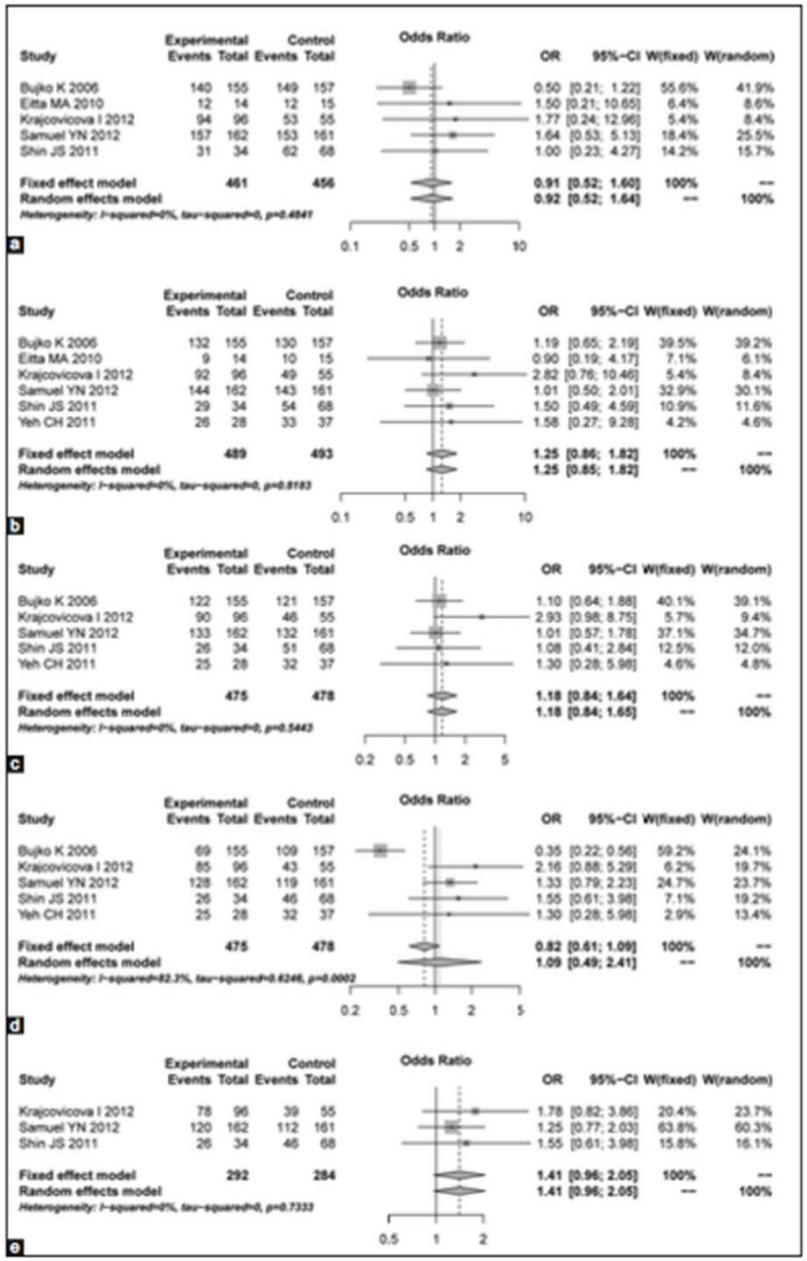


Figure 3: Forest plots of comparison between short-term versus long-term treatments on survival outcomes. (a) 1-year overall survival; (b) 2-year overall survival; (c) 3-year overall survival; (d) 4-year overall survival; (e) 5-year overall survival

1-yr OS

2-yr OS

3-yr OS

4-yr OS

5-yr OS

https://www.tandfonline.com/doi/full/10.1080/015581.2017.1374418?scroll=top&needAccess=true

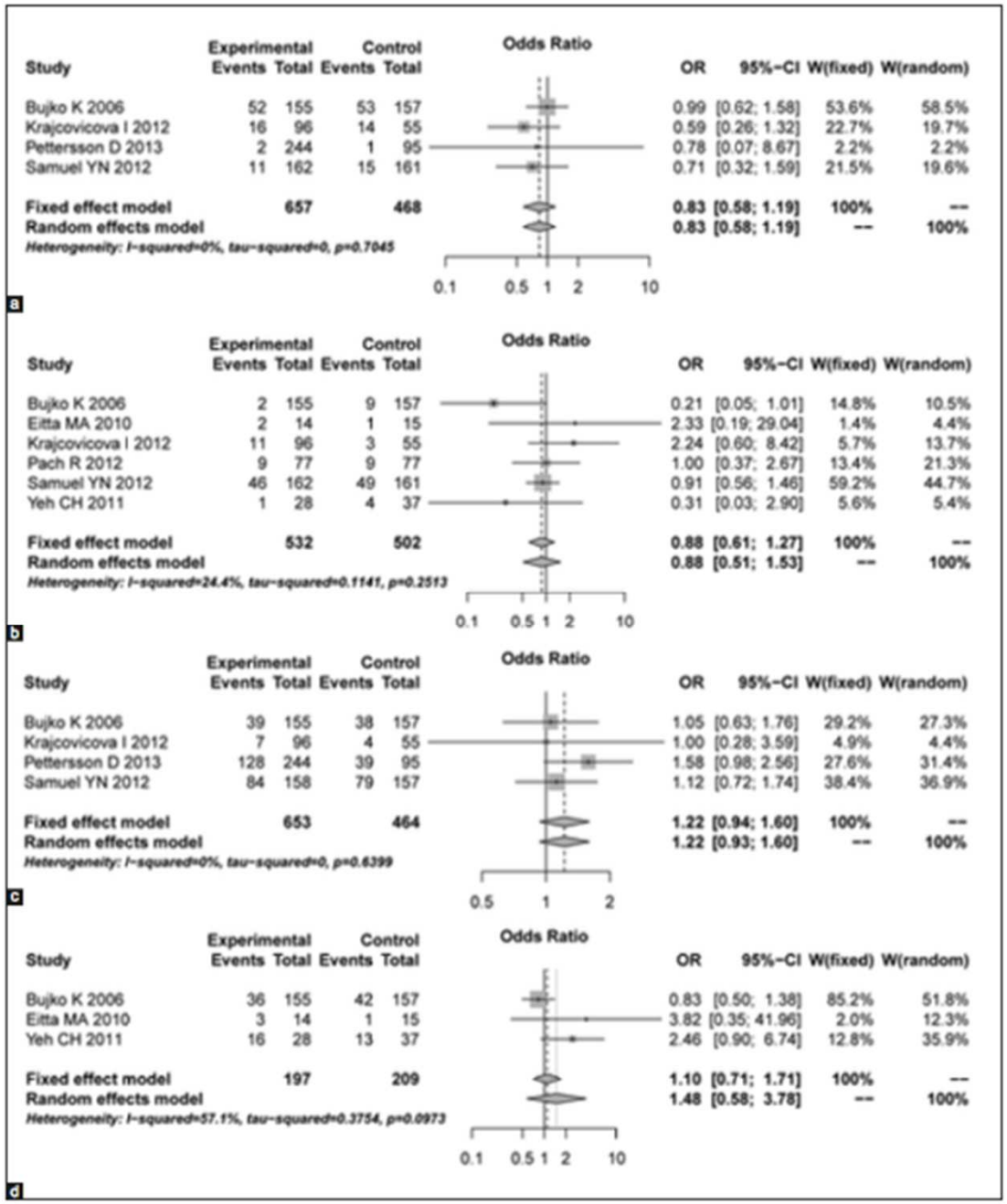


Figure 4: Forest plots of comparison between short-term versus long-term treatments on other outcomes. (a) death rate; (b) recurrence rate; (c) complications; (d) distant metastasis

Death rate

Recurrence rate

Complications

Distant metastasis

Optimal Interval to Surgery After Neoadjuvant Chemoradiotherapy in Rectal Cancer: A Systematic Review and Meta-analysis

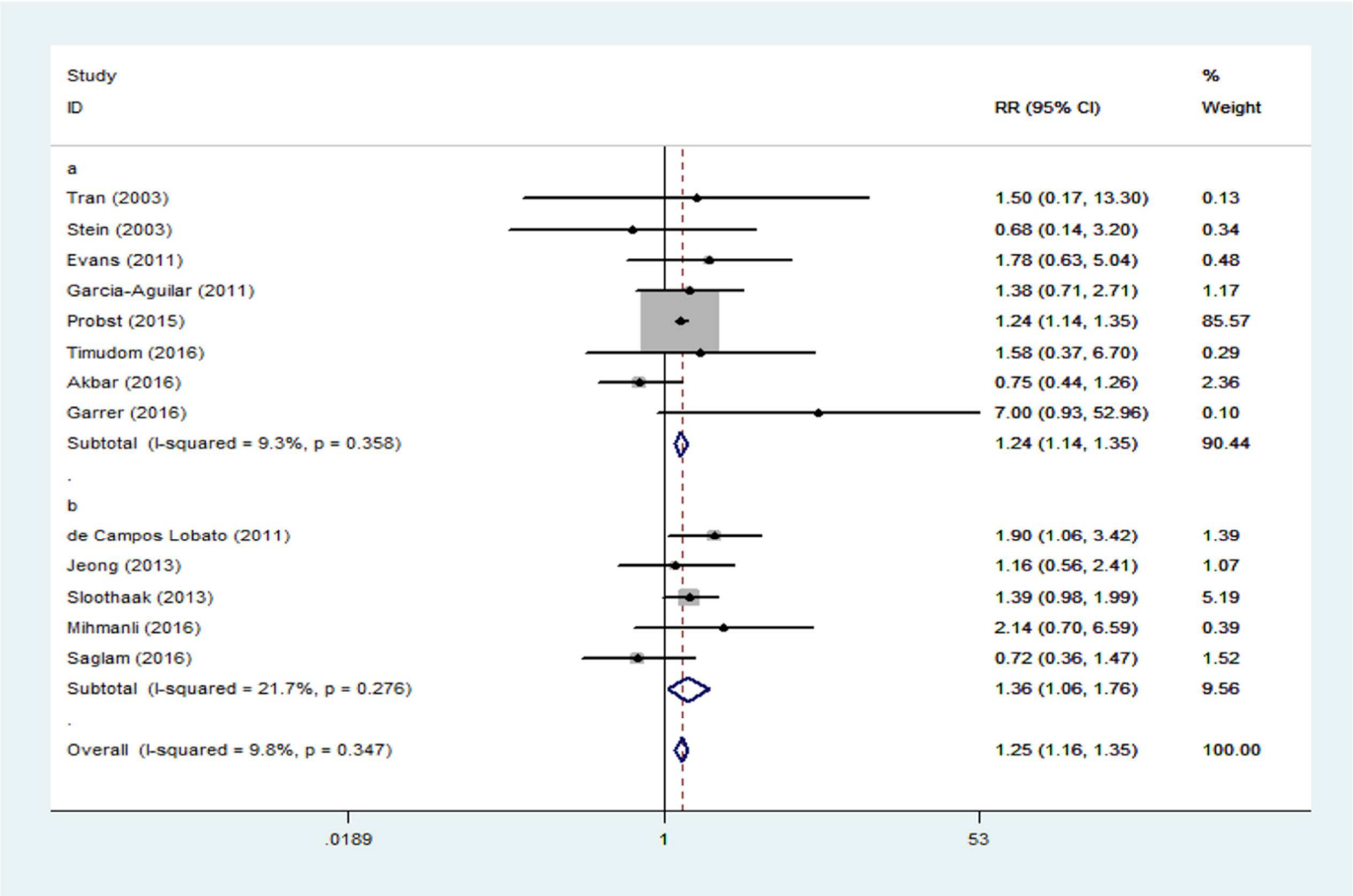
Donglin Du, Zhourong Su, Dan Wang, Wenwen Liu, Zhengqiang Wei

Clinical Colorectal Cancer

Volume 17, Issue 1, Pages 13-24 (March 2018)

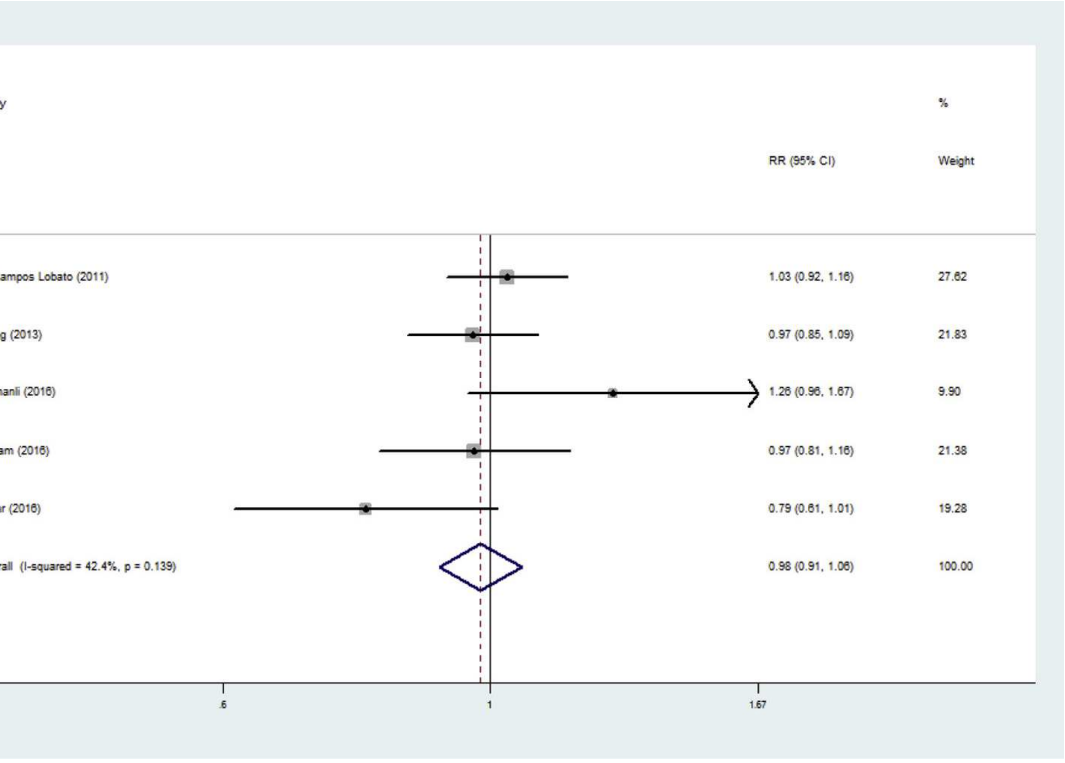
DOI: 10.1016/j.clcc.2017.10.012

pCR with interval to surgery < vs > 8 weeks

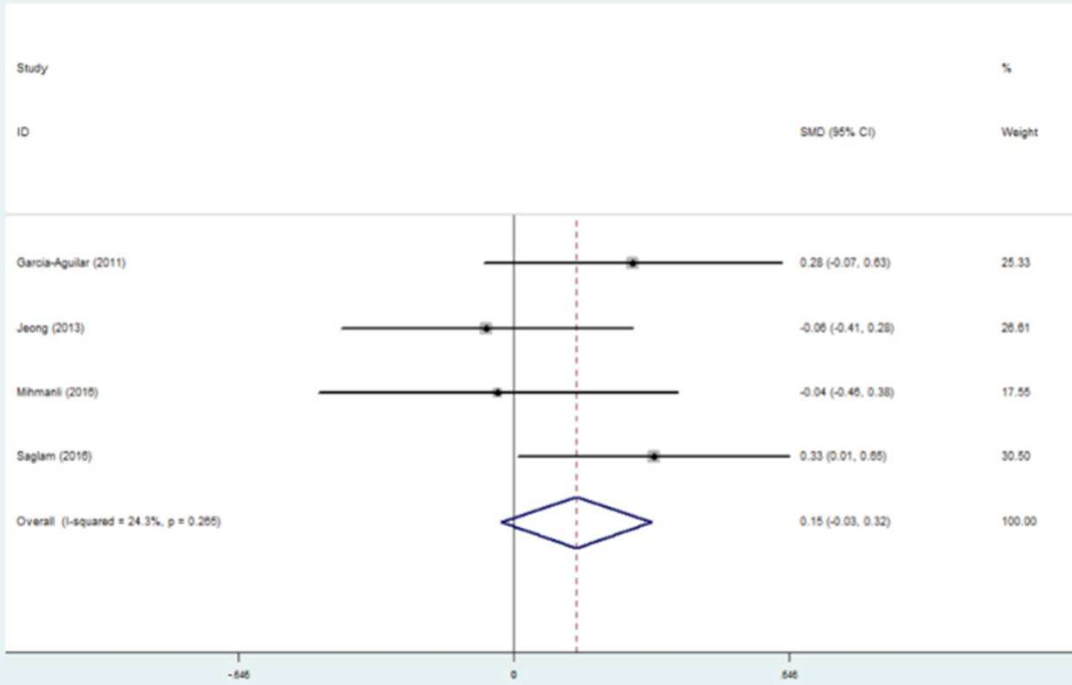


pCR was significantly higher with nCRT→Sx interval of > 8 weeks

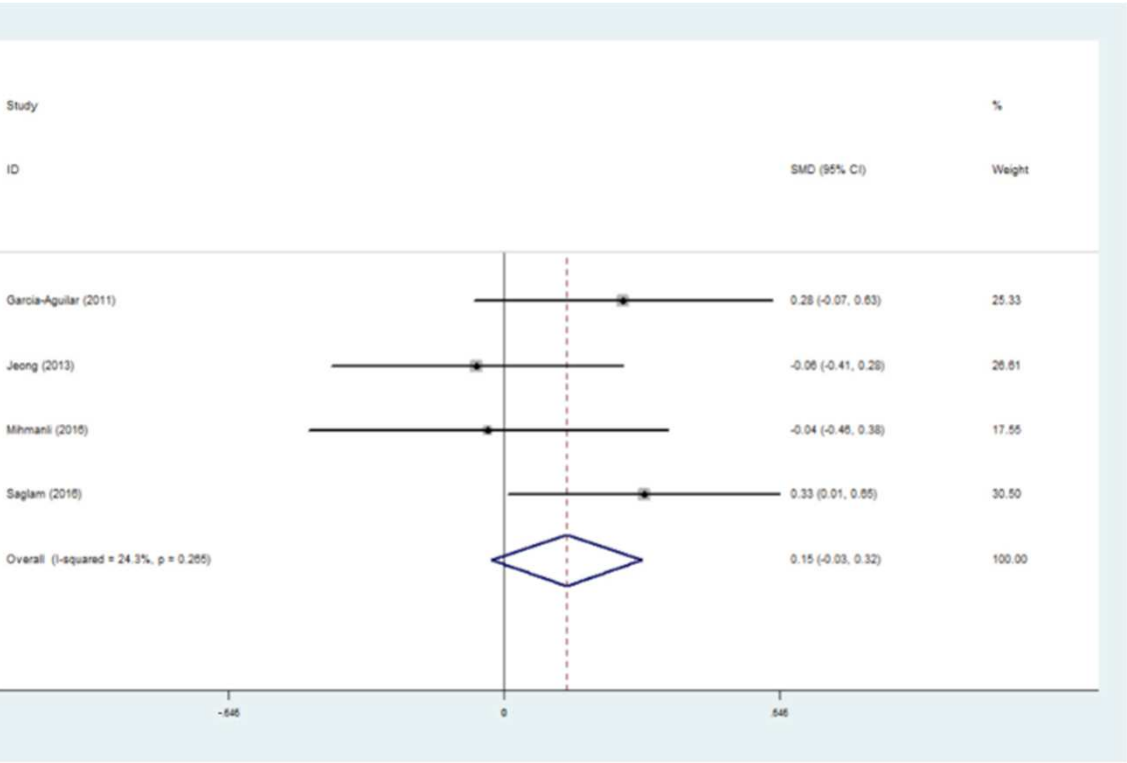
OS


%
RR (95% CI)
Weight
ampos Lobato (2011)
1.03 (0.92, 1.16)
27.62
g (2013)
0.97 (0.85, 1.09)
21.83
anli (2016)
1.26 (0.96, 1.67)
9.90
am (2016)
0.97 (0.81, 1.16)
21.38
r (2016)
0.79 (0.61, 1.01)
19.28
all (I-squared = 42.4%, p = 0.139)
0.98 (0.91, 1.06)
100.00
.6
1
1.67

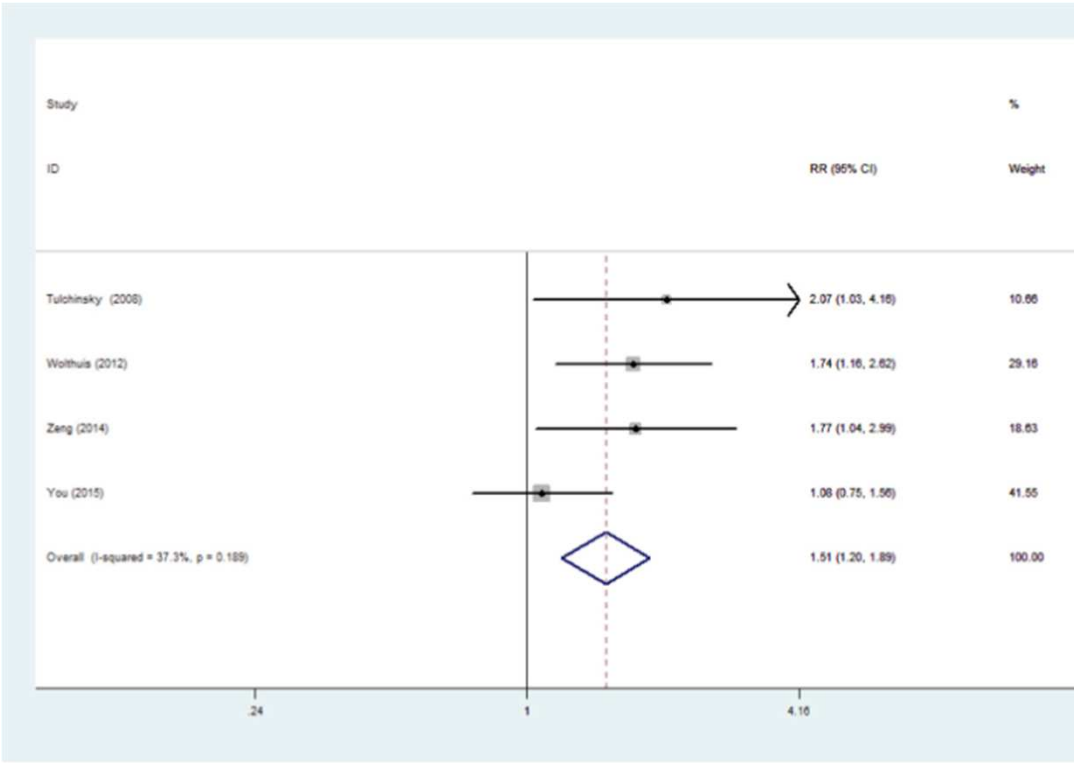
DFS


Study
ID
%
SMD (95% CI)
Weight
Garcia-Aguilar (2011)
0.28 (-0.07, 0.63)
25.33
Jeong (2013)
-0.06 (-0.41, 0.28)
26.61
Mihmanli (2016)
-0.04 (-0.46, 0.38)
17.55
Saglam (2016)
0.33 (0.01, 0.65)
30.50
Overall (I-squared = 24.3%, p = 0.255)
0.15 (-0.03, 0.32)
100.00
-.646
0
.646

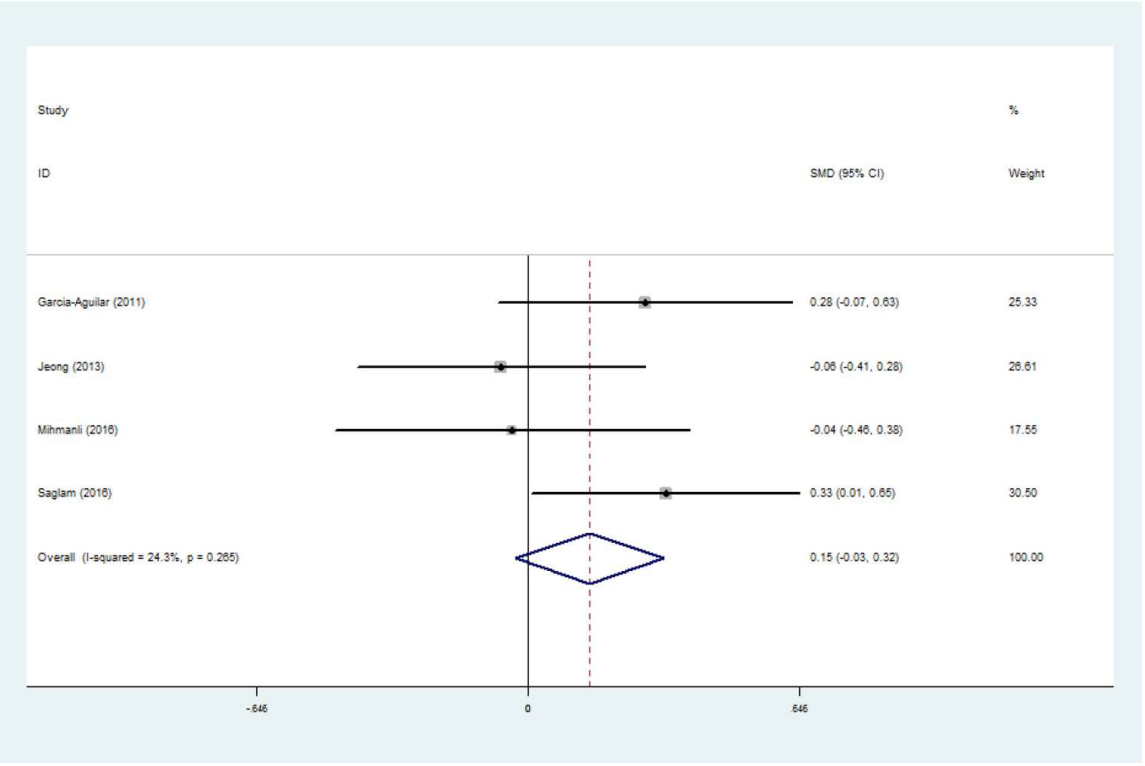
Local recurrence



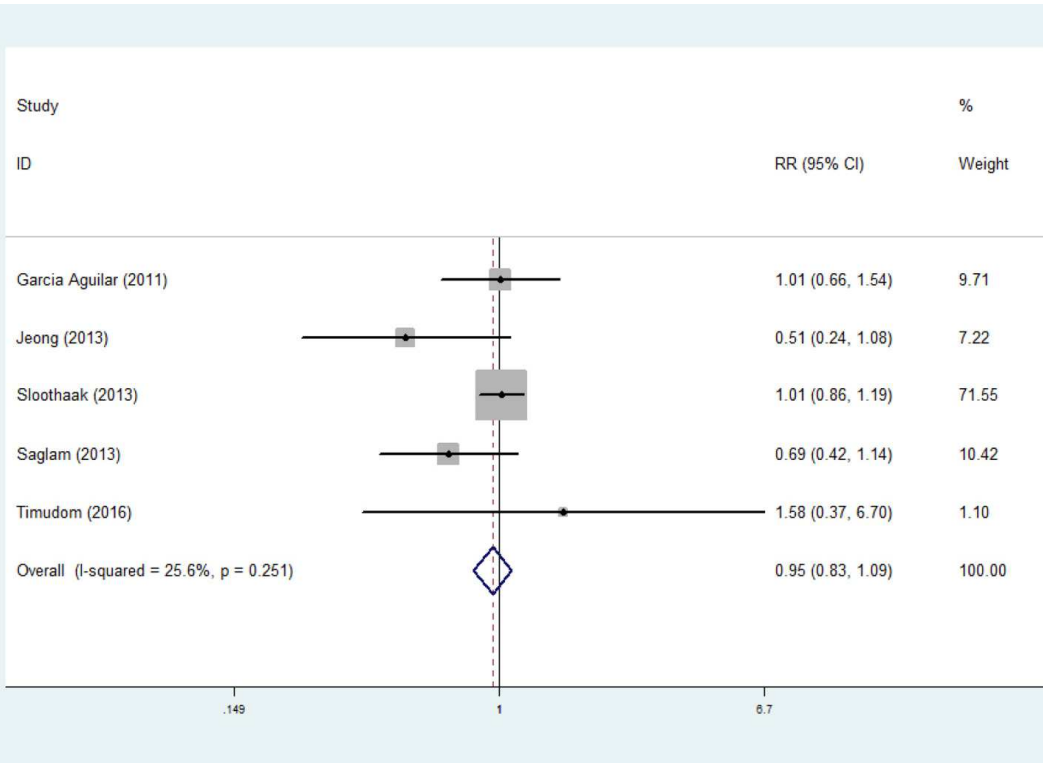
pCR



Operative time



Post op Complications



Original Article

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ROJ Radiation Oncology Journal

Preoperative chemoradiotherapy versus postoperative chemoradiotherapy for stage II–III resectable rectal cancer: a meta-analysis of randomized controlled trials

Jin Ho Song, MD[1], Jae Uk Jeong, MD[2], Jong Hoon Lee, MD[3], Sung Hwan Kim, MD[3], Hyeon Min Cho, MD[4], Jun Won Um, MD[5], Hong Seok Jang, MD[6] for Korean Clinical Practice Guideline for Colon and Rectal Cancer Committee

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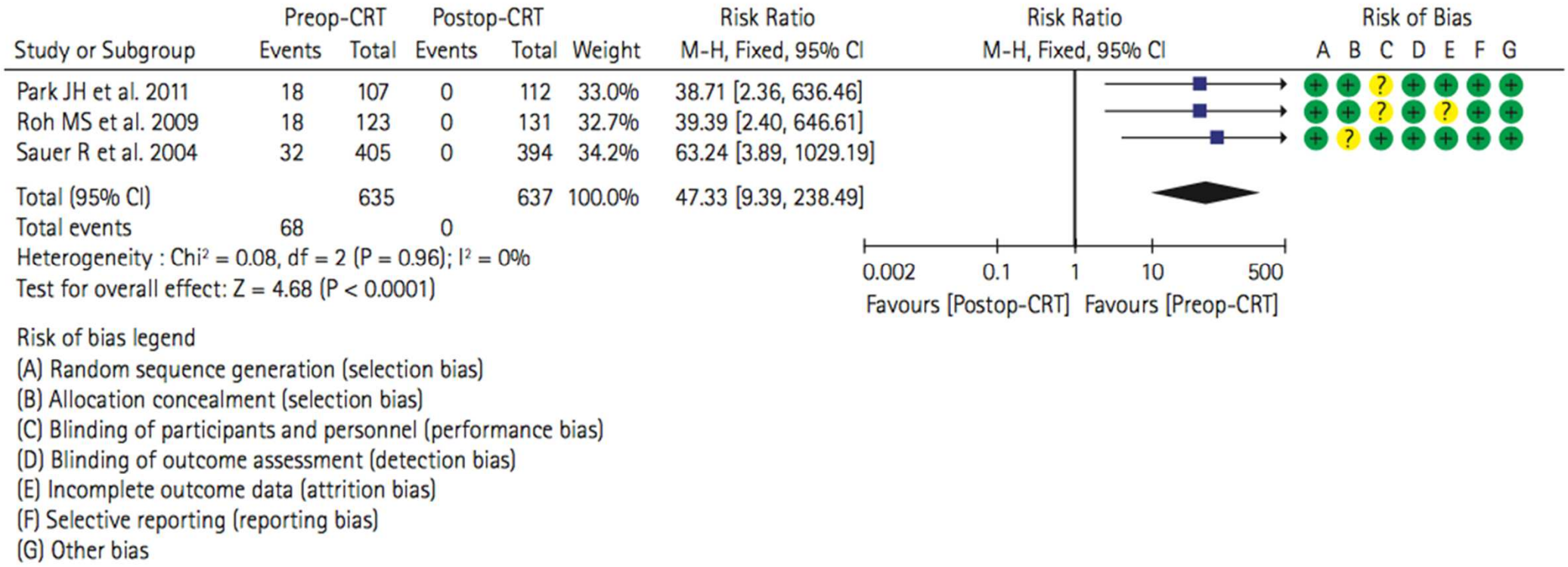
pCR

ROJ Radiation Oncology Journal



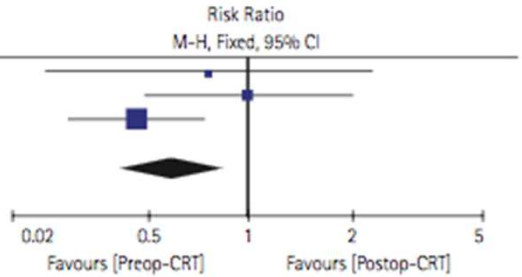
Risk of bias legend
(A) Random sequence generation (selection bias)
(B) Allocation concealment (selection bias)
(C) Blinding of participants and personnel (performance bias)
(D) Blinding of outcome assessment (detection bias)
(E) Incomplete outcome data (attrition bias)
(F) Selective reporting (reporting bias)
(G) Other bias

Fig. 2. Forest plot of comparison: pathologic complete response (ypT0N0) between preoperative and postoperative chemoradiotherapy.

A. 5-year locoregional recurrence

Study or Subgroup	Preop-CRT Events	Preop-CRT Total	Postop-CRT Events	Postop-CRT Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	5	107	7	112	9.5%	0.75 [0.24, 2.28]
Roh MS et al. 2009	13	123	14	131	18.8%	0.99 [0.48, 2.02]
Sauer R et al. 2004	24	405	51	394	71.7%	0.46 [0.29, 0.73]
Total (95% CI)		635		637	100.0%	0.59 [0.41, 0.84]
Total events	42		72			

Heterogeneity : Chi² = 3.33, df = 2 (P = 0.19); I² = 40%
Test for overall effect: Z = 2.89 (P = 0.0004)

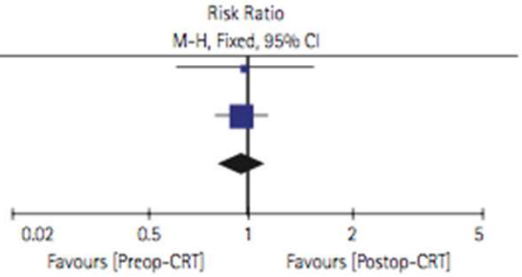


5-yr LR

B. 5-year distant recurrence

Study or Subgroup	Preop-CRT Events	Preop-CRT Total	Postop-CRT Events	Postop-CRT Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	25	107	27	112	14.8%	0.97 [0.60, 1.56]
Roh MS et al. 2009	0	0	0	0		Not estimable
Sauer R et al. 2004	146	405	150	394	85.2%	0.95 [0.79, 1.13]
Total (95% CI)		512		506	100.0%	0.95 [0.80, 1.13]
Total events	171		177			

Heterogeneity : Chi² = 0.01, df = 2 (P = 0.93); I² = 0%
Test for overall effect: Z = 0.59 (P = 0.55)

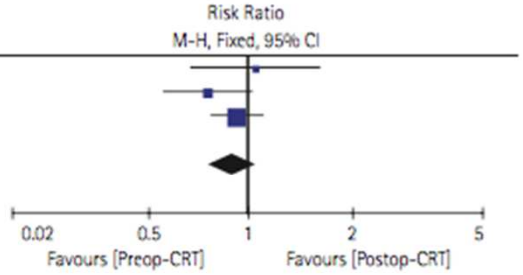


5-yr DM

C. 5-year relapse-free survival

Study or Subgroup	Preop-CRT Events	Preop-CRT Total	Postop-CRT Events	Postop-CRT Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	29	107	29	112	12.5%	1.05 [0.67, 1.63]
Roh MS et al. 2009	43	123	61	131	26.0%	0.75 [0.55, 1.02]
Sauer R et al. 2004	130	405	138	394	61.5%	0.92 [0.75, 1011]
Total (95% CI)		635		637	100.0%	0.89 [0.76, 1.04]
Total events	202		228			

Heterogeneity : Chi² = 1.82, df = 2 (P = 0.40); I² = 0%
Test for overall effect: Z = 1.49 (P = 0.14)

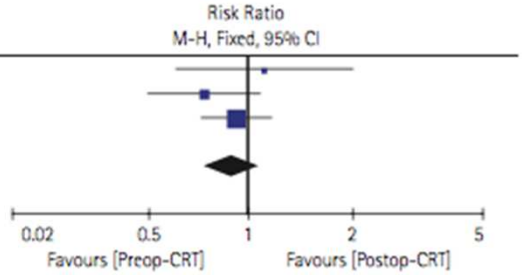


5-yr RFS

D. 5-year overall survival

Study or Subgroup	Preop-CRT Events	Preop-CRT Total	Postop-CRT Events	Postop-CRT Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	18	107	17	112	10.2%	1.11 [0.60, 2.03]
Roh MS et al. 2009	31	123	45	131	26.6%	0.73 [0.50, 1.08]
Sauer R et al. 2004	96	405	102	394	63.2%	0.92 [0.72, 1.17]
Total (95% CI)		635		637	100.0%	0.89 [0.73, 1.08]
Total events	145		164			

Heterogeneity : Chi² = 1.51, df = 2 (P = 0.47); I² = 0%
Test for overall effect: Z = 1.22 (P = 0.22)

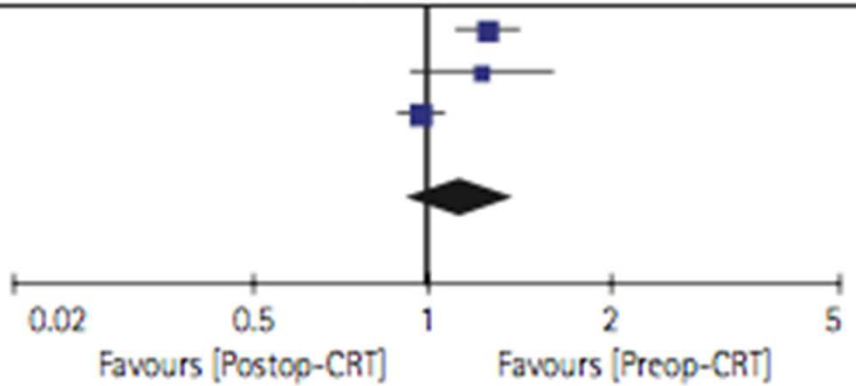


5-yr OS

A. sphincter preservation rate

Study or Subgroup	Preop-CRT Events	Total	Postop-CRT Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	98	107	7	81	36.7%	1.27 [1.11, 1.44]
Roh MS et al. 2009	59	123	14	51	24.0%	1.23 [0.93, 1.63]
Sauer R et al. 2004	279	405	51	280	39.4%	0.97 [0.89, 1.06]
Total (95% CI)		635		637	100.0%	1.13 [0.92, 1.40]
Total events	436		412			

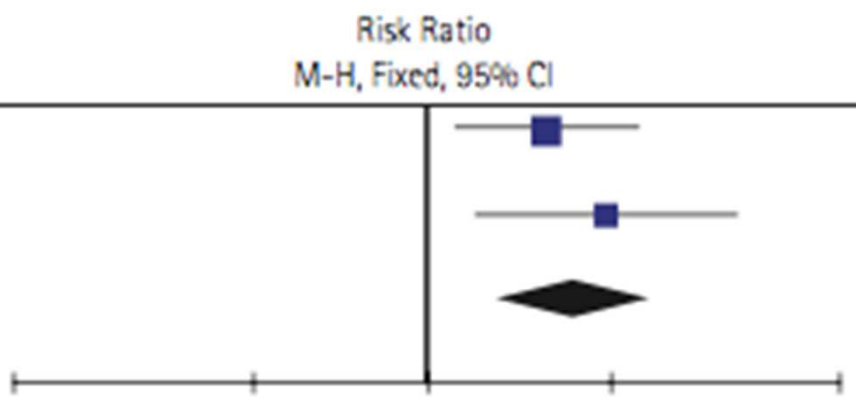
Heterogeneity : $Tau^2 = 0.03$; $Chi^2 = 12.24$, df = 2 (P = 0.002); $I^2 = 84\%$
Test for overall effect: Z = 1.16 (P = 0.24)



B. conversion rate from APR to LAR

Study or Subgroup	Preop-CRT Events	Total	Postop-CRT Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	42	62	22	52	57.2%	1.60 [1.12, 2.30]
Roh MS et al. 2009	0	0	0	0		Not estimable
Sauer R et al. 2004	45	116	15	78	42.8%	2.02 [1.21, 3.36]
Total (95% CI)		178		130	100.0%	1.78 [1.31, 2.41]
Total events	87		37			

Heterogeneity : $Chi^2 = 0.56$, df = 1 (P = 0.45); $I^2 = 0\%$
Test for overall effect: Z = 3.72 (P = 0.0002)

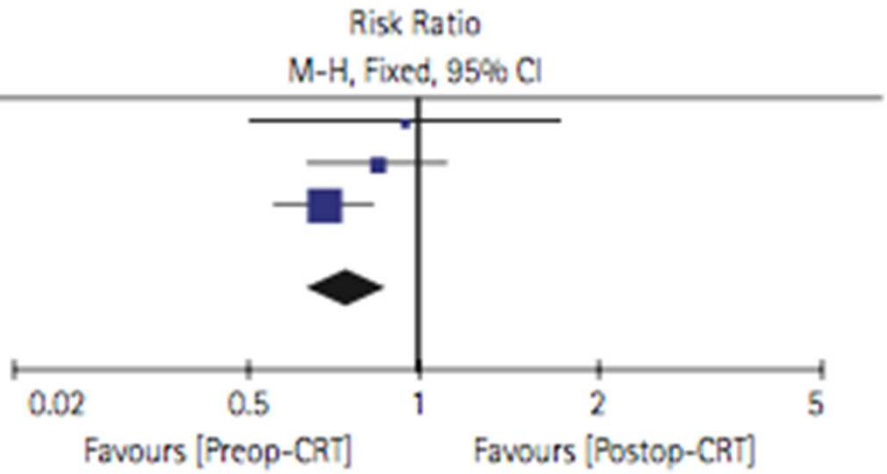


A. ≥ grade 3 acute complication

Study or Subgroup	Preop-CRT Events	Total	Postop-CRT Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	16	107	18	112	7.3%	0.93 [0.50, 1.73]
Roh MS et al. 2009	51	123	65	131	26.2%	0.84 [0.64, 1.10]
Sauer R et al. 2004	109	405	158	394	66.5%	0.67 [0.55, 0.82]
Total (95% CI)		635		637	100.0%	0.73 [0.63, 0.86]
Total events	176		241			

Heterogeneity : $Chi^2 = 2.20$, df = 2 (P = 0.33); $I^2 = 9\%$

Test for overall effect: Z = 3.87 (P = 0.0001)

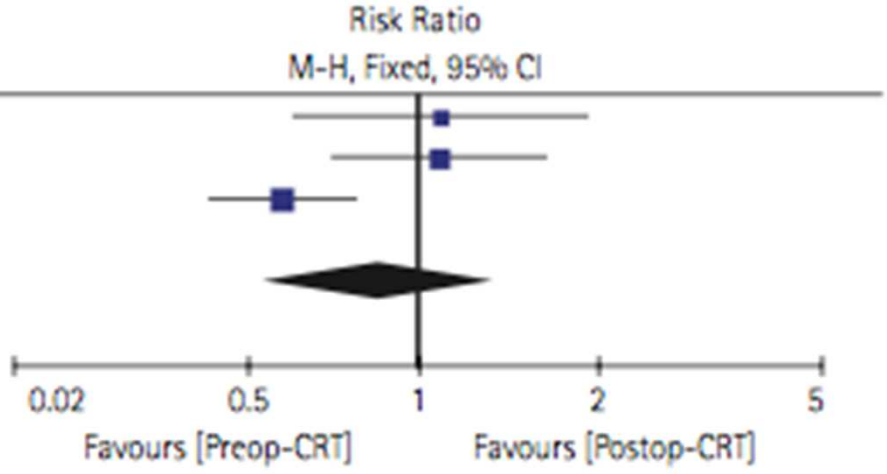


B. ≥ grade 3 perioperative or chronic complication

Study or Subgroup	Preop-CRT Events	Total	Postop-CRT Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Park JH et al. 2011	18	107	17	112	26.7%	1.11 [0.60, 2.03]
Roh MS et al. 2009	31	123	30	30	33.7%	1.10 [0.71, 1.70]
Sauer R et al. 2004	57	405	95	95	39.7%	0.58 [0.43, 0.79]
Total (95% CI)		635		637	100.0%	0.86 [0.53,1.38]
Total events	106		142			

Heterogeneity : $Tau^2 = 0.13$; $Chi^2 = 7.26$, df = 2 (P = 0.03); $I^2 = 72\%$

Test for overall effect: Z = 0.63 (P = 0.53)



conclusions

- Pre-op RT significantly reduces local recurrence
- Pre-op CRT results in higher rates of pCR compared to RT alone
- CRT is associated with higher toxicity c/w RT alone
- Pre-op RT is associated with better local control compared to post op RT
- pCR rates are higher when interval from CRT to Sx is more than 8 weeks
- Longer interval to surgery did not compromise outcomes and was not associated with difference in toxicity rates
- Hypofractionation with doses >5Gy appears to increase perioperative mortality and post op morbidity in some reports
- Pre-op CRT results in better local control compared to post op CRT with no difference in DFS, OS or DM rates
- Pre-op CRT resulted in significantly fewer complications and higher rates of conversion from APR to LAR

Surgical approach

Meta-analysis of the impact of surgical approach on the grade of mesorectal excision in rectal cancer. BJS 2017; 104: 1609-1619.

Published: 17th October 2017

Authors: B. Creavin, M. E. Kelly, E. Ryan, D. C. Winter

iginal Investigation

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athologic Outcomes of Laparoscopic vs pen Mesorectal Excision for Rectal ancer

Systematic Review and Meta-analysis

x Martínez-Pérez, MD[1,2]; Maria Clotilde Carra, PhD[3]; Francesco Brunetti, MD[1]; et al

uthor Affiliations | Article Information

A Surg. 2017;152(4):e165665. doi:10.1001/jamasurg.2016.5665

Journal of Laparoendoscopic & Advanced Surgical Techniques, Vol. 28, No. 5 | Full Reports

Laparoscopic Versus Conventional Open Abdominoperineal Resection for Rectal Canc An Updated Systematic Review and Meta-Analysis

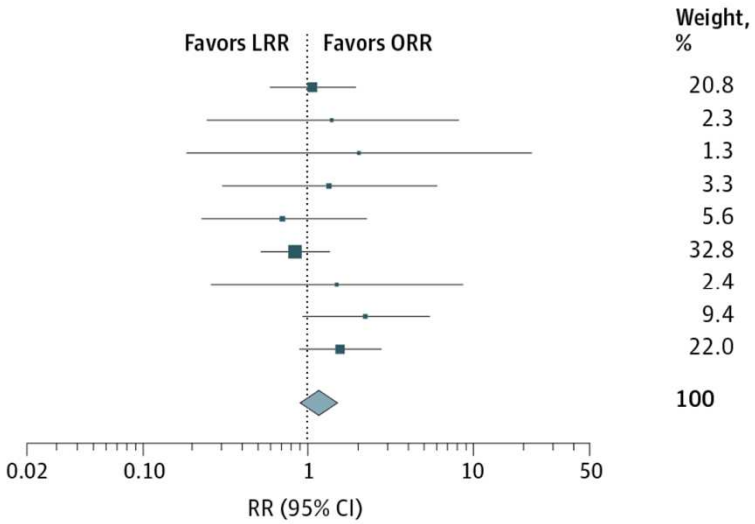
Xubing Zhang, Qingbin Wu, Tao Hu, Chaoyang Gu, Liang Bi, and Ziqiang Wang

Published Online: 1 May 2018 | https://doi.org/10.1089/lap.2017.0593

A Circumferential resection margin involvement

Source	LRR No. of Events	LRR Participants	ORR No. of Events	ORR Participants	RR (95% CI)
Guillou et al,[15] 2005	30	193	14	97	1.08 (0.60-1.93)
Ng et al,[35] 2008	3	51	2	48	1.41 (0.25-8.09)
Ng et al,[33] 2009	2	76	1	77	2.03 (0.19-21.88)
Luján et al,[34] 2009	4	101	3	103	1.36 (0.31-5.92)
Kang et al,[14] 2010	5	170	7	170	0.71 (0.23-2.21)
van der Pas et al,[13] 2013	43	588	26	300	0.84 (0.53-1.35)
Ng et al,[30] 2014	3	40	2	40	1.50 (0.26-8.50)
Stevenson et al,[21] 2015	16	238	7	235	2.26 (0.95-5.39)
Fleshman et al,[20] 2015	29	240	17	222	1.58 (0.89-2.79)
Total	**135**	**1697**	**79**	**1292**	**1.17 (0.89-1.53)**

Heterogeneity $\tau^2 = 0.00$, $\chi^2_8 = 6.32$ ($P = .61$), $I^2 = 0\%$
Test for overall effect: $Z = 1.13$ ($P = .26$)

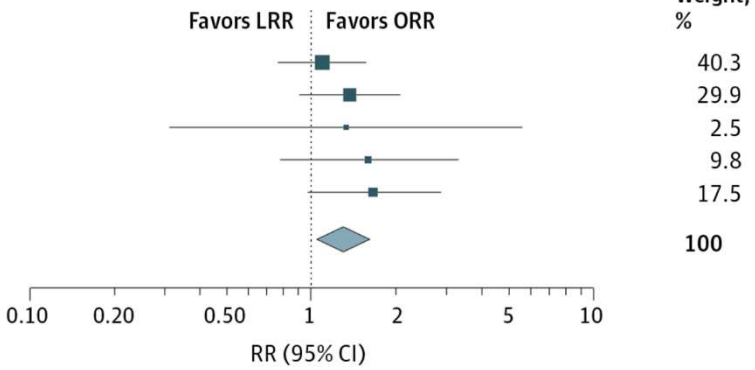


Involvement of CR

B Noncomplete mesorectal excision

Source	LRR No. of Events	LRR Participants	ORR No. of Events	ORR Participants	RR (95% CI)
Kang et al,[14] 2010	47	170	43	170	1.09 (0.77-1.56)
van der Pas al,[13] 2013	77	666	28	331	1.37 (0.91-2.06)
Ng et al,[30] 2014	4	40	3	40	1.33 (0.32-5.58)
Fleshman et al,[20] 2015	19	240	11	222	1.60 (0.78-3.28)
Stevenson et al,[21] 2015	32	238	19	235	1.66 (0.97-2.85)
Total	**179**	**1354**	**104**	**998**	**1.31 (1.05-1.64)**

Heterogeneity $\tau^2 = 0.00$, $\chi^2_4 = 2.11$ ($P = .71$), $I^2 = 0\%$
Test for overall effect: $Z = 2.36$ ($P = .02$)



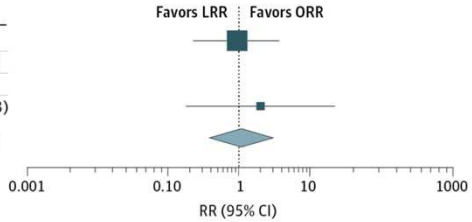
Incomplete TME

JAMA Surg. 2017;152(4):e1656

A Distal resection margin involvement

Source	LRR No. of Events	LRR Participants	ORR No. of Events	ORR Participants	RR (95% CI)	Weight, %
Braga et al,[37] 2007	0	83	0	85	Not estimable	
Fleshman et al,[20] 2015	4	240	4	222	0.93 (0.23 to 3.65)	75.2
Luján et al,[34] 2009	0	101	0	103	Not estimable	
Stevenson et al,[21] 2015	2	238	1	235	1.97 (0.18 to 21.63)	24.8
Total	**6**	**662**	**5**	**645**	**1.12 (0.34 to 3.67)**	**100**

Heterogeneity $\tau^2 = 0.00$, $\chi^2_1 = 0.29$ ($P = .59$), $I^2 = 0\%$
Test for overall effect: $Z = 0.18$ ($P = .86$)

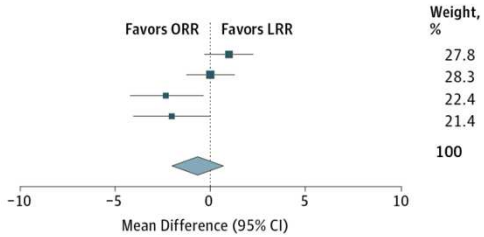


Distal resection margin involvement

B Distance to radial margin

Source	LRR Mean	LRR (SD)	LRR Total	ORR Mean	ORR (SD)	ORR Total	Mean Difference (95% CI)	Weight, %
Kang et al,[14] 2010	9	(5.92)	170	8	(5.92)	170	1.00 (−0.26 to 2.26)	27.8
van der Pas et al,[13] 2013	10	(9.62)	588	10	(8.14)	300	0.00 (−1.21 to 1.21)	28.3
Fleshman et al,[20] 2015	10.5	(9.2)	240	12.8	(11.2)	222	−2.30 (−4.18 to −0.42)	22.4
Stevenson et al,[21] 2015	10	(10.37)	211	12	(10.37)	201	−2.00 (−4.00 to 0.00)	21.4
Total			**1209**			**893**	**−0.67 (−2.16 to 0.83)**	**100**

Heterogeneity $\tau^2 = 1.69$, $\chi^2_3 = 11.46$ ($P = .009$), $I^2 = 74\%$
Test for overall effect: $Z = 0.87$ ($P = .38$)

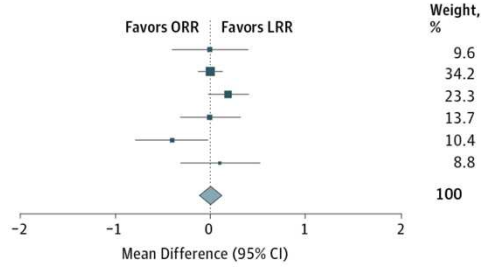


Distance to radial margin

C Distance to distal margin

Source	LRR Mean	LRR (SD)	LRR Total	ORR Mean	ORR (SD)	ORR Total	Mean Difference (95% CI)	Weight, %
Kang et al,[14] 2010	2	(1.85)	170	2	(1.85)	170	0.00 (−0.39 to 0.39)	9.6
Liu et al,[32] 2010	3	(0.375)	98	2	(0.5)	88	0.00 (−0.13 to 0.13)	34.2
Liang et al,[31] 2011	3.22	(0.738)	86	3.03	(0.684)	104	0.19 (−0.01 to 0.39)	23.3
van der Pas et al,[13] 2013	3	(2.07)	618	3	(2.37)	310	0.00 (−0.31 to 0.31)	13.7
Stevenson et al,[21] 2015	2.6	(2.22)	240	3	(1.77)	201	−0.40 (−0.77 to −0.03)	10.4
Fleshman et al,[20] 2015	3.2	(2.6)	240	3.1	(1.9)	222	0.10 (−0.31 to 0.51)	8.8
Total			**1452**			**1095**	**0.01 (−0.12 to 0.15)**	**100**

Heterogeneity $\tau^2 = 0.01$, $\chi^2_5 = 7.82$ ($P = .17$), $I^2 = 36\%$
Test for overall effect: $Z = 0.16$ ($P = .87$)

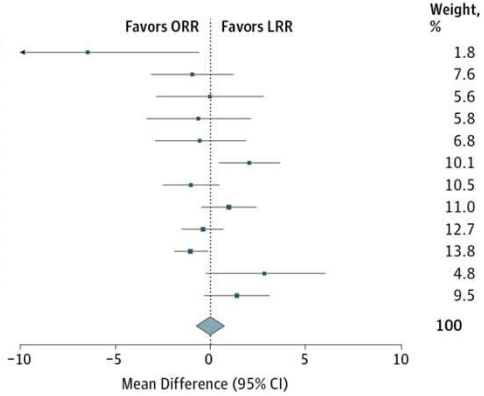


Distance to distal margin

D Lymph nodes harvested

Source	LRR Mean	LRR (SD)	LRR Total	ORR Mean	ORR (SD)	ORR Total	Mean Difference (95% CI)	Weight, %
Araujo et al,[38] 2003	5.5	(7.81)	13	11.9	(7.81)	15	−6.40 (−12.20 to −0.60)	1.8
Braga et al,[37] 2007	12.7	(7.3)	83	13.6	(6.9)	85	−0.90 (−3.05 to 1.25)	7.6
Pechlivanides et al,[36] 2007	19.2	(5.5)	34	19.2	(6.66)	39	0.00 (−2.79 to 2.79)	5.6
Ng et al,[35] 2008	12.4	(6.7)	51	13	(7)	48	−0.60 (−3.30 to 2.10)	5.8
Ng et al,[33] 2009	11.5	(7.9)	76	12	(7)	77	−0.50 (−2.87 to 1.87)	6.8
Luján et al,[34] 2009	13.63	(6.26)	101	11.57	(5.1)	103	2.06 (0.49 to 3.63)	10.1
Kang et al,[14] 2010	17	(7.29)	170	18	(6.66)	170	−1.00 (−2.48 to 0.48)	10.5
Liu et al,[32] 2010	16	(5)	98	15	(4.9)	98	1.00 (−0.39 to 2.39)	11.0
Liang et al,[31] 2011	7.05	(5.05)	169	7.44	(4.89)	174	−0.39 (−1.44 to 0.66)	12.7
van der Pas et al,[13] 2013	13	(5.92)	683	14	(6.66)	341	−1.00 (−1.83 to −0.17)	13.8
Ng et al,[30] 2014	17.7	(8.4)	40	14.8	(5.6)	40	2.90 (−0.23 to 6.03)	4.8
Fleshman et al,[20] 2015	17.9	(10.1)	240	16.5	(8.4)	222	1.40 (−0.29 to 3.09)	9.5
Total			**1758**			**1412**	**0.05 (−0.77 to 0.86)**	**100**

Heterogeneity $\tau^2 = 1.07$, $\chi^2_{11} = 27.72$ ($P = .004$), $I^2 = 60\%$
Test for overall effect: $Z = 0.11$ ($P = .91$)



Lymph nodes harvested

JAMA Surg. 2017;152(4):e165665.

Adjuvant chemotherapy

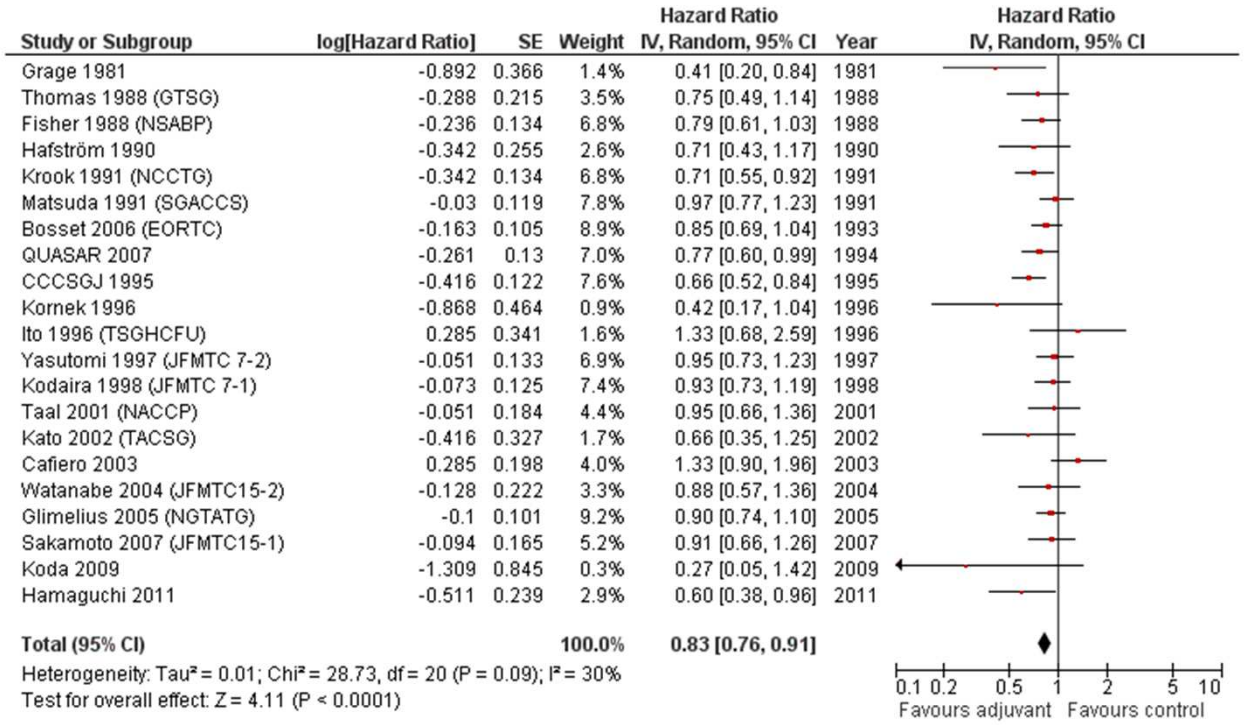
Cochrane Database of Systematic Reviews

Postoperative adjuvant chemotherapy in rectal cancer operated for cure.

Cochrane Systematic Review - **Intervention** | Version published: 14 March 2012 see what's new

Sune Høirup Petersen | Henrik Harling | Lene Tschemerinsky Kirkeby | Peer Wille-Jørgensen | Simone Mocellin

OS

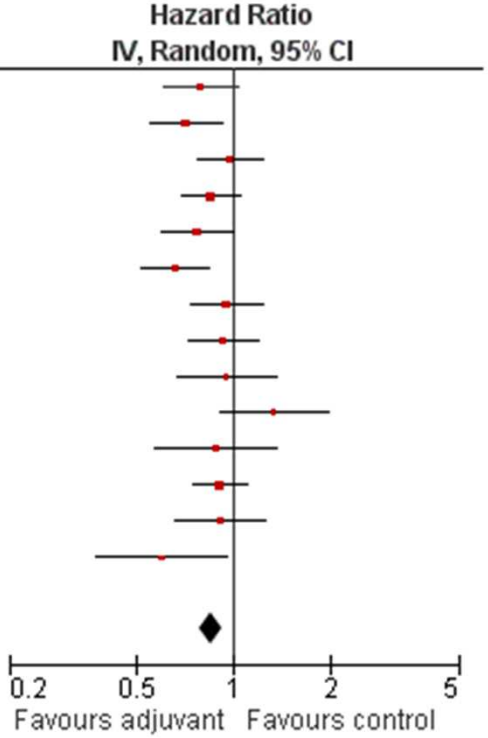

Study or Subgroup
log[Hazard Ratio]
SE
Weight
Hazard Ratio
IV, Random, 95% CI
Year
Hazard Ratio
IV, Random, 95% CI
Grage 1981 -0.892 0.366 1.4% 0.41 [0.20, 0.84] 1981
Thomas 1988 (GTSG) -0.288 0.215 3.5% 0.75 [0.49, 1.14] 1988
Fisher 1988 (NSABP) -0.236 0.134 6.8% 0.79 [0.61, 1.03] 1988
Hafström 1990 -0.342 0.255 2.6% 0.71 [0.43, 1.17] 1990
Krook 1991 (NCCTG) -0.342 0.134 6.8% 0.71 [0.55, 0.92] 1991
Matsuda 1991 (SGACCS) -0.03 0.119 7.8% 0.97 [0.77, 1.23] 1991
Bosset 2006 (EORTC) -0.163 0.105 8.9% 0.85 [0.69, 1.04] 1993
QUASAR 2007 -0.261 0.13 7.0% 0.77 [0.60, 0.99] 1994
CCCSGJ 1995 -0.416 0.122 7.6% 0.66 [0.52, 0.84] 1995
Kornek 1996 -0.868 0.464 0.9% 0.42 [0.17, 1.04] 1996
Ito 1996 (TSGHCFU) 0.285 0.341 1.6% 1.33 [0.68, 2.59] 1996
Yasutomi 1997 (JFMTC 7-2) -0.051 0.133 6.9% 0.95 [0.73, 1.23] 1997
Kodaira 1998 (JFMTC 7-1) -0.073 0.125 7.4% 0.93 [0.73, 1.19] 1998
Taal 2001 (NACCP) -0.051 0.184 4.4% 0.95 [0.66, 1.36] 2001
Kato 2002 (TACSG) -0.416 0.327 1.7% 0.66 [0.35, 1.25] 2002
Cafiero 2003 0.285 0.198 4.0% 1.33 [0.90, 1.96] 2003
Watanabe 2004 (JFMTC15-2) -0.128 0.222 3.3% 0.88 [0.57, 1.36] 2004
Glimelius 2005 (NGTATG) -0.1 0.101 9.2% 0.90 [0.74, 1.10] 2005
Sakamoto 2007 (JFMTC15-1) -0.094 0.165 5.2% 0.91 [0.66, 1.26] 2007
Koda 2009 -1.309 0.845 0.3% 0.27 [0.05, 1.42] 2009
Hamaguchi 2011 -0.511 0.239 2.9% 0.60 [0.38, 0.96] 2011
Total (95% CI) 100.0% 0.83 [0.76, 0.91]
Heterogeneity: Tau² = 0.01; Chi² = 28.73, df = 20 (P = 0.09); I² = 30%
Test for overall effect: Z = 4.11 (P < 0.0001)
0.1 0.2 0.5 1 2 5 10
Favours adjuvant
Favours control

Os: larger studies

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI	Year
Fisher 1988 (NSABP)	-0.236	0.134	7.7%	0.79 [0.61, 1.03]	1988
Krook 1991 (NCCTG)	-0.342	0.134	7.7%	0.71 [0.55, 0.92]	1991
Matsuda 1991 (SGACCS)	-0.03	0.119	9.1%	0.97 [0.77, 1.23]	1991
Bosset 2006 (EORTC)	-0.163	0.105	10.7%	0.85 [0.69, 1.04]	1993
QUASAR 2007	-0.261	0.13	8.0%	0.77 [0.60, 0.99]	1994
CCCSGJ 1995	-0.416	0.122	8.8%	0.66 [0.52, 0.84]	1995
Yasutomi 1997 (JFMTC 7-2)	-0.051	0.133	7.8%	0.95 [0.73, 1.23]	1997
Kodaira 1998 (JFMTC 7-1)	-0.073	0.125	8.5%	0.93 [0.73, 1.19]	1998
Taal 2001 (NACCP)	-0.051	0.184	4.7%	0.95 [0.66, 1.36]	2001
Cafiero 2003	0.285	0.198	4.1%	1.33 [0.90, 1.96]	2003
Watanabe 2004 (JFMTC15-2)	-0.128	0.222	3.4%	0.88 [0.57, 1.36]	2004
Glimelius 2005 (NGTATG)	-0.1	0.101	11.2%	0.90 [0.74, 1.10]	2005
Sakamoto 2007 (JFMTC15-1)	-0.094	0.165	5.6%	0.91 [0.66, 1.26]	2007
Hamaguchi 2011	-0.511	0.239	3.0%	0.60 [0.38, 0.96]	2011
Total (95% CI)			**100.0%**	**0.85 [0.78, 0.93]**	

Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 17.62$, df = 13 (P = 0.17); $I^2 = 26\%$

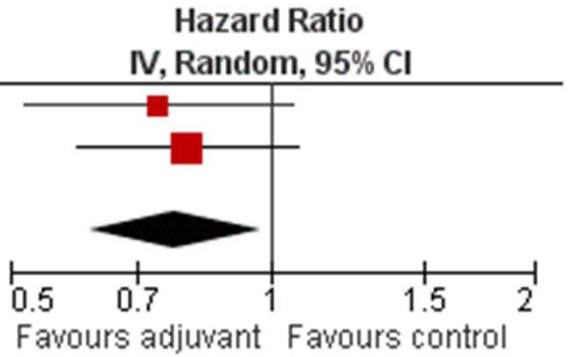
Test for overall effect: Z = 3.64 (P = 0.0003)



Stage II

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Glimelius 2005 (NGTATG)	-0.301	0.182	40.5%	0.74 [0.52, 1.06]
QUASAR 2007	-0.223	0.15	59.5%	0.80 [0.60, 1.07]
Total (95% CI)			**100.0%**	**0.78 [0.62, 0.97]**

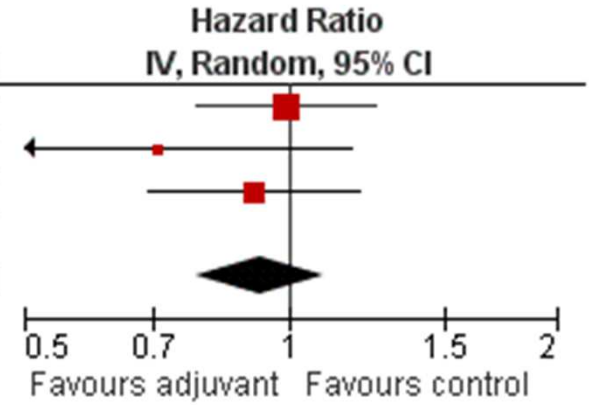
Heterogeneity: Tau² = 0.00; Chi² = 0.11, df = 1 (P = 0.74); I² = 0%
Test for overall effect: Z = 2.20 (P = 0.03)



Stage III

Study or Subgroup	log[Hazard Ratio]	SE	Weight	Hazard Ratio IV, Random, 95% CI
Glimelius 2005 (NGTATG)	-0.01	0.119	51.8%	0.99 [0.78, 1.25]
Hafström 1990	-0.342	0.255	11.3%	0.71 [0.43, 1.17]
Kodaira 1998 (JFMTC 7-1)	-0.094	0.141	36.9%	0.91 [0.69, 1.20]
Total (95% CI)			**100.0%**	**0.92 [0.78, 1.09]**

Heterogeneity: Tau² = 0.00; Chi² = 1.41, df = 2 (P = 0.49); I² = 0%
Test for overall effect: Z = 0.92 (P = 0.36)

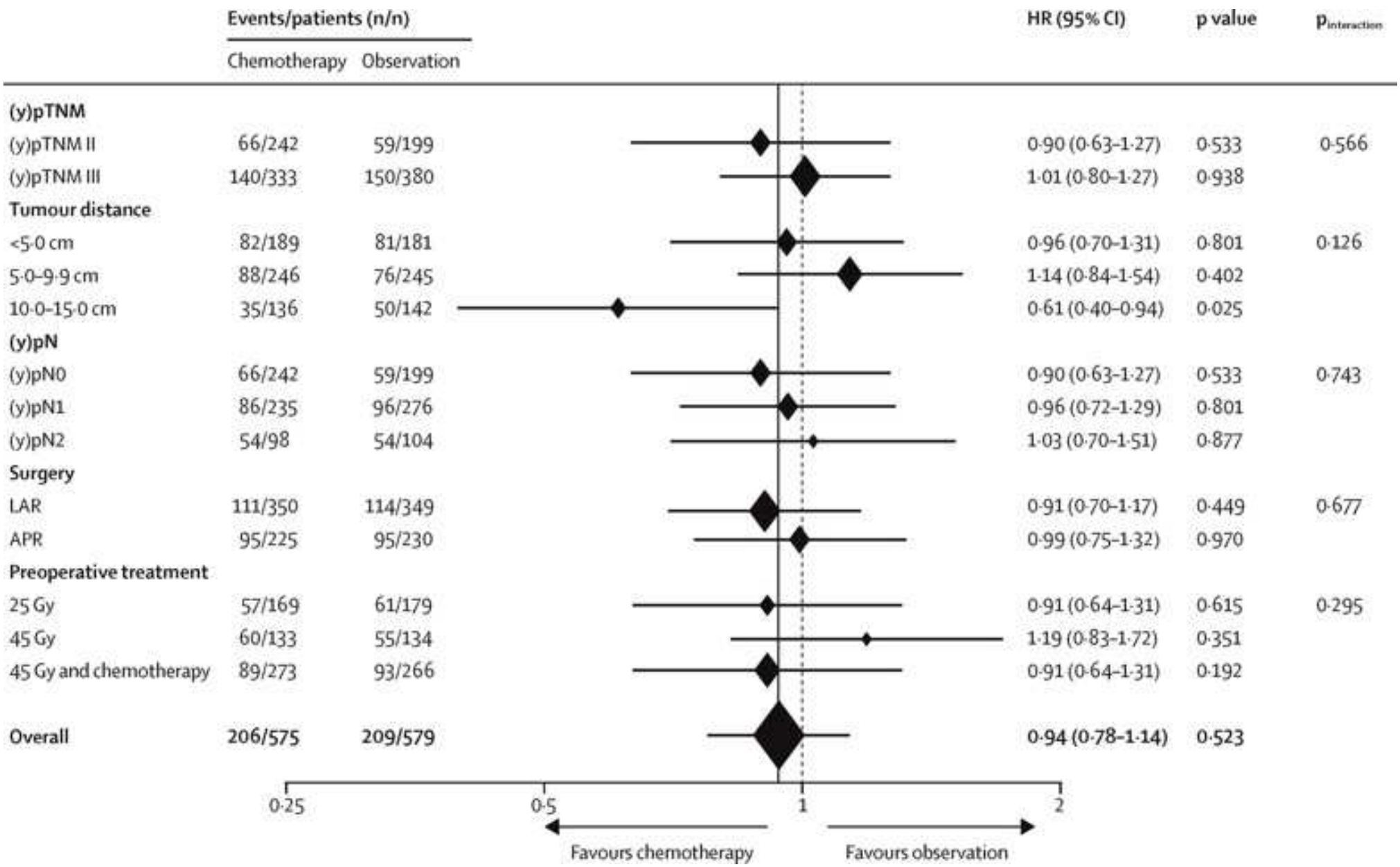


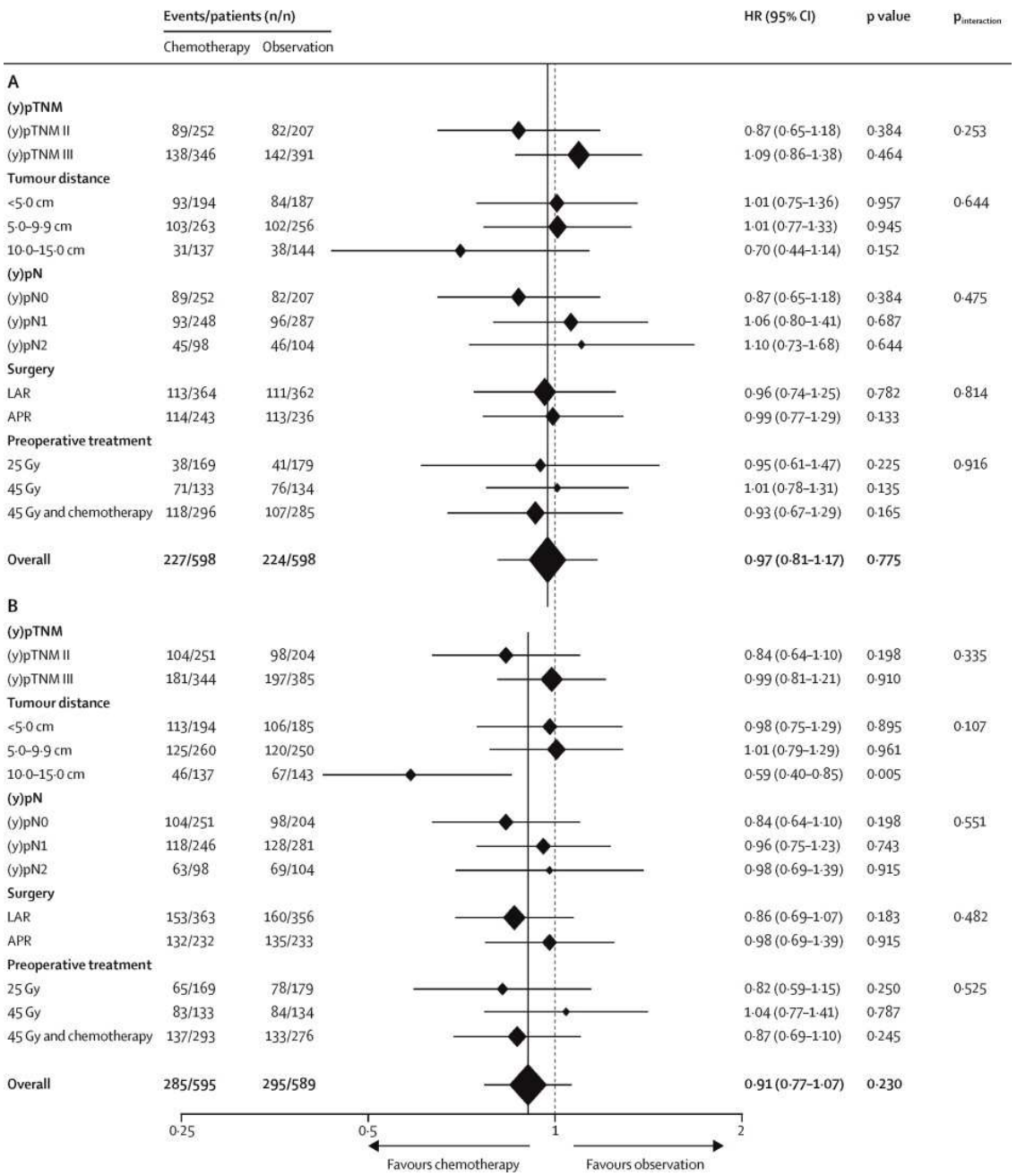
ARTICLES | VOLUME 16, ISSUE 2, P200-207, FEBRUARY 01, 2015

Adjuvant chemotherapy after preoperative (chemo)radiotherapy and surgery for patients with rectal cancer: a systematic review and meta-analysis of individual patient data

Anne J Breugom, MD † • Marloes Swets, MD † • Prof Jean-François Bosset, MD • ... Gerrit-Jan Liefers, PhD • Prof Hein Putter, PhD • Prof Cornelis J H van de Velde, PhD • Show all authors • Show footnotes

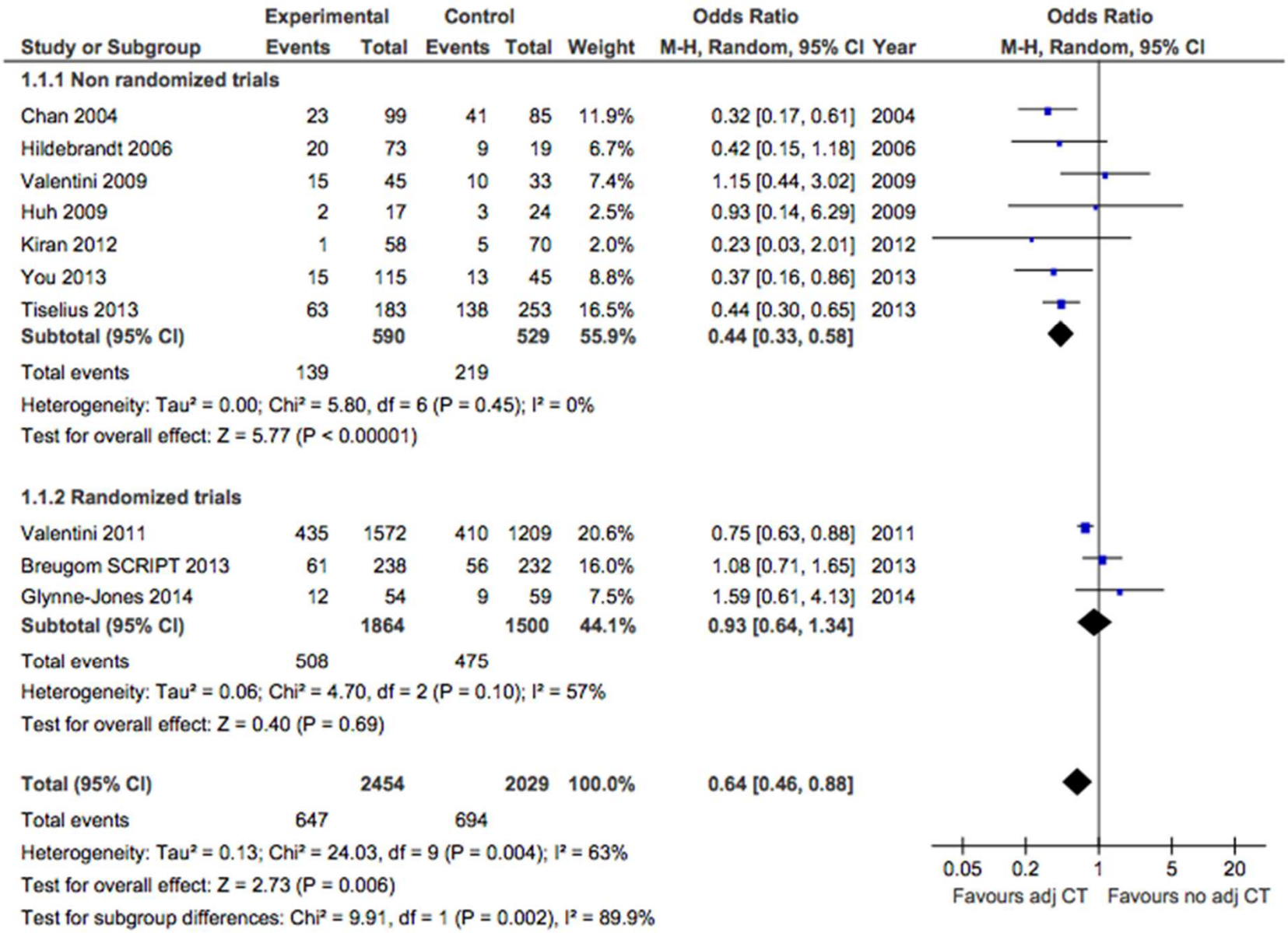
Published: January 11, 2015 • DOI: https://doi.org/10.1016/S1470-2045(14)71199-4 •


Events/patients (n/n)
Chemotherapy
Observation
HR (95% CI)
p value
$p_{interaction}$
(y)pTNM
(y)pTNM II 66/242 59/199 0·90 (0·63–1·27) 0·533 0·566
(y)pTNM III 140/333 150/380 1·01 (0·80–1·27) 0·938
Tumour distance
<5·0 cm 82/189 81/181 0·96 (0·70–1·31) 0·801 0·126
5·0–9·9 cm 88/246 76/245 1·14 (0·84–1·54) 0·402
10·0–15·0 cm 35/136 50/142 0·61 (0·40–0·94) 0·025
(y)pN
(y)pN0 66/242 59/199 0·90 (0·63–1·27) 0·533 0·743
(y)pN1 86/235 96/276 0·96 (0·72–1·29) 0·801
(y)pN2 54/98 54/104 1·03 (0·70–1·51) 0·877
Surgery
LAR 111/350 114/349 0·91 (0·70–1·17) 0·449 0·677
APR 95/225 95/230 0·99 (0·75–1·32) 0·970
Preoperative treatment
25 Gy 57/169 61/179 0·91 (0·64–1·31) 0·615 0·295
45 Gy 60/133 55/134 1·19 (0·83–1·72) 0·351
45 Gy and chemotherapy 89/273 93/266 0·91 (0·64–1·31) 0·192
Overall 206/575 209/579 0·94 (0·78–1·14) 0·523
0·25
0·5
1
2
Favours chemotherapy
Favours observation

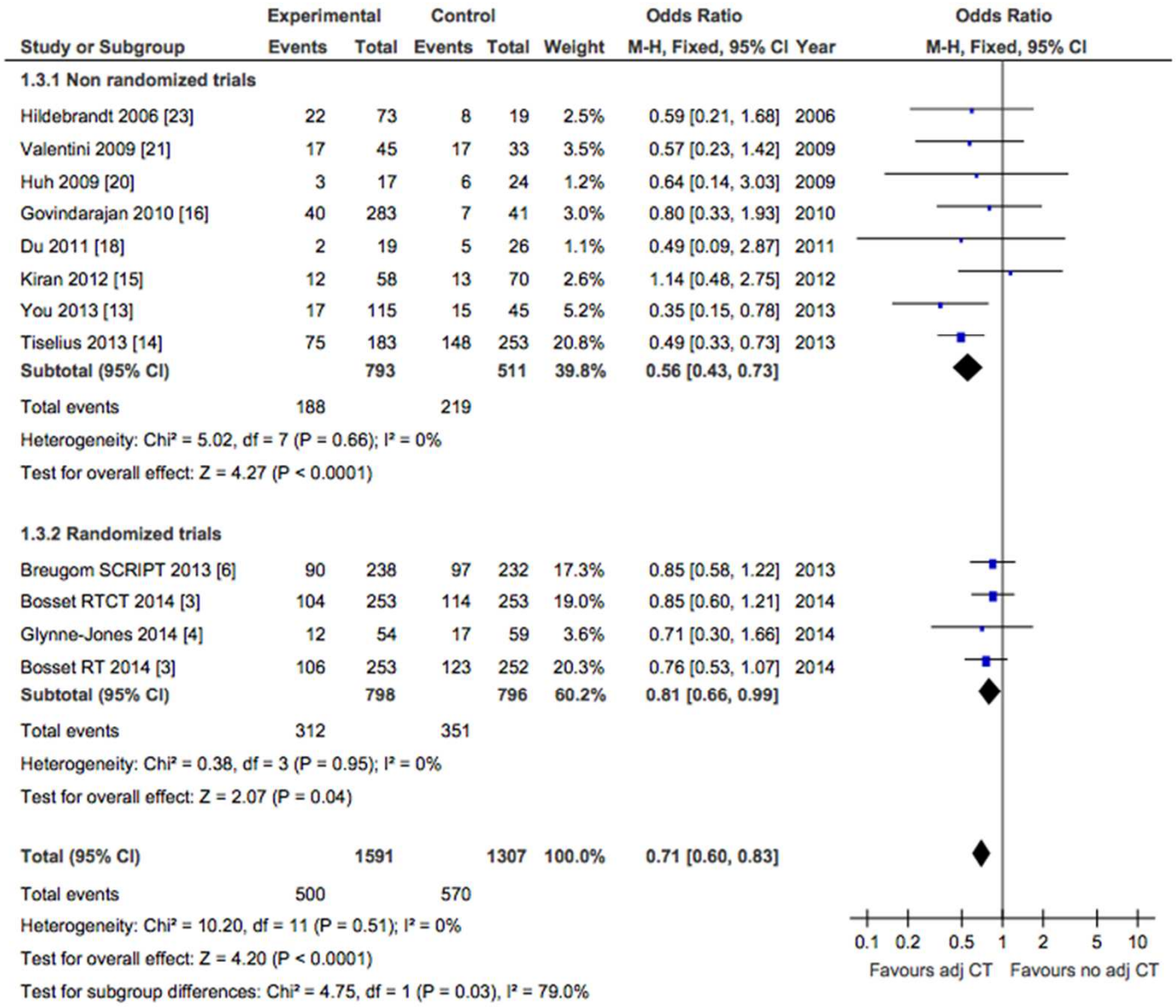

Events/patients (n/n)
Chemotherapy
Observation
HR (95% CI)
p value
$p_{interaction}$
A
(y)pTNM
(y)pTNM II 89/252 82/207 0·87 (0·65–1·18) 0·384 0·253
(y)pTNM III 138/346 142/391 1·09 (0·86–1·38) 0·464
Tumour distance
<5·0 cm 93/194 84/187 1·01 (0·75–1·36) 0·957 0·644
5·0–9·9 cm 103/263 102/256 1·01 (0·77–1·33) 0·945
10·0–15·0 cm 31/137 38/144 0·70 (0·44–1·14) 0·152
(y)pN
(y)pN0 89/252 82/207 0·87 (0·65–1·18) 0·384 0·475
(y)pN1 93/248 96/287 1·06 (0·80–1·41) 0·687
(y)pN2 45/98 46/104 1·10 (0·73–1·68) 0·644
Surgery
LAR 113/364 111/362 0·96 (0·74–1·25) 0·782 0·814
APR 114/243 113/236 0·99 (0·77–1·29) 0·133
Preoperative treatment
25 Gy 38/169 41/179 0·95 (0·61–1·47) 0·225 0·916
45 Gy 71/133 76/134 1·01 (0·78–1·31) 0·135
45 Gy and chemotherapy 118/296 107/285 0·93 (0·67–1·29) 0·165
Overall 227/598 224/598 0·97 (0·81–1·17) 0·775
B
(y)pTNM
(y)pTNM II 104/251 98/204 0·84 (0·64–1·10) 0·198 0·335
(y)pTNM III 181/344 197/385 0·99 (0·81–1·21) 0·910
Tumour distance
<5·0 cm 113/194 106/185 0·98 (0·75–1·29) 0·895 0·107
5·0–9·9 cm 125/260 120/250 1·01 (0·79–1·29) 0·961
10·0–15·0 cm 46/137 67/143 0·59 (0·40–0·85) 0·005
(y)pN
(y)pN0 104/251 98/204 0·84 (0·64–1·10) 0·198 0·551
(y)pN1 118/246 128/281 0·96 (0·75–1·23) 0·743
(y)pN2 63/98 69/104 0·98 (0·69–1·39) 0·915
Surgery
LAR 153/363 160/356 0·86 (0·69–1·07) 0·183 0·482
APR 132/232 135/233 0·98 (0·69–1·39) 0·915
Preoperative treatment
25 Gy 65/169 78/179 0·82 (0·59–1·15) 0·250 0·525
45 Gy 83/133 84/134 1·04 (0·77–1·41) 0·787
45 Gy and chemotherapy 137/293 133/276 0·87 (0·69–1·10) 0·245
Overall 285/595 295/589 0·91 (0·77–1·07) 0·230
0·25
0·5
1
2
Favours chemotherapy
Favours observation

International Journal of Colorectal Disease
April 2015, Volume 30, Issue 4, pp 447–457 | Cite as

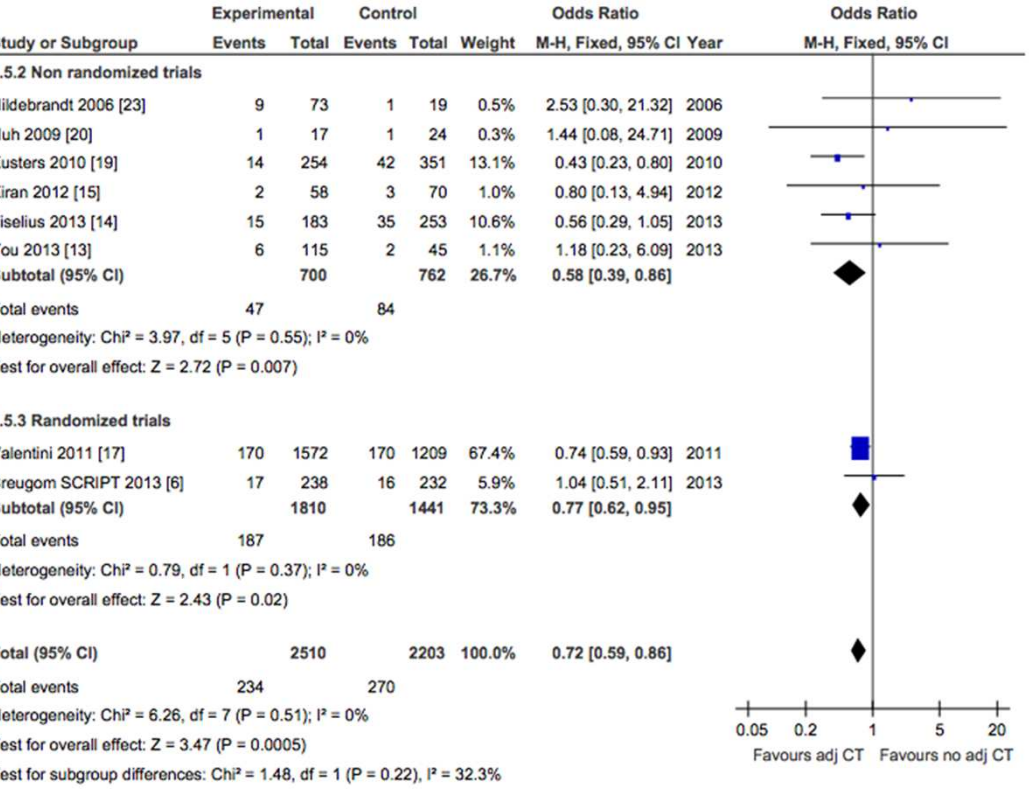
A systematic review and meta-analysis of adjuvant chemotherapy after neoadjuvant treatment and surgery for rectal cancer



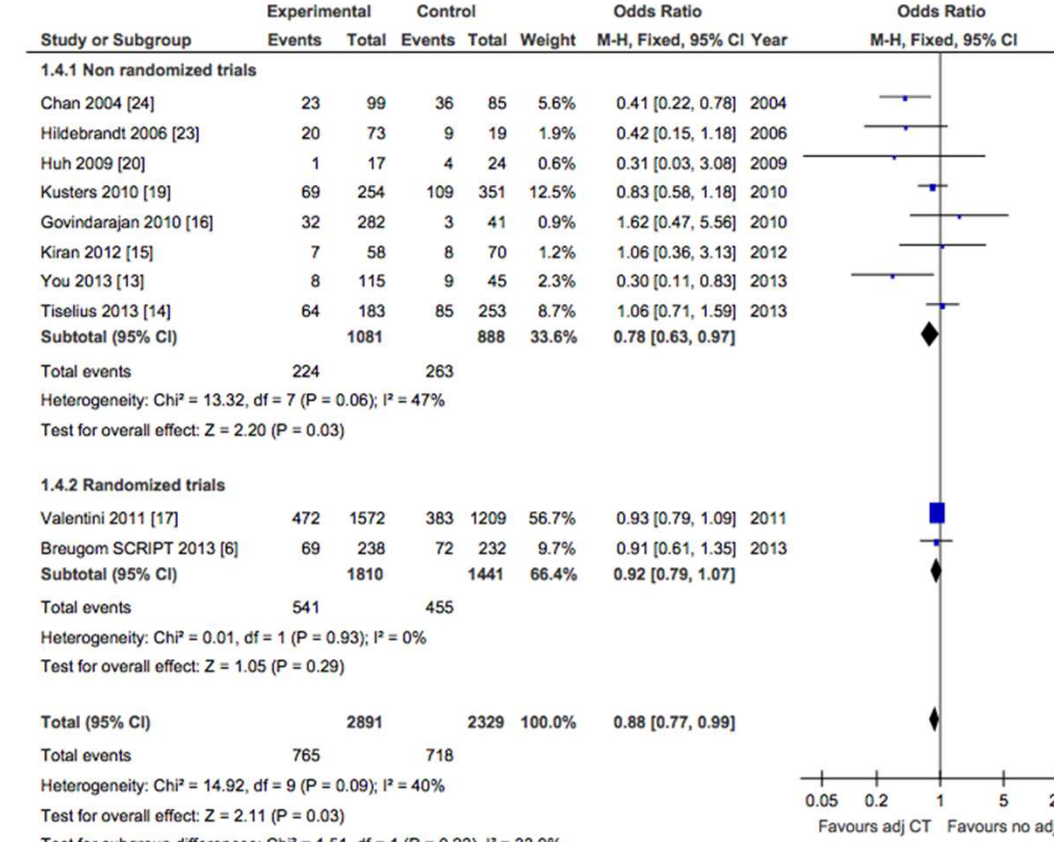
2 Forest plot and meta-analysis of 5-year overall survival



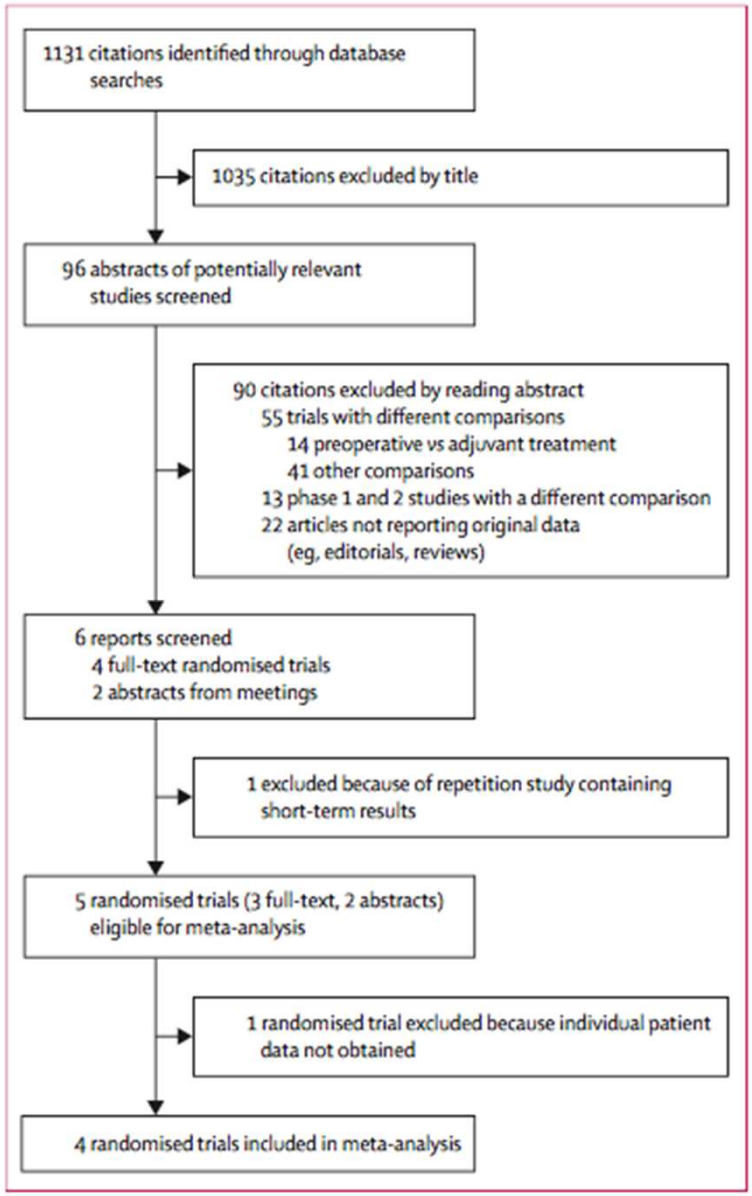
Forest plot and meta-analysis of 5-year disease-free survival



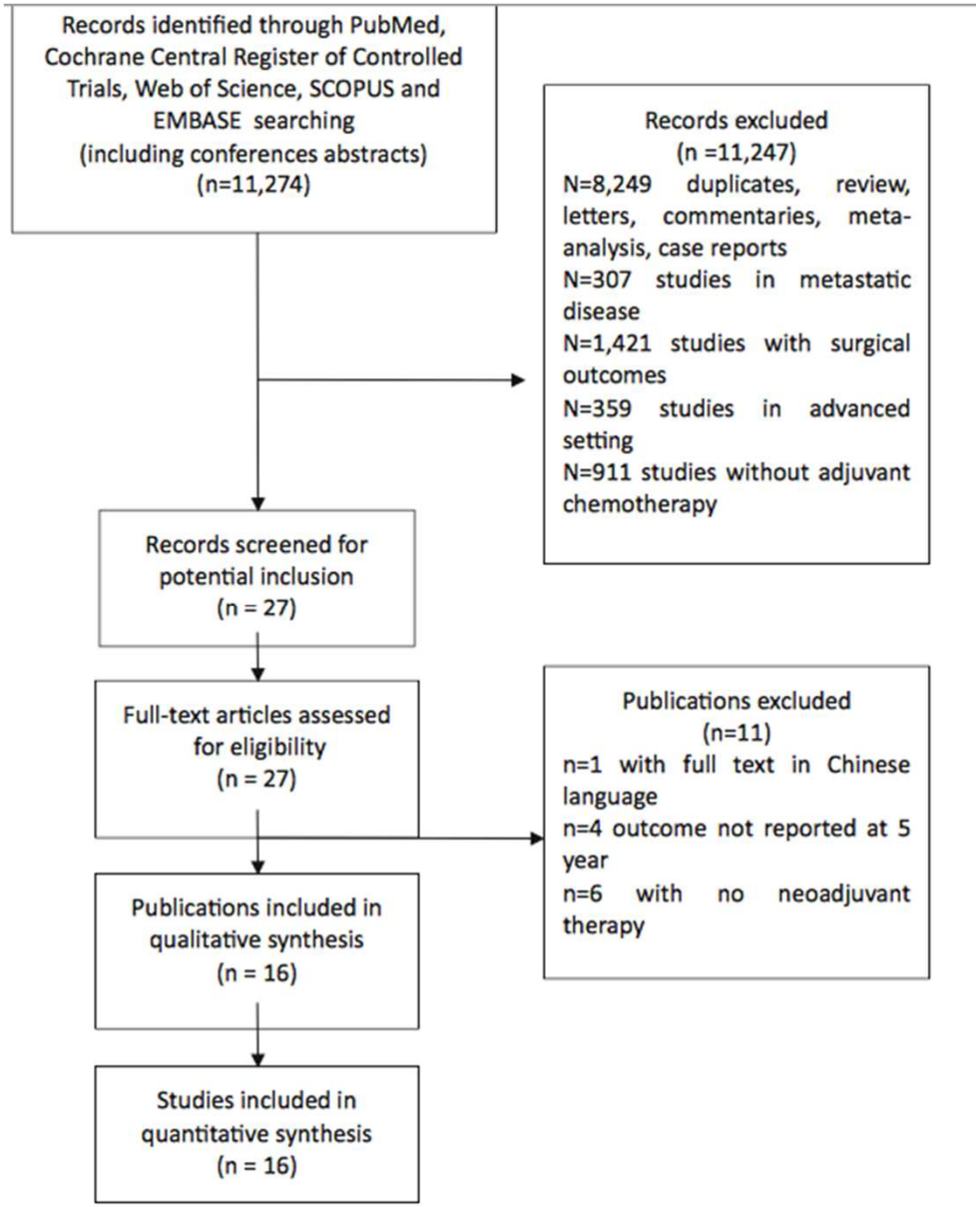
t plot and meta-analysis of 5-year local relapse rate



Forest plot and meta-analysis of 5-year distant metastases rate



Breugom A; lancet Oncol – IPD, RCTs



Petrelli F et al; Int J colorectal Dis – Aggregate data, Incl RCTs, retrospective studies

Adjuvant Chemotherapy Is Associated With Improved Overall Survival in Locally Advanced Rectal Cancer After Achievement of a Pathologic Complete Response to Chemoradiation

Danish Shahab, Emmanuel Gabriel, Kristopher Attwood, Wen Wee Ma, Valerie Francescutti, Steven Nurkin, Patrick M. Boland

re 2 **Analysis of Overall Survival. A Significant Difference Was Found in Overall Survival Between the 2 Chemotherapy Cohorts (*P* < .001); Patients Receiving Neoadjuvant Plus Adjuvant Chemotherapy Had Better Outcomes**

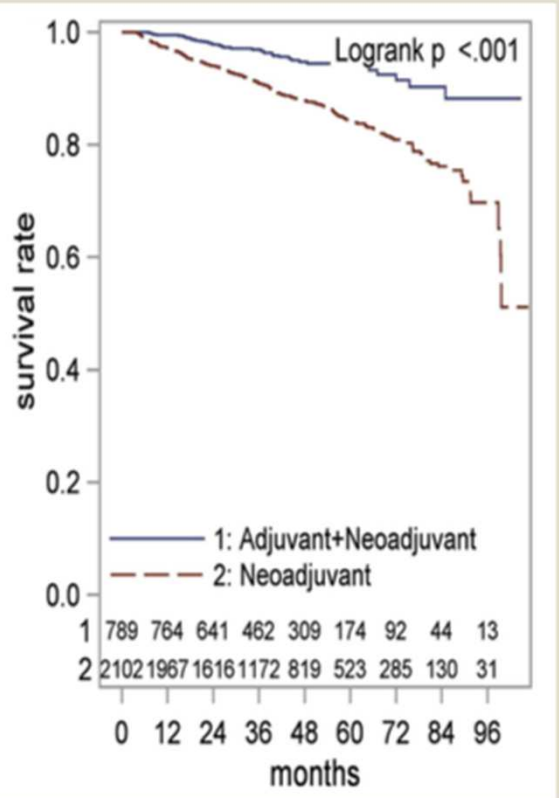
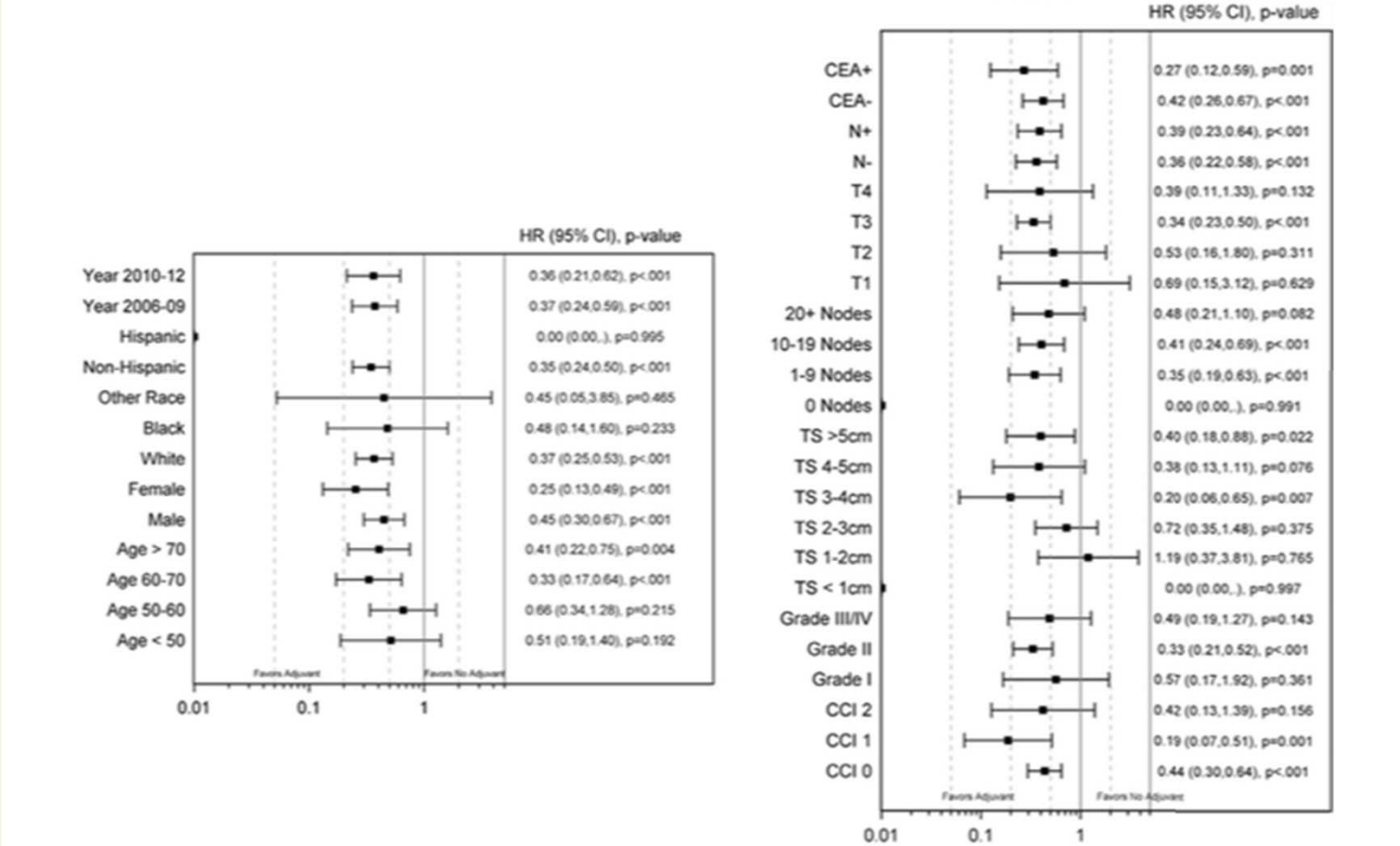


Figure 3 **Forest Plots Showing Adjuvant Chemotherapy Was More Likely for Younger Patients (Aged < 60 Years), Higher Grade, Lo Charlson-Deyo Comorbidity Index (CCI), Positive Carcinoembryonic Antigen (CEA) Status, Higher Clinical T Stage, and Hig Clinical N Stage. A Consistent Trend Toward Benefit Was Maintained Across Multiple Subgroups**



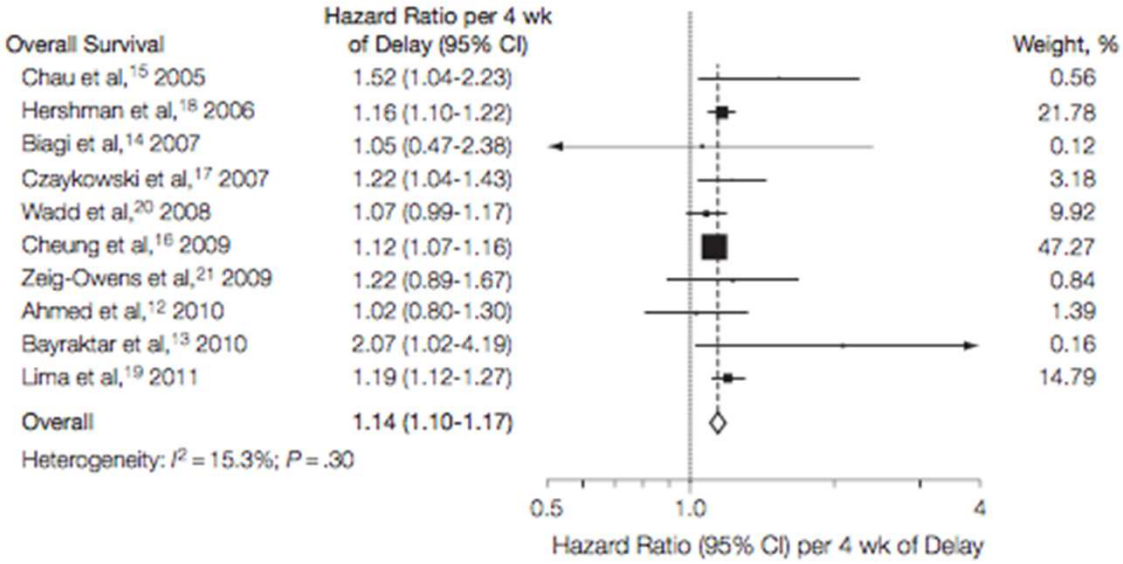
ONLINE FIRST

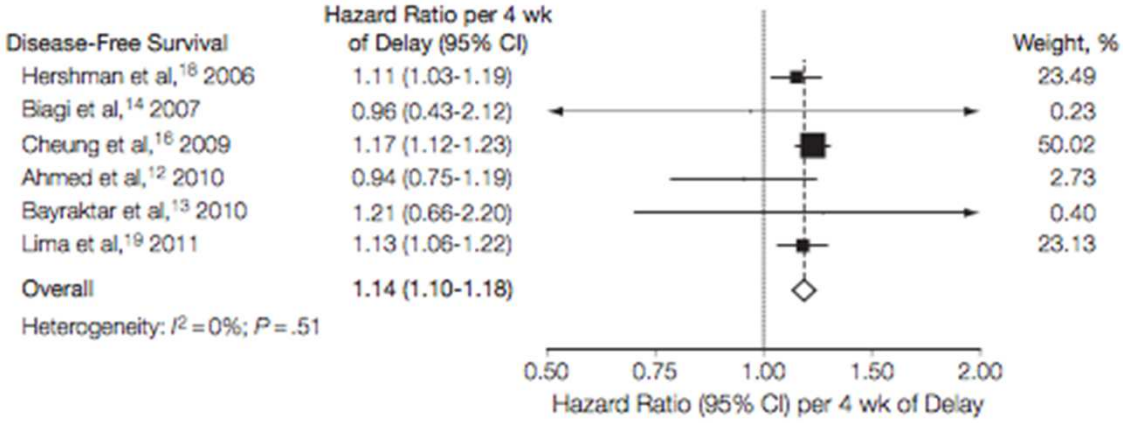
Association Between Time to Initiation of Adjuvant Chemotherapy and Survival in Colorectal Cancer

A Systematic Review and Meta-analysis

JAMA. 2011;305(22):2335-2342
Published online June 4, 2011. doi:10.1001/jama.2011.749

Figure 3. Individual Trial and Overall Hazard Ratios of Relationships Between Waiting Times for Adjuvant Chemotherapy and Overall Survival and Disease-Free Survival





Conclusions: Adjuvant chemotherapy

- Conflicting data on benefit in patients treated with neo-adjuvant CRT (nCRT)
- Clear survival benefit in patients treated with surgery
- Appears to benefit patients with pCR following nCRT
- Delay in initiation of adjuvant chemo appears to compromise outcomes

Wait and watch strategy in rectal cancer

HE LANCET
stroenterology & Hepatology
2, Issue 7, July 2017, Pages 501-513

tch-and-wait approach for locally advanced rectal
er after a clinical complete response following
djuvant chemoradiation: a systematic review and meta-
ysis

Dossa MD [a, b, c, d], Tyler R Chesney MD [a], Sergio A Acuna MD [b, c, d], Prof Nancy N Baxter PhD [a, b,

www.impactjournals.com/oncotarget/ Oncotarget, Advance Publications

Wait-and-see treatment strategies for rectal can patients with clinical complete response after neoadjuva chemoradiotherapy: a systematic review and meta-analysis

Jun Li[1], Lunjin Li[2], Lin Yang[3], Jiatian Yuan[1], Bo Lv[1], Yanan Yao[4] and Shasha Xi

[1] General Surgery Department and Central Lab, Affiliated Hospital/Clinical Medical College of Chengdu University, Che People's Republic of China

[2] Pharmacy Department, Affiliated Hospital/Clinical Medical College of Chengdu University, Chengdu, People's Repul China

[3] Department of Pathology, Cancer Hospital, Chinese Academy of Medical Sciences, Beijing, People's Republic of China

[4] Department of General Surgery, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, People's Repul China

[5] Central Lab, Affiliated Hospital/Clinical Medical College of Chengdu University, Chengdu, People's Republic of China

Oncological and Survival Outcomes in Watch and Wait Patients With a Clinical Complete Response After Neoadjuvant Chemoradiotherapy for Rectal Cancer: A Systematic Review and Pooled Analysis

Dattani, Mit, FRCS*; Heald, Richard J., FRCS*; Goussous, Ghaleb, FRCS†; Broadhurst, Jack, FRCS‡; São Julião, Guilherme P., MD§; Habr-Gama, Angelita, MD§; Oliva Perez, Rodrigo, PhD§; Moran, Brendan J., FRCSI‡

Annals of Surgery: May 9, 2018 - Volume Publish Ahead of Print - Issue - p
doi: 10.1097/SLA.0000000000002761
Meta-Analysis: PDF Only

THE LANCET
Gastroenterology & Hepatology
Volume 2, Issue 7, July 2017, Pages 501-513

Articles

A watch-and-wait approach for locally advanced rectal cancer after a clinical complete response following neoadjuvant chemoradiation: a systematic review and meta-analysis

Fahima Dossa MD [a, b, c, d], Tyler R Chesney MD [a], Sergio A Acuna MD [b, c, d], Prof Nancy N Baxter PhD [a, b, c, d]

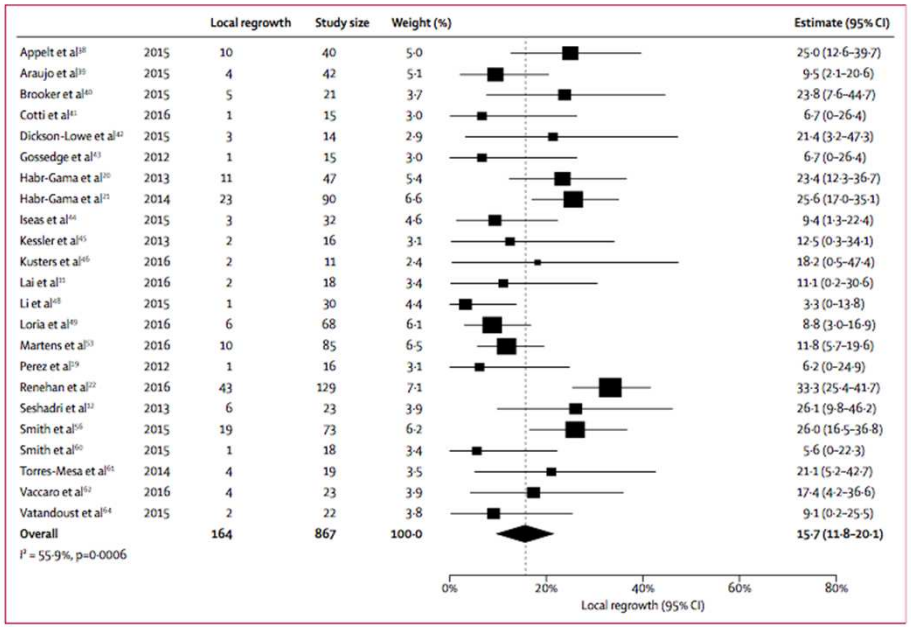
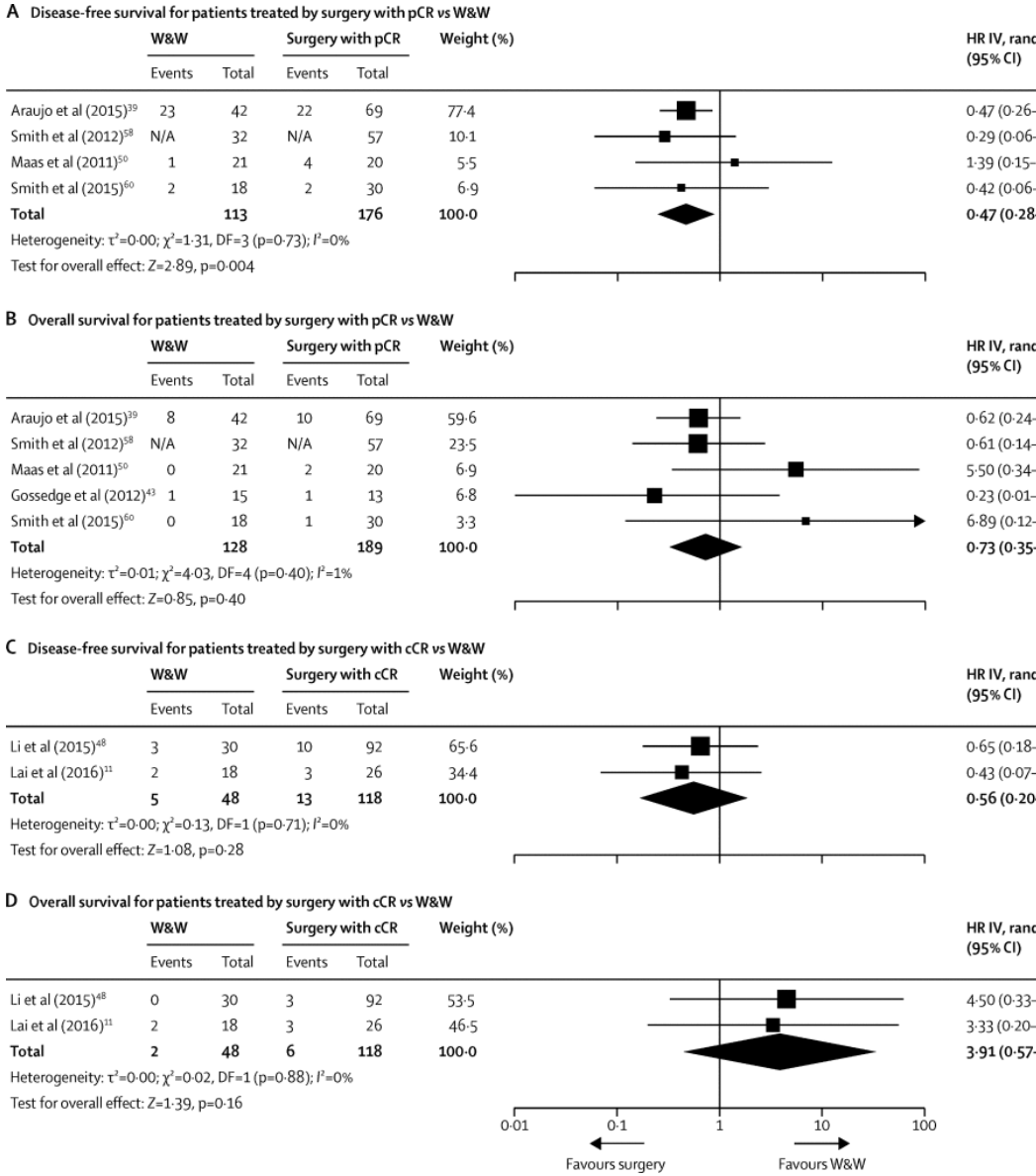
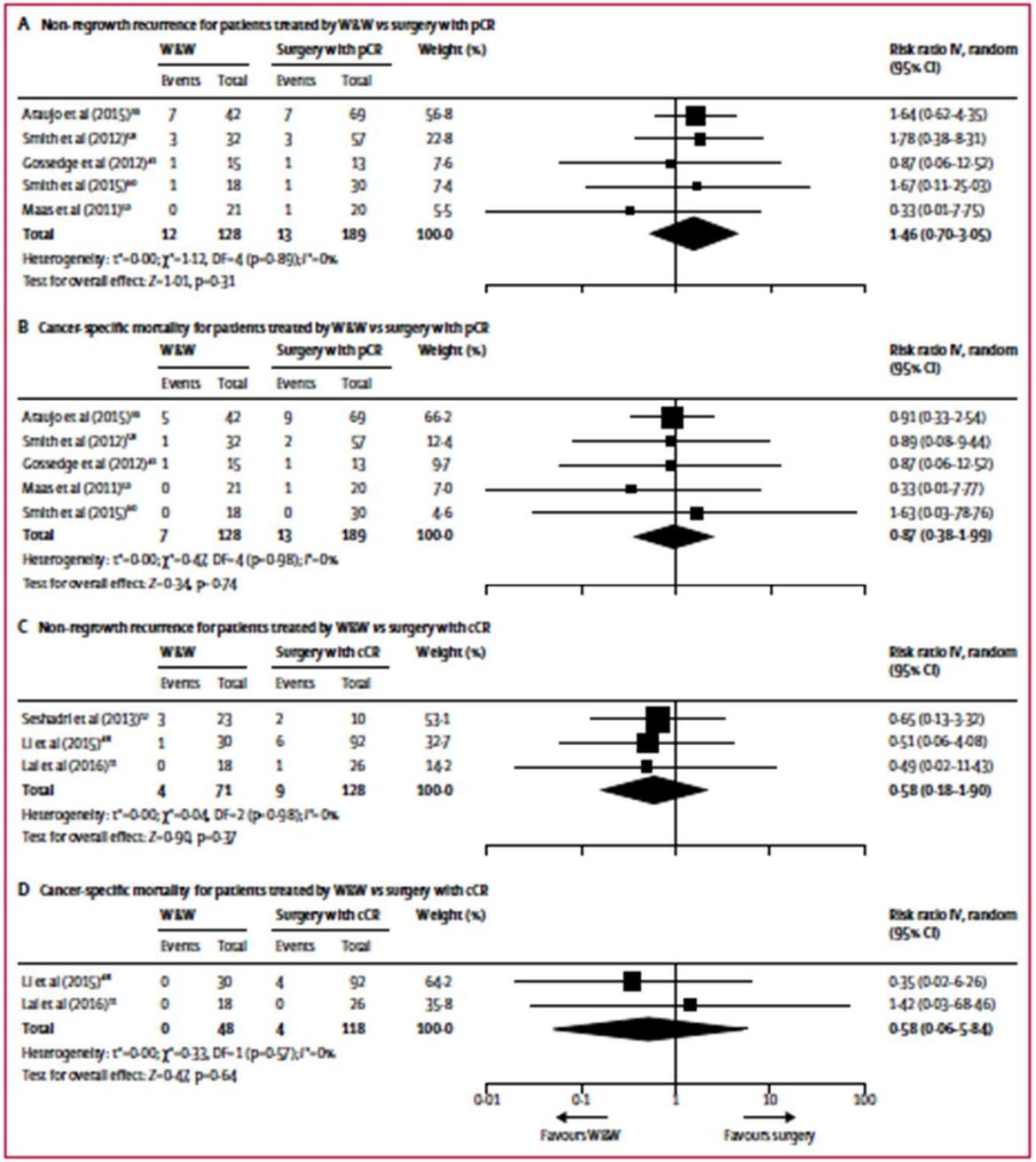


Figure 2: **Pooled proportion of patients with local regrowth in those managed by watch-and-wait**
Point estimates are based on 2-year local regrowth rates (where extractable) or crude proportions. Size of solid squares represents statistical weights.

Local regrowth

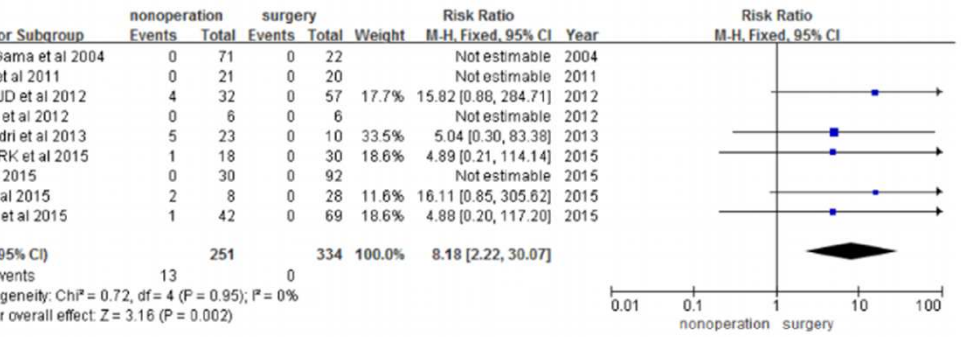


Non regrowth

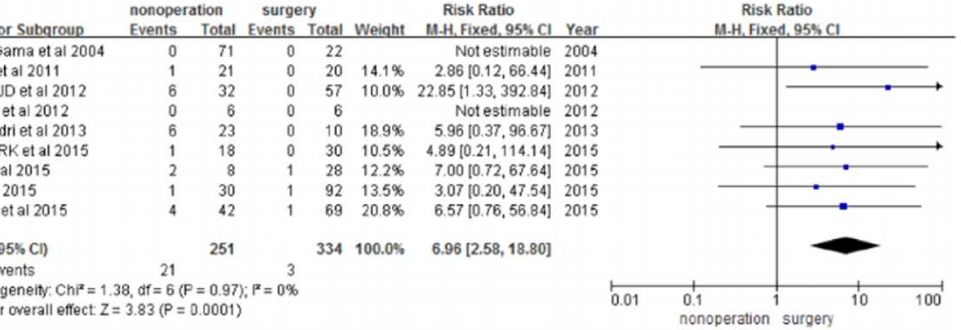


Local Recurrence

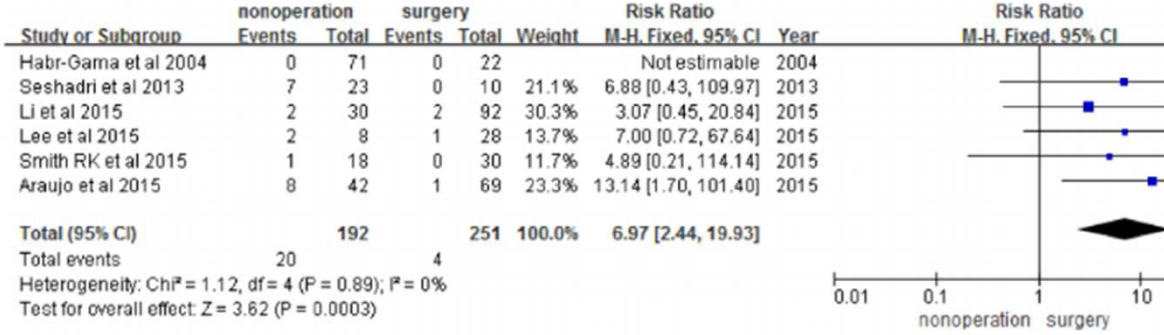
1-yr LR



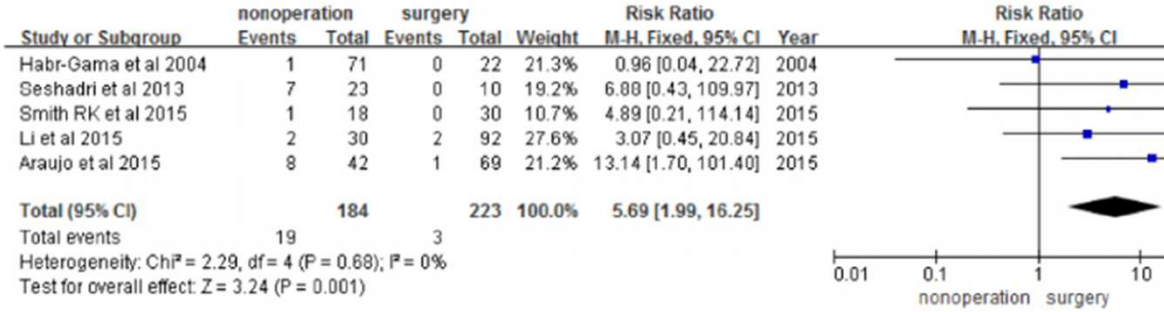
2-yr LR



3-yr LR

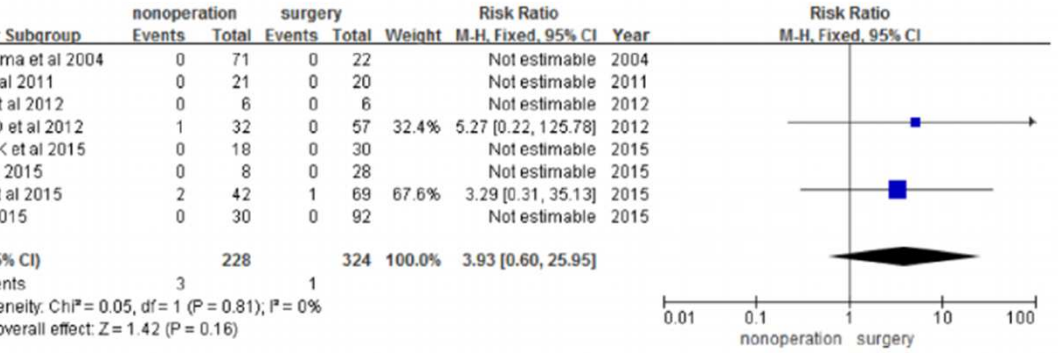


5-yr LR

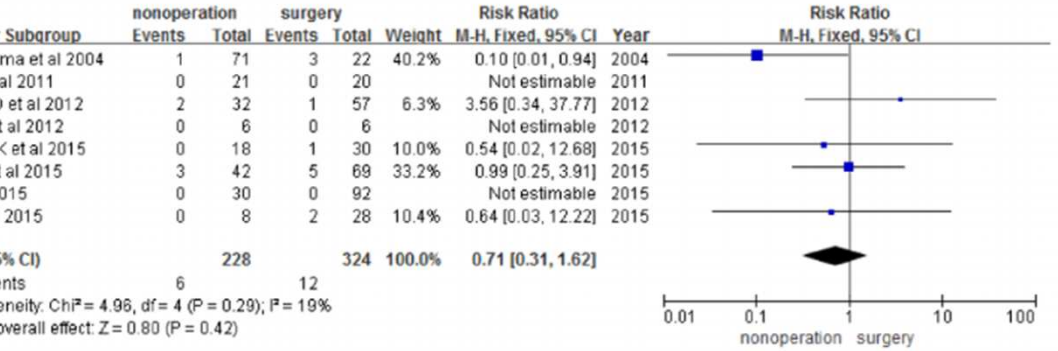


Distant Metastasis

1-yr DM

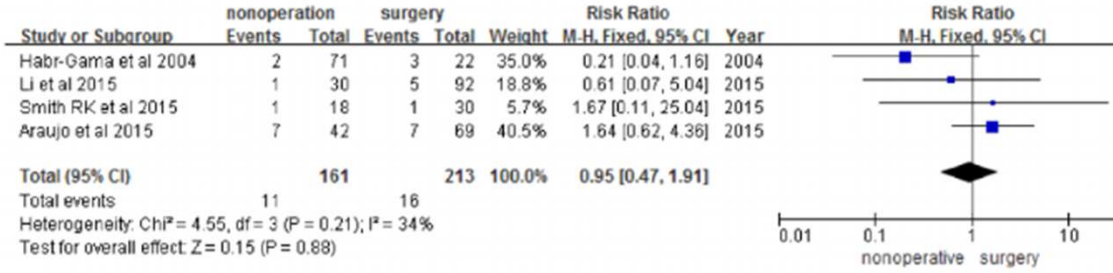


2-yr DM



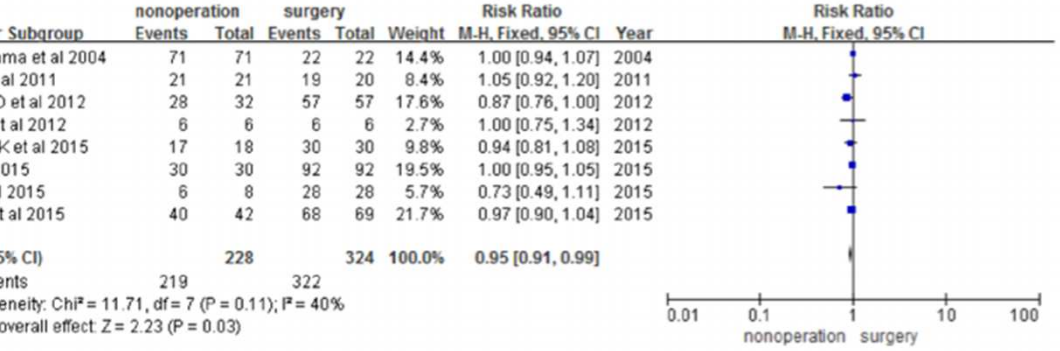
3-yr DM

5-yr DM

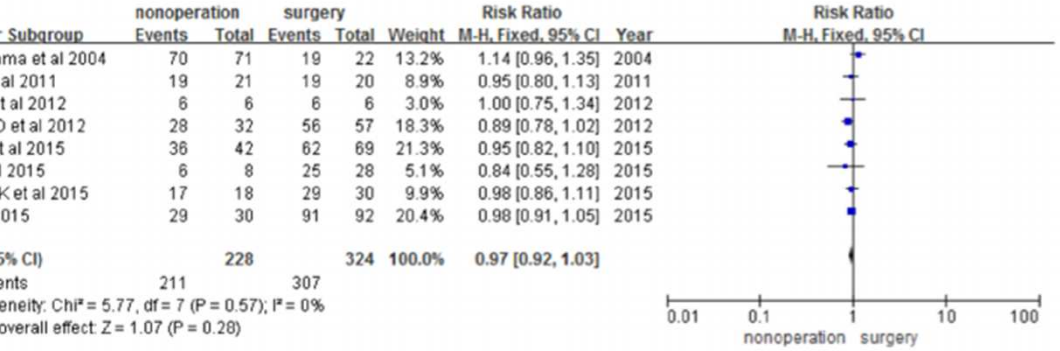


DFS

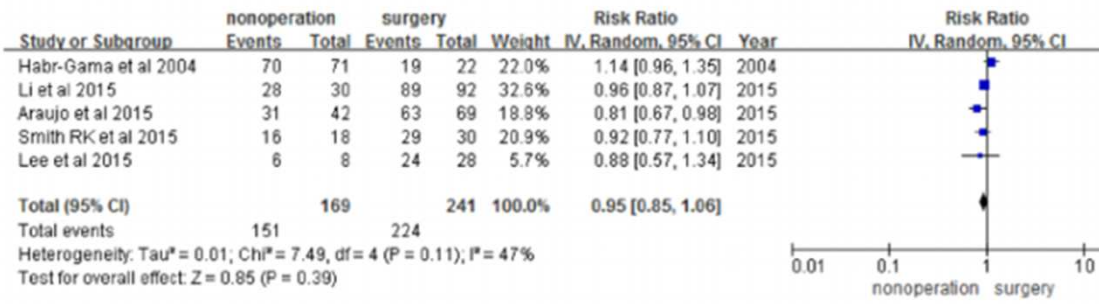
1-yr DFS



2-yr DFS



3-yr DFS

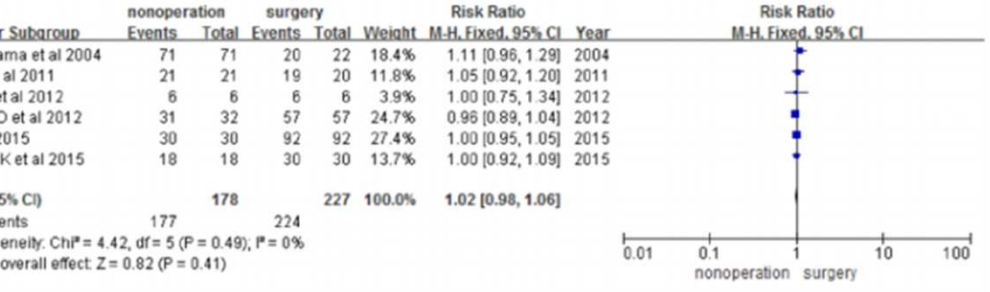


5-yr DFS

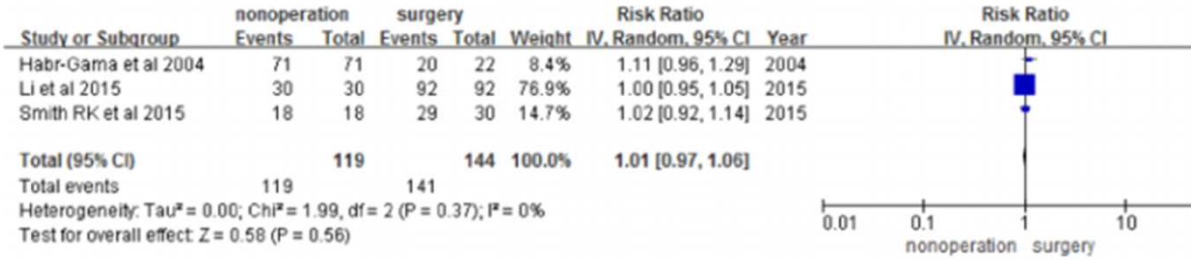
Overall survival ABS

1-yr OS

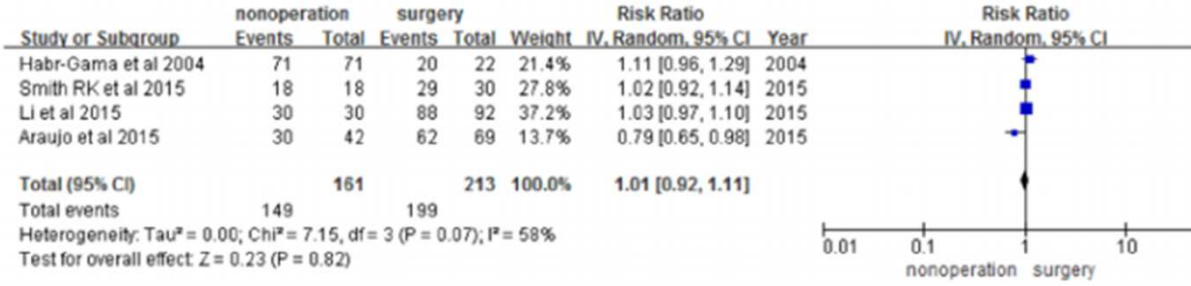
2-yr OS



3-yr OS



5-yr OS



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W&W conclusions

- Risk of local regrowth with W&W approach is around 15% and is higher than the risk of regrowth in patients with pCR who had surgery
- Wait-and-see strategy with strict selection criteria, an appropriate follow-up schedule, and salvage treatments achieved outcomes (DFS, OS, DM) at least as good as radical surgery
- Robust surveillance with early detection of regrowths allows a high rate of successful salvage surgery, without an increase in the risk of systemic disease, or adverse survival outcomes
- More prospective studies are needed to confirm long term safety