Integrated approaches in Locally Advanced Non-Small Cell Lung Cancer

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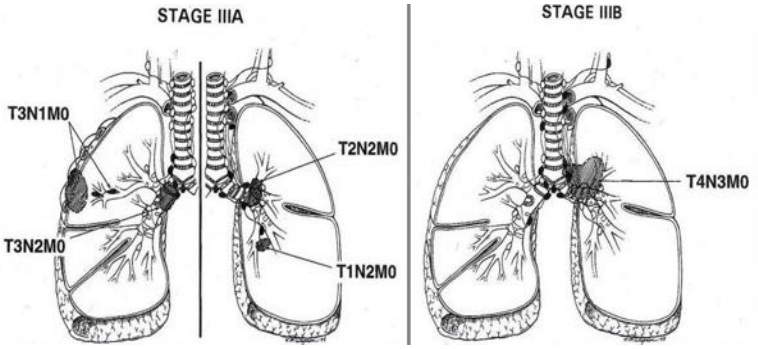
Locally Advanced NSCLC

is

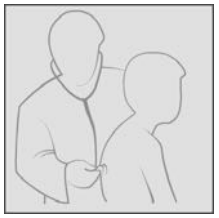
a widely heterogeneous disease

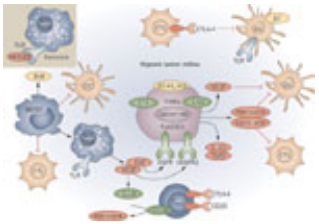


Staging

Clinical factors

Tumor biology





Non-Small Cell Lung Cancer:

The End of the Era of Therapeutic Nihilism?

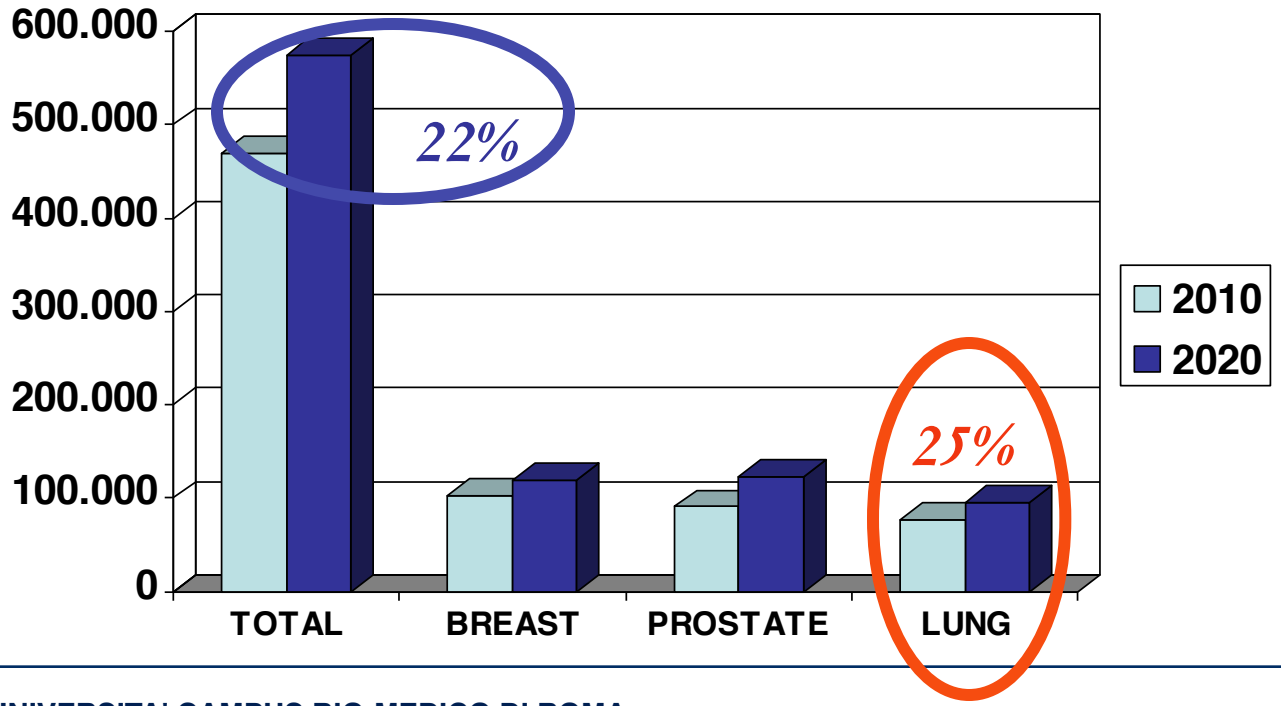
VOLUME 28 · NUMBER 35 · DECEMBER 10 2010

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

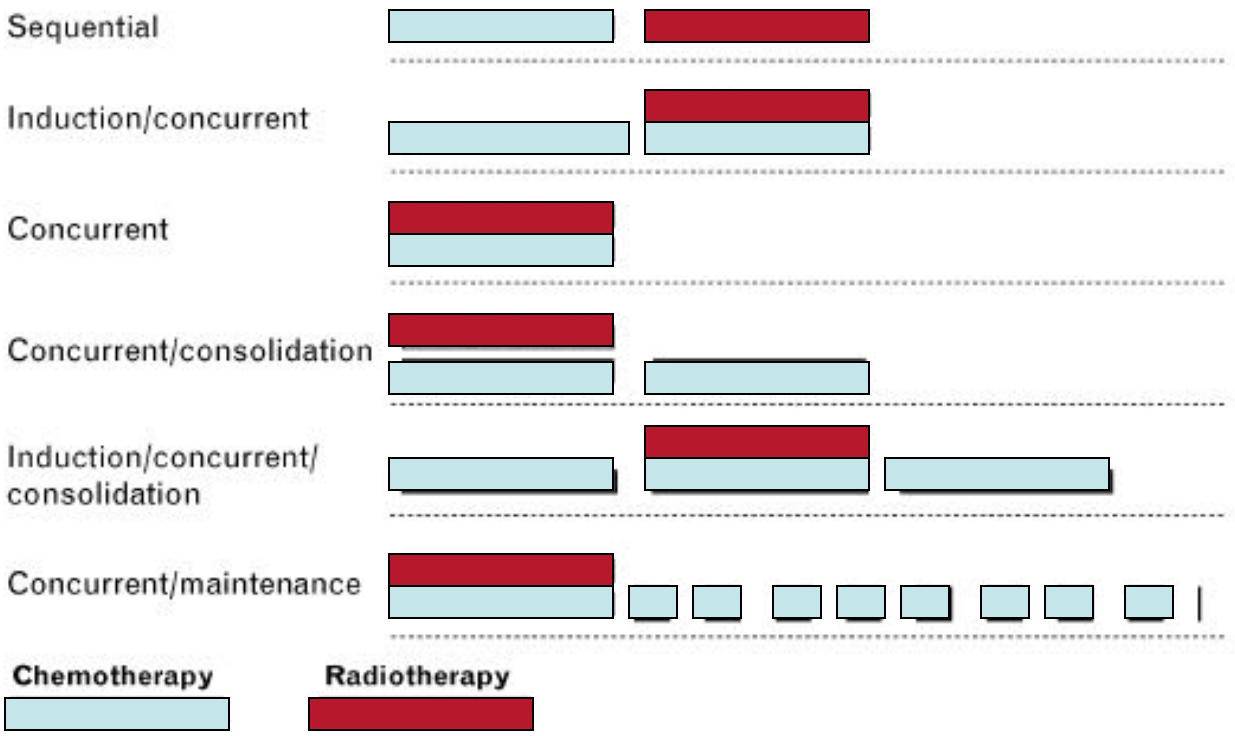
The Future of Radiation Oncology in the United States From 2010 to 2020: Will Supply Keep Pace With Demand?

Benjamin D. Smith, Bruce G. Haffty, Lynn D. Wilson, Grace L. Smith, Akshar N. Patel, and Thomas A. Buchholz



In the last decade, we have witnessed a wealth of clinical trials showing that radiotherapy is an important component in the treatment with curative intent.

What is the Optimal Sequence of Chemoradiation?



CONCURRENT vs SEQUENTIAL RT-CT

THE COCHRANE COLLABORATION®

711 patients
3 randomized trials

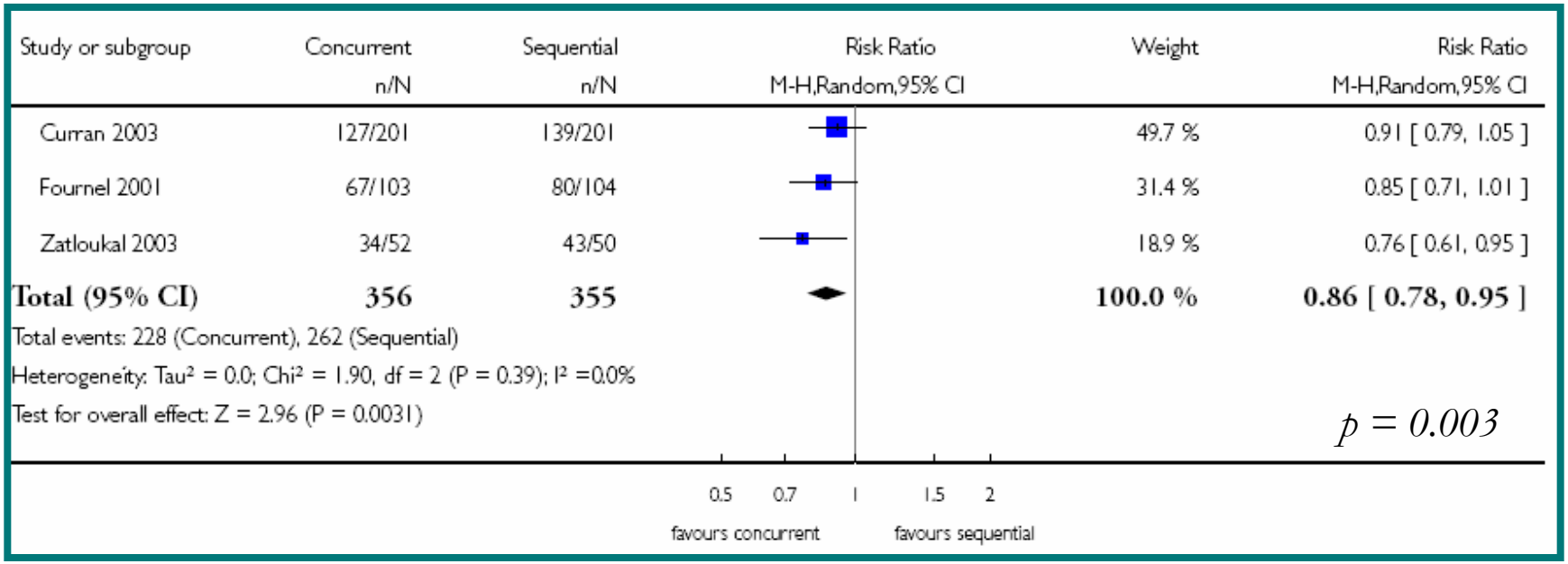
O'Rourke N. Clin Oncol 22:347–355, *2010*

1205 patients
6 randomized trials

Auperin A., J Clin Oncol 28:2181-2190, 2010

THE COCHRANE COLLABORATION®

14% reduction in risk of death at 2y



Study or subgroup	Concurrent n/N	Sequential n/N	Risk Ratio M-H,Random,95% CI	Weight	Risk Ratio M-H,Random,95% CI
Curran 2003	127/201	139/201		49.7 %	0.91 [0.79, 1.05]
Fournel 2001	67/103	80/104		31.4 %	0.85 [0.71, 1.01]
Zatloukal 2003	34/52	43/50		18.9 %	0.76 [0.61, 0.95]
Total (95% CI)	**356**	**355**		**100.0 %**	**0.86 [0.78, 0.95]**

Total events: 228 (Concurrent), 262 (Sequential)

Heterogeneity: $Tau^2 = 0.0$; $Chi^2 = 1.90$, df = 2 (P = 0.39); $I^2 = 0.0\%$

Test for overall effect: Z = 2.96 (P = 0.0031)

p = 0.003

O'Rourke N. Clin Oncol 2010

Clinical Oncology 22 (2010) 347–355

Contents lists available at ScienceDirect

Clinical Oncology

journal homepage: www.elsevier.com/locate/clon

Overview

Is Concurrent Chemoradiation the Standard of Care for Locally Advanced Non-small Cell Lung Cancer? A Review of Guidelines and Evidence

N. O'Rourke *, F. Macbeth †

* *Cochrane Lung Cancer Group, Beatson Oncology Centre, Gartnavel General Hospital, Glasgow, UK*
† *National Institute for Health and Clinical Excellence, London, UK*

	Median Survival (months)	Treatment- related mortality	G3 oesophagitis
Concurrent	16-17	3 %	19 %
Sequential	13-15	1,7 %	3 %

O'Rourke N. Clin Oncol 2010

VOLUME 28 · NUMBER 13 · MAY 1 2010

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Meta-Analysis of Concomitant Versus Sequential Radiochemotherapy in Locally Advanced Non–Small-Cell Lung Cancer

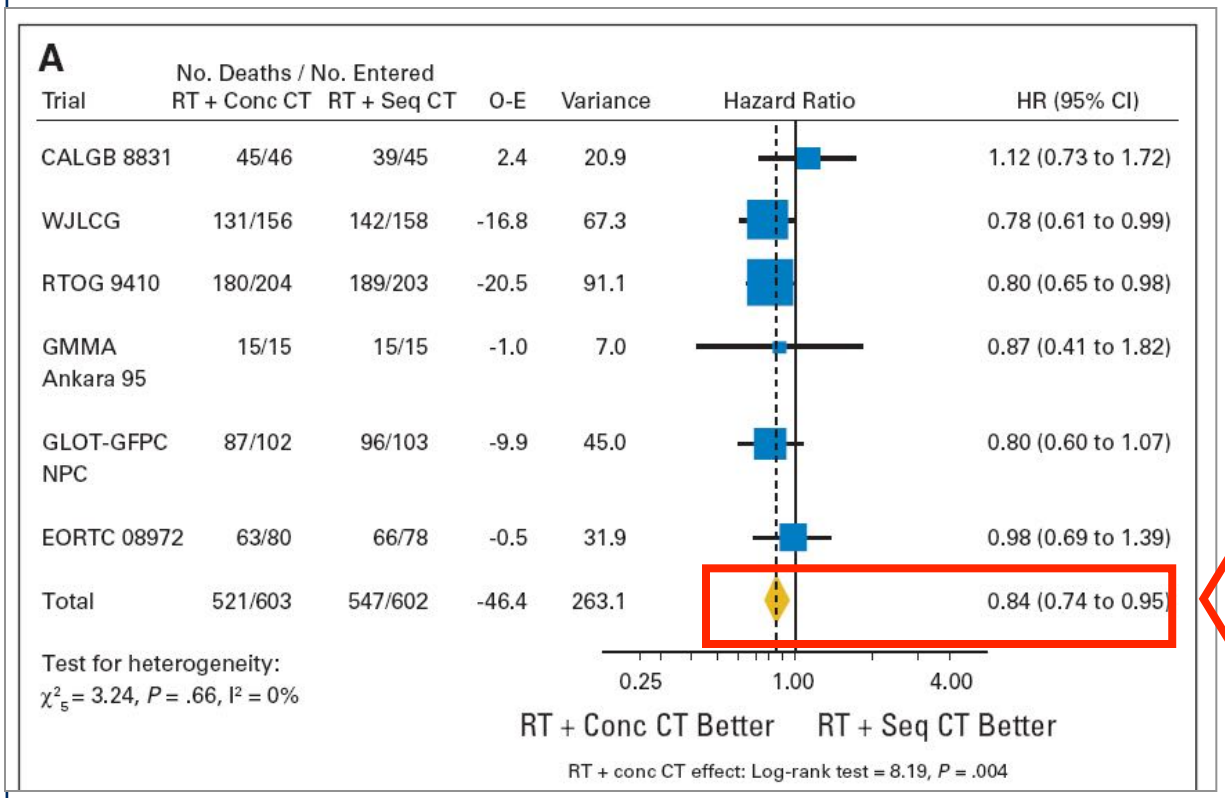
6 Trials
1205 pts
Median Follow-up 6 years

Auperin A., J Clin Oncol 28: 2181-2190, 2010

VOLUME 28 · NUMBER 13 · MAY 1 2010

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT



A

Trial	No. Deaths / No. Entered RT + Conc CT	RT + Seq CT	O-E	Variance	Hazard Ratio	HR (95% CI)
CALGB 8831	45/46	39/45	2.4	20.9		1.12 (0.73 to 1.72)
WJLCG	131/156	142/158	-16.8	67.3		0.78 (0.61 to 0.99)
RTOG 9410	180/204	189/203	-20.5	91.1		0.80 (0.65 to 0.98)
GMMA Ankara 95	15/15	15/15	-1.0	7.0		0.87 (0.41 to 1.82)
GLOT-GFPC NPC	87/102	96/103	-9.9	45.0		0.80 (0.60 to 1.07)
EORTC 08972	63/80	66/78	-0.5	31.9		0.98 (0.69 to 1.39)
Total	521/603	547/602	-46.4	263.1		0.84 (0.74 to 0.95)

Test for heterogeneity:
$\chi^2_5 = 3.24$, $P = .66$, $I^2 = 0\%$

Benefit concomitant RT-CT:

HR 0.84 95% CI, 0.74 to 0.95; p.004

Overall Survival

Auperin A., J Clin Oncol 28: 2181-2190, 2010

VOLUME 28 · NUMBER 13 · MAY 1 2010

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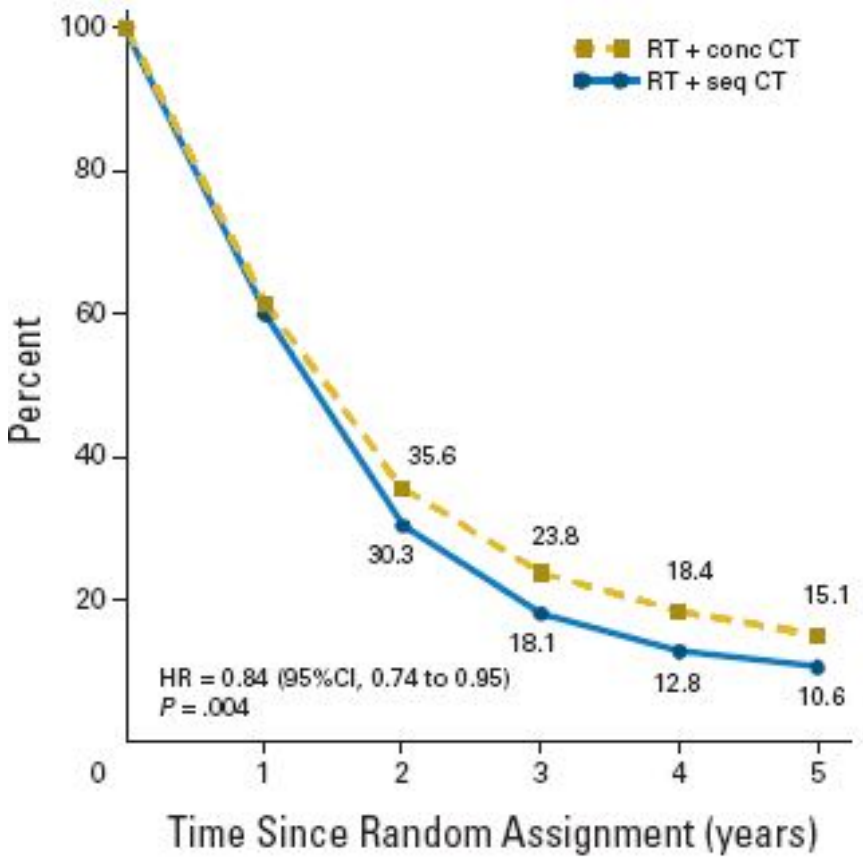

Absolute survival benefit of ***5.7% at 3 years*** and an absolute benefit of ***4.5% at 5 years***

Auperin A., J Clin Oncol 28: 2181-2190, 2010

VOLUME 28 · NUMBER 13 · MAY 1 2010

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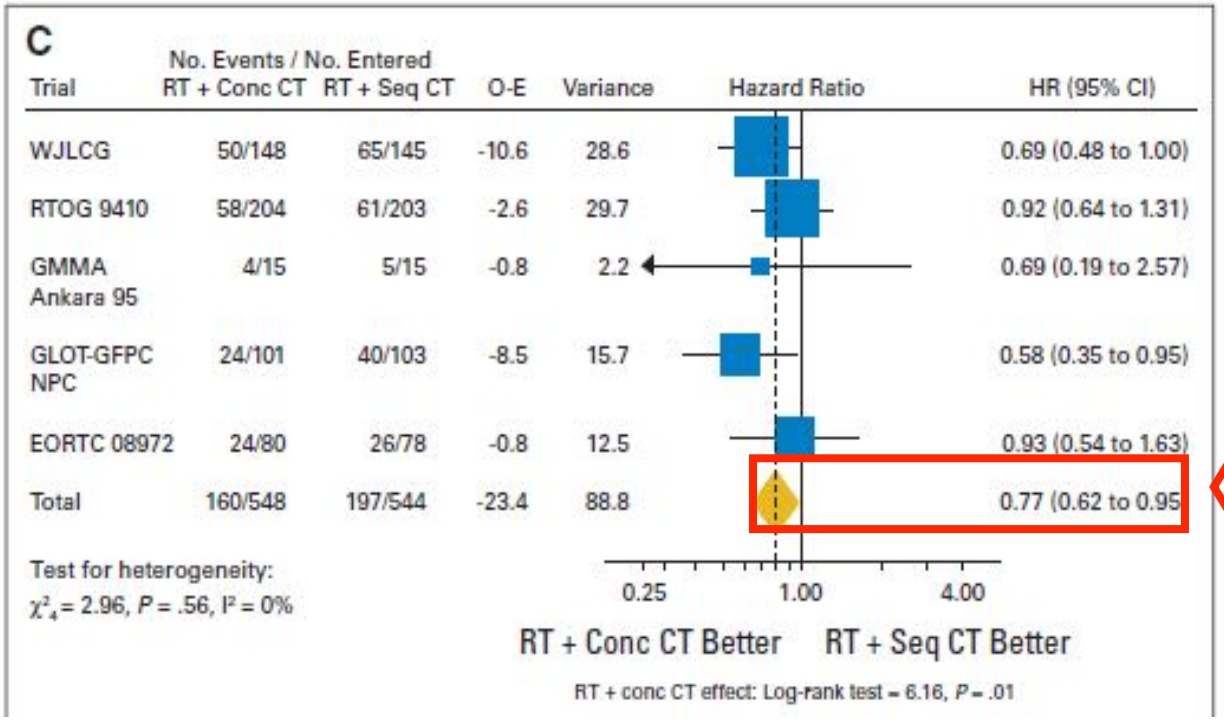


Benefit concomitant RTCT:

HR 0.77; p.001

Loco-regional Control

Auperin A., J Clin Oncol 28: 2181-2190, 2010

VOLUME 28 · NUMBER 13 · MAY 1 2010

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

ELDERLY PATIENTS

Category	No. Deaths/ No. Entered RT + Conc CT	RT + Seq CT	Hazard Ratio	*P* of Interaction trend* test
Age				.38
Less than 60	239/273	217/246		*.24
60-64	95/114	100/111		
65-69	123/140	122/130		
70 or over	64/76	106/113		

Auperin A., J Clin Oncol 28: 2181-2190, 2010

Sequential vs Concurrent Chemoradiation for Stage III NSCLC:

Randomized Phase III Trial RTOG 9410

601 patients

RANDOMIZE

Arm 1:
vinblastine 5 mg/m^2 IV bolus weekly first 5 weeks
cisplatin 100 mg/m^2 IV over 30-60 minutes, days 1 & 29
→ (starting day 50) 63 Gy/7 wks/34 daily fractions (1.8 Gy x 25 fx, then 2.0 Gy x 9 fx)

Sequential

Arm 2:
vinblastine 5 mg/m^2 IV bolus weekly first 5 weeks
cisplatin 100 mg/m^2 IV over 30-60 minutes, days 1 & 29
63 Gy/7 wks/34 daily fractions (1.8 Gy x 25 fx, then 2.0 Gy x 9 fx)

Concurrent

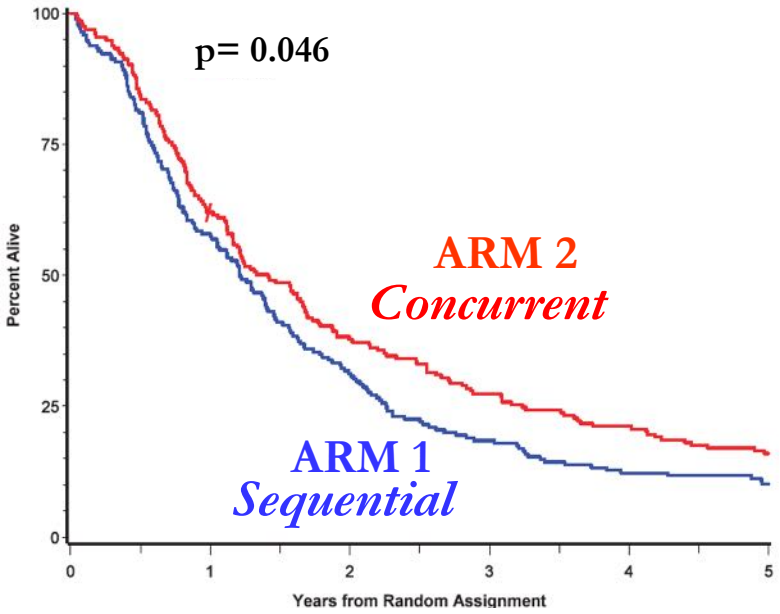
Arm 3:
oral etoposide 50 mg twice daily x 10 only on RT treatment days 1-5, 8-12, 29-33 and 36-40 (75 mg/day if body surface area < 1.7 m^2)
cisplatin 50 mg/m^2 IV over 30-60 minutes on days 1 and 8 and 29 and 36
69.6 Gy/6 wks/58 x 1.2 Gy twice-daily fractions (at least 6 hours apart)

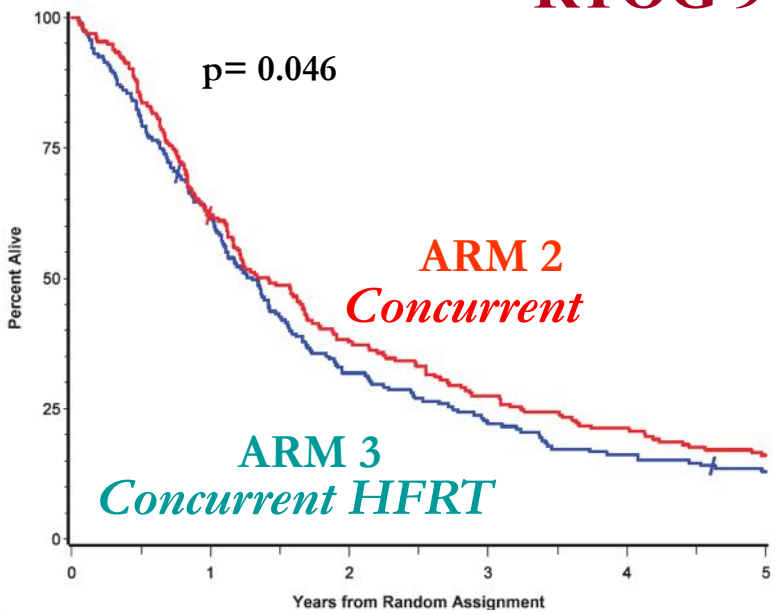
Concurrent HFRT

Curran et al, JNCI 2011

RTOG 9410

FUP 11 years





	Median SVV (months)	*SVV @ 5y (%)*
Arm 1	14.6	10
Arm 2	17	16
Arm 3	15.6	13

Similar late toxic effects

Curran et al, JNCI 2011

What is the Optimal Sequence of Chemoradiation?

These data suggest that chemotherapy, concurrently given with radiotherapy, improves the efficacy of the radiotherapy by its radiosensitizing effect.

Currently, concurrent chemoradiation is the standard treatment in patients with locally advanced NSCLC.

Chemoradiation in Neoadjuvant Setting

Radiotherapy plus chemotherapy with or without surgical resection for stage III non-small-cell lung cancer: a phase III randomised controlled trial

Lancet 2009; 374: 379–86

Kathy S Albain, R Suzanne Swann, Valerie W Rusch, Andrew T Turrisi III, Frances A Shepherd, Colum Smith, Yuhchyau Chen, Robert B Livingston, Richard H Feins, David R Gandara, Willard A Fry, Gail Darling, David H Johnson, Mark R Green, Robert C Miller, Joanne Ley, Willliam T Sause, James D Cox

RANDOM

201 pts

Radical RT-CT

RT: 61 Gy – Standard fx

CT: CDDP 50 mg/m^2 d1,8,29,36

VP16 50 mg/m^2 d1-5,29-33

191 pts

Neoadj RT-CT → Surgery

RT: 45 Gy – Standard fx

CT: CDDP 50 mg/m^2 d1,8,29,36

VP16 50 mg/m^2 d1-5,29-33

Chemoradiation in Neoadjuvant Setting

Radiotherapy plus chemotherapy with or without surgical resection for stage III non-small-cell lung cancer: a phase III randomised controlled trial

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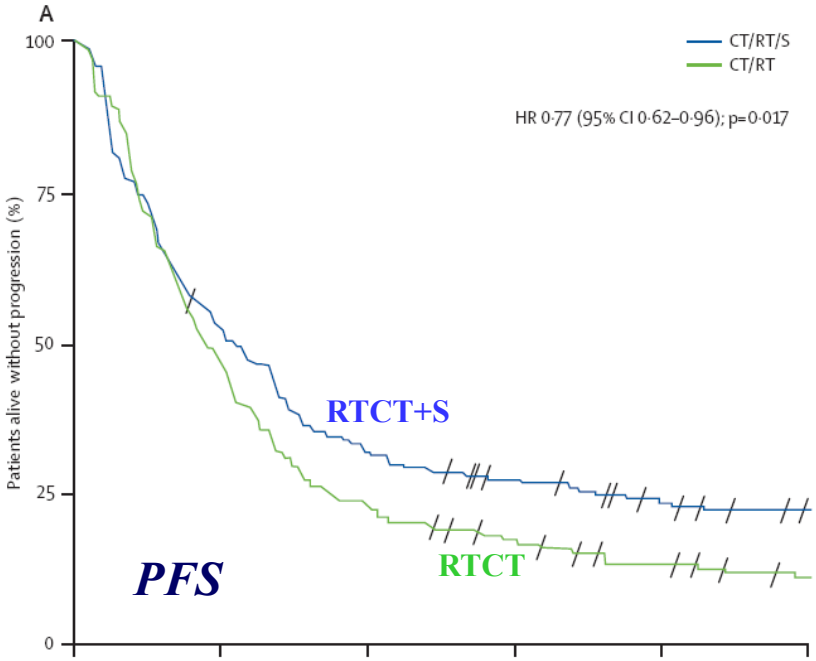

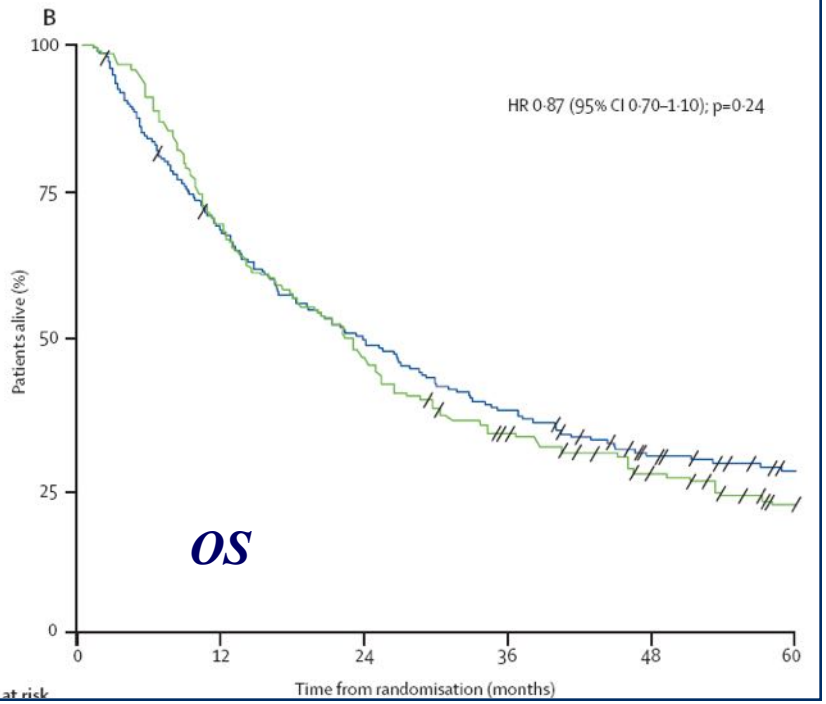

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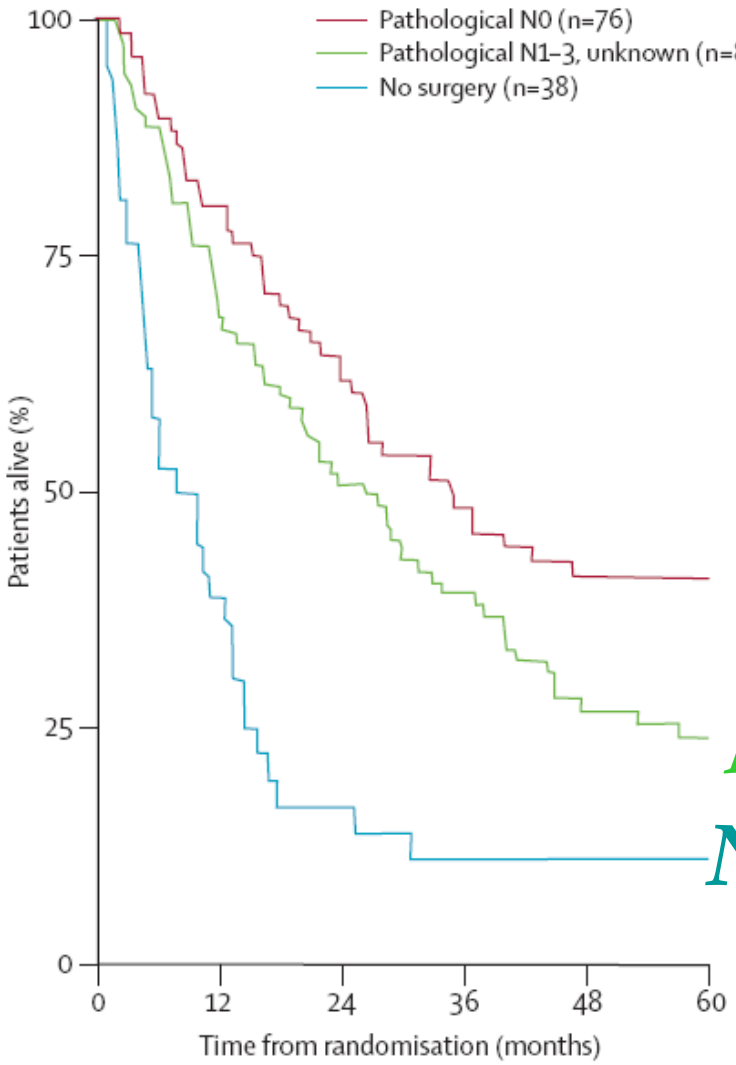


pN0

pN1-3

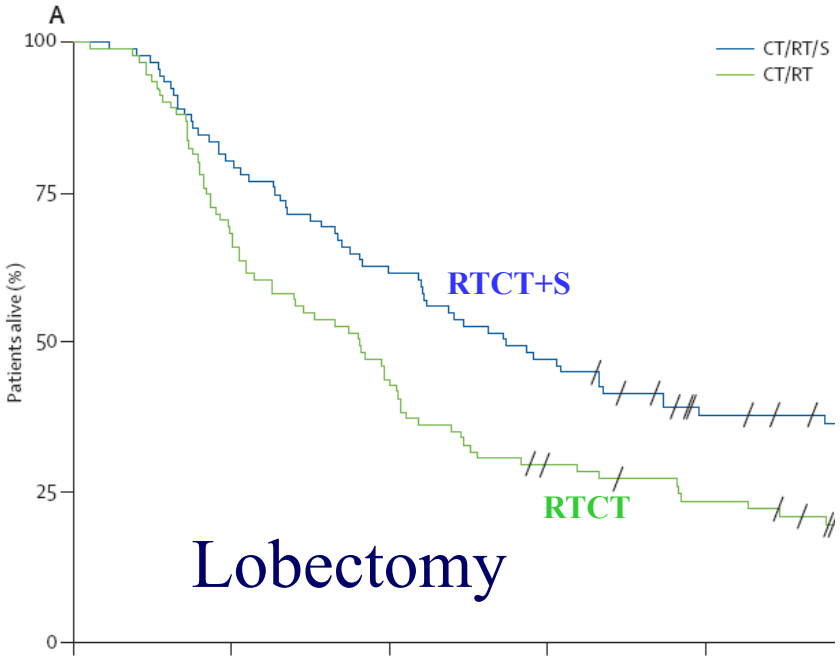
No Surgery

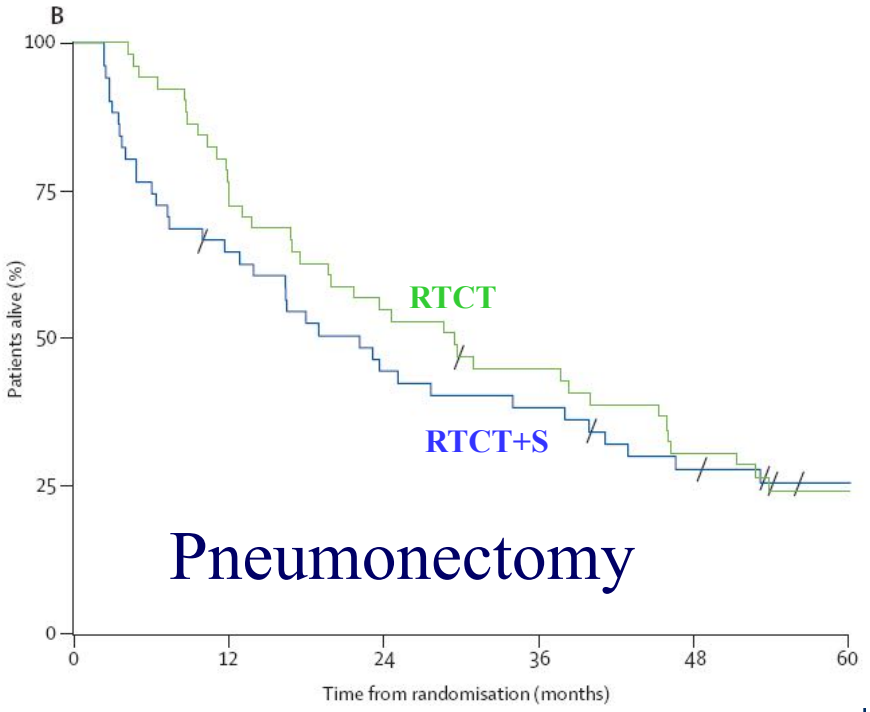
Lancet 2009; 374: 379–86

Figure 3: Overall survival in group 1 by pathological nodal substage determined after thoracotomy

INT 0139

Overall Survival

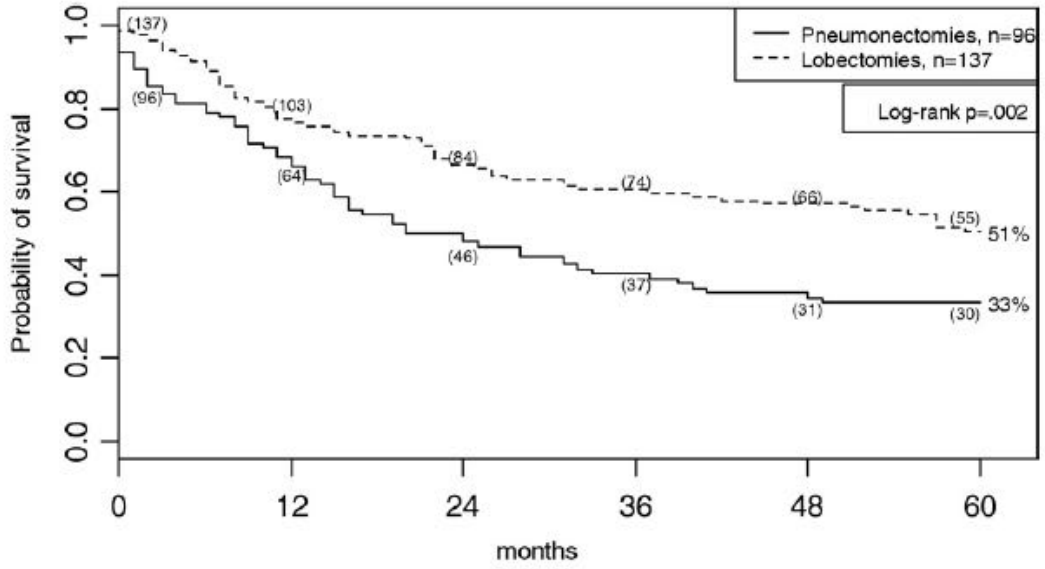




Lancet 2009; 374: 379–86

Neoadjuvant Chemoradiation for Clinically Advanced Non-Small Cell Lung Cancer: An Analysis of 233 Patients

Neoadiuvant chemoradiation
Survival: median 40 months, 5-y 43%
Mortality 30 days: 3%, 90 days 8%
T0 or N0 or T0N0 is associated with the best survival rate



Lobectomy is better than pneumonectomy

Kim et al., Ann Thorac Surg 2011;92: 233-43

Chemoradiation in Neoadjuvant Setting

Trimodality therapy offers a promising chance of long-term survival

Choise of concomitant drugs:

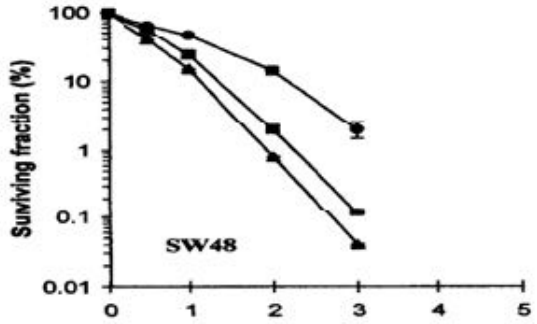
What is the Optimal Combination?

AMERICAN COLLEGE OF CHEST PHYSICIANS®

- The most efficacious chemotherapy drugs to be combined with thoracic radiotherapy is NOT established

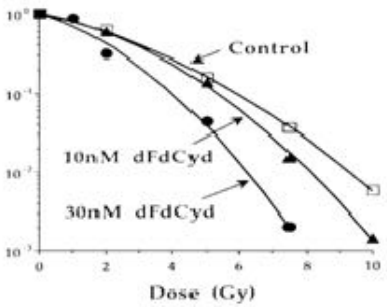
Docetaxel

Amanda L Dunne,
Oncology Research 2004



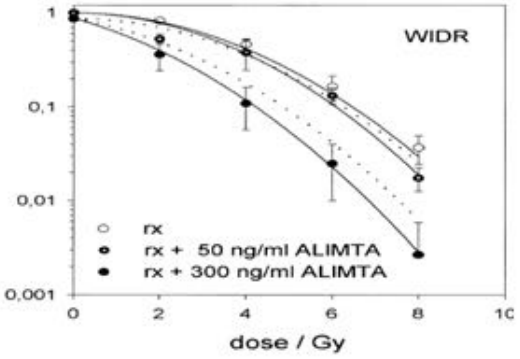
Gemcitabine

Shewach et al
Cancer Research 1994



Pemetrexed

Bischof, 2002
Int J Rad Onc Biol Phys



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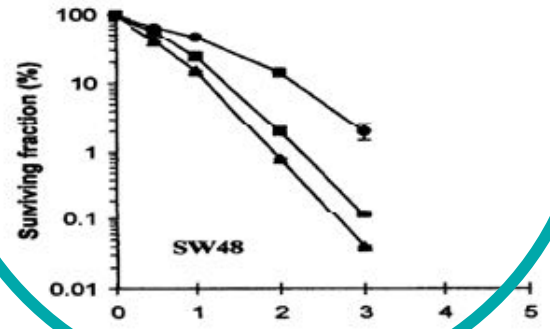

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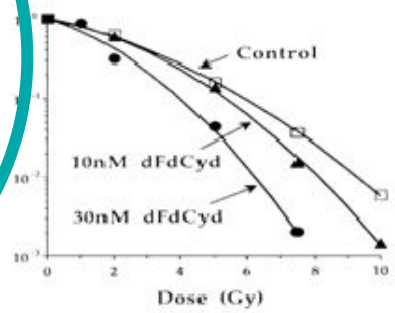

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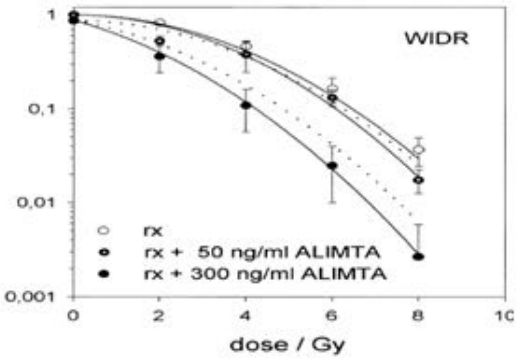
Int J Rad Onc Biol Phys



Phase III Study Comparing Second- and Third-Generation Regimens With Concurrent Thoracic Radiotherapy in Patients With Unresectable Stage III Non–Small-Cell Lung Cancer: **West Japan Thoracic Oncology Group WJTOG0105**

Random Assignment

Arm A

Cisplatin 80 mg/m² day 1
Vindesine 3 mg/m² day 1, day 8
Mitomycin C 8 mg/m² day 1
q4w × 2 cycles
RT 60 Gy (2 Gy/fr. split)

→

Cisplatin 80 mg/m² day 1
Vindesine 3 mg/m² day 1, day 8
Mitomycin C 8 mg/m² day 1
q4w × 2 cycles

Arm B

Carboplatin AUC 2
Irinotecan 20 mg/m² days 1, 8, 15, 22, 29, 36
RT 60 Gy (2 Gy/fr.)

→

Carboplatin AUC 5 day 1
Irinotecan 50 mg/m² day 1, day 8
q3w × 2 cycles

Arm C

Carboplatin AUC 2
Paclitaxel 40 mg/m² days 1, 8, 5, 22, 29, 36
RT 60 Gy (2 Gy/fr.)

→

Carboplatin AUC 5 day 1
Paclitaxel 200 mg/m² day 1
q3w × 2 cycles

456 pts

Yamamoto, J Clin Oncol 2010

Phase III Study Comparing Second- and Third-Generation Regimens With Concurrent Thoracic Radiotherapy in Patients With Unresectable Stage III Non–Small-Cell Lung Cancer:
West Japan Thoracic Oncology Group WJTOG0105

456 pts

	Median SVV (months)	*SVV @5y (%)*	*Neutropenia ≥G3 (%)*	*Treatment interruptions (%)*
Arm A	20.5	17.5	***95.9***	18.5
Arm B	19.8	17.8	60.5	***32.7***
Arm C	22	19.8	61.9	12.2

Arm C was equally efficacious and exhibited a more favorable toxicity profile

Yamamoto, J Clin Oncol 2010, 28:3739-45

Phase III Trial Comparing Docetaxel and Cisplatin Combination Chemotherapy With Mitomycin, Vindesine, and Cisplatin Combination Chemotherapy With Concurrent Thoracic Radiotherapy in Locally Advanced Non–Small-Cell Lung Cancer: OLCSG 0007

200 pts

Patient Population
- Unresectable locally advanced NSCLC (Stage IIIA/IIIB)
- No prior treatment

Stratification
- Stage (IIIA/IIIB)
- PS (0 *v* 1)
- Institution

Randomize

MVP arm (modified WJLCG regimen)

	1	8	15	22	29	36	42
Mitomycin 8 mg/m² d 1, 29	■				■		
Vindesine 3 mg/m² d 1, 8, 29, 36	■	■			■	■	
Cisplatin 80 mg/m² d 1, 29	■				■		
Concurrent radiation 60 Gy No split, continuous	▬	▬	▬	▬	▬	▬	▬

DP arm (experimental regimen)

	1	8	15	22	29	36	42
Docetaxel 40 mg/m² d 1, 8, 29, 36	■	■			■	■	
Cisplatin 40 mg/m² d 1, 8, 29, 36	■	■			■	■	
Concurrent radiation 60 Gy No split, continuous	▬	▬	▬	▬	▬	▬	▬

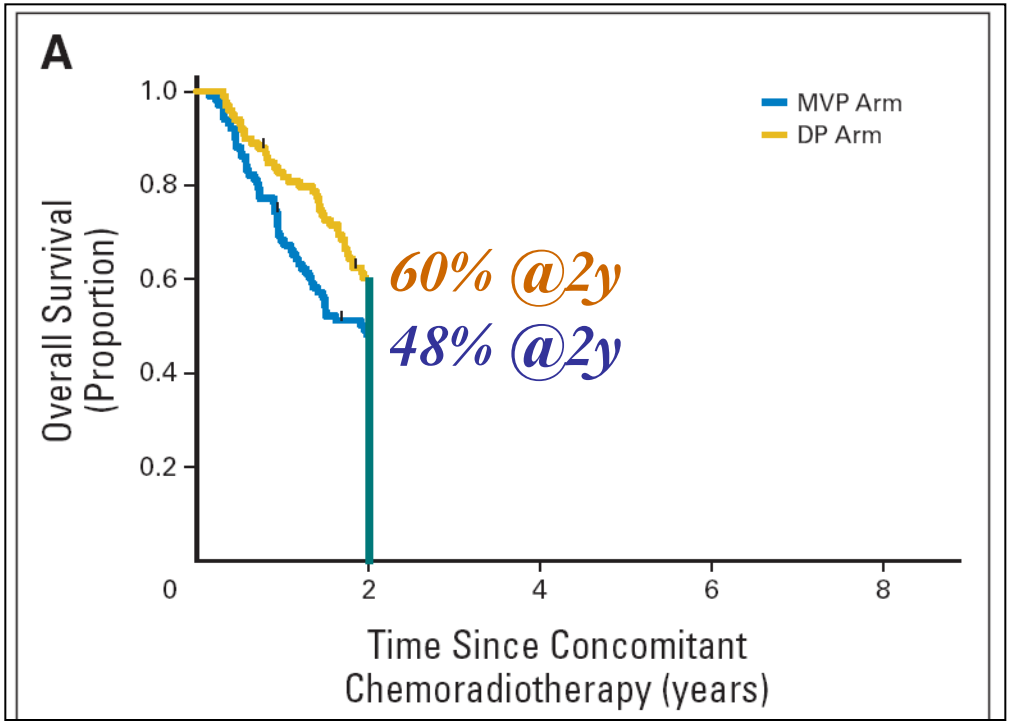
Segawa J Clin Oncol 2010, 28: 3299-3306

The median survival time (**MST**):

DP Arm ⟶ 26.8 months (95% CI, 23.6 to 33.4 months)

MVP Arm ⟶ 23.7 months (95% CI, 15.9 to 33.2 months)

The survival time at 2 years, a primary end point, was favorable to the DP arm (p=0.05)



Segawa J Clin Oncol 2010, 28: 3299-3306

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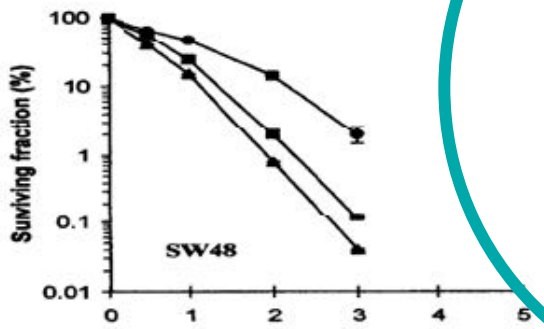
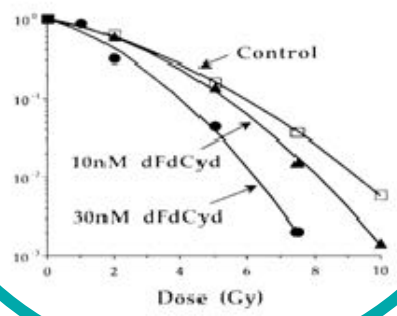
Docetaxel

Amanda L.Dunne,
Oncology Research 2004



Gemcitabine

Shewach et al
Cancer Research 1994



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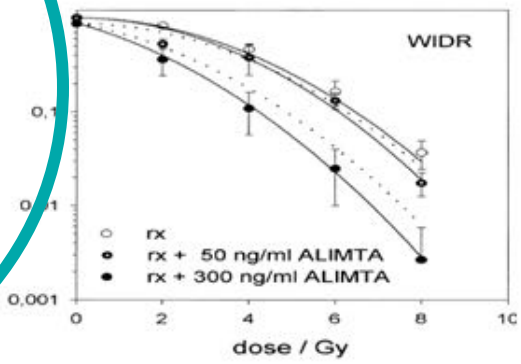
Bischof, 2002
Int J Rad Onc Biol Phys



Gemcitabine

Study	CT	N of pts	ORR	
Van Putten	Gemcitabine	24	63%	68%
Trodella	Gemcitabine	62	74%	
CALGB 9431	CDDP+Gemcitabine	62	74%	80%
Trodella	CDDP+Gemcitabine	50	93%	

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Docetaxel

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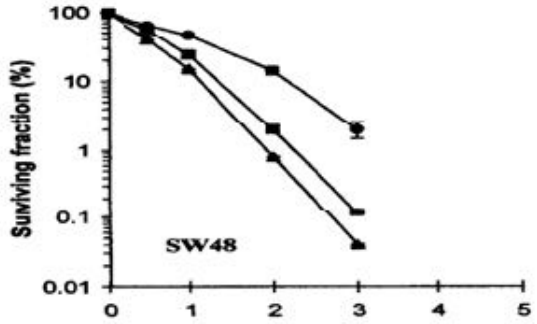
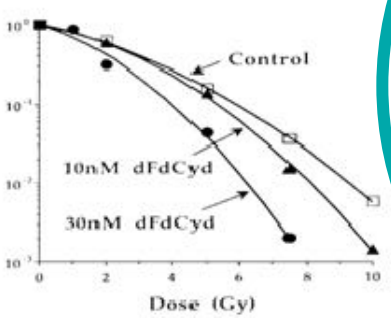


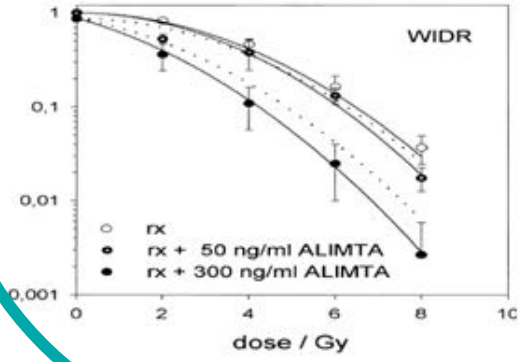
Gemcitabine

Shewach et al
Cancer Research 1994



Pemetrexed

Bischof, 2002
Int J Rad Onc Biol Phys



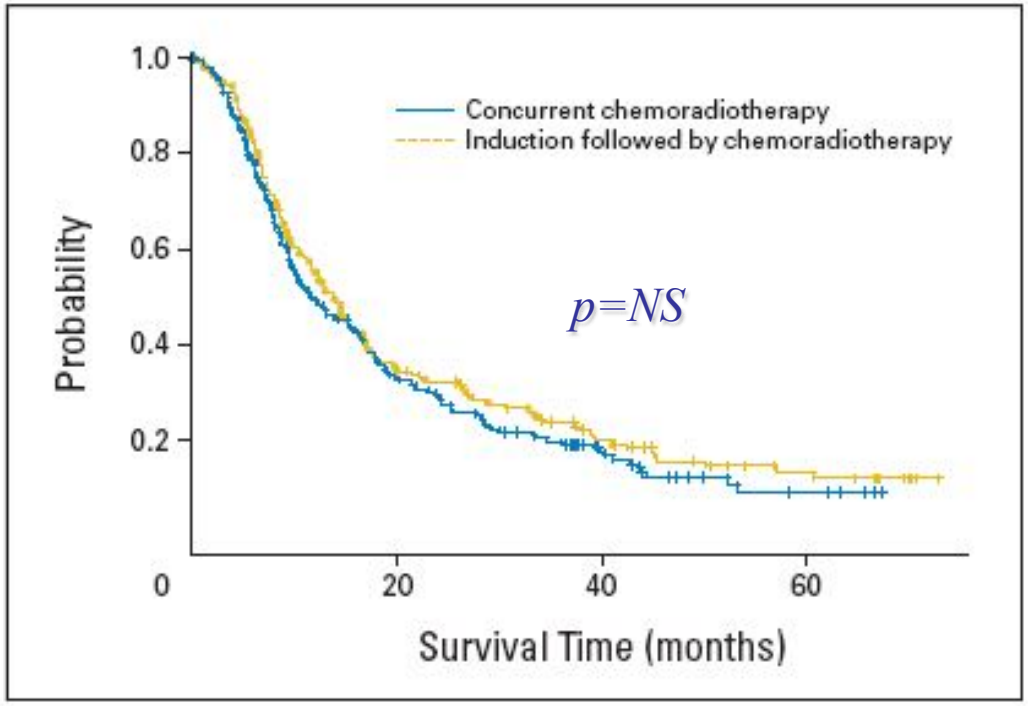
Pemetrexed	Trial	CHT	RT Gy	Limiting Toxicity	Efficacy
Gadgel *J Clin Oncol 2008*	Phase I	CBCDA AUC 6 and biweekly Pemetrexed 300 mg/mq	63 Gy	esophagitis infection	78%
Brade *Int J Radiat Oncol Biol Phys 2010*	Phase I	Pemetrexed 500 mg/mq CDDP 75-80 mq/ mq	64 Gy	pulmonary	88%
Surmont *Lung Cancer 2010*	Phase I	Pemetrexed 500 mg/mq and CDDP (60-80 mg/mq)	66 Gy	none	NA
Brade *J Clin Oncol 2010*	Phase II	Pemetrexed 500 mg/mq+CDDP 20mg/mq 1-5 q 21	61-65 Gy	none	OS 19.7 months PFS 11.8months
Vokes *J Clin Oncol 2011*	Phase II	Pemetrexed 500+ CBCDA AUC 5	70 Gy	none	RR=77% OS 23 months

PROCLAIM: A Phase III Study of Pemetrexed, Cisplatin, and Radiation Therapy Followed by Consolidation Pemetrexed Versus Etoposide, Cisplatin, and Radiation Therapy Followed by Consolidation Cytotoxic Chemotherapy of Choice in Locally Advanced Stage III Non–Small-Cell Lung Cancer of Other than Predominantly Squamous Cell Histology

Vokes et al Clin Lung Cancer 2009 May;10(3): 193-8

Induction Chemotherapy

CALGB 39801

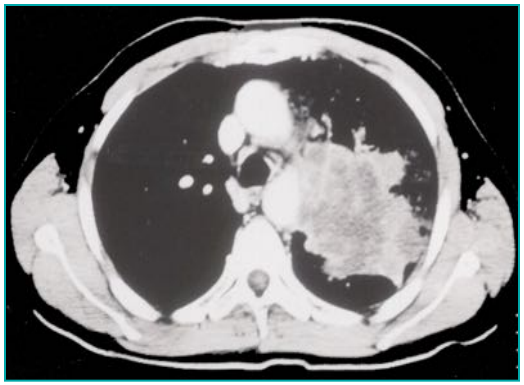


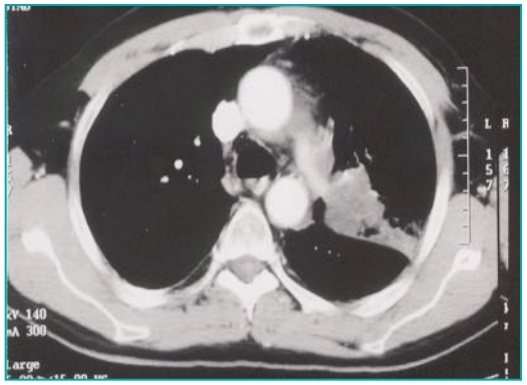
RESULTS	RTCT	CT → RTCT
Median survival	12 mo	14 mo
Failure free survival	7 mo	8 mo
Distant failure	86 pts	84 pts

"The addition of induction chemotherapy does not provide a survival benefit over concurrent therapy alone…"

Vokes, JCO 2007

Induction chemotherapy does not improve OS and PFS…but could



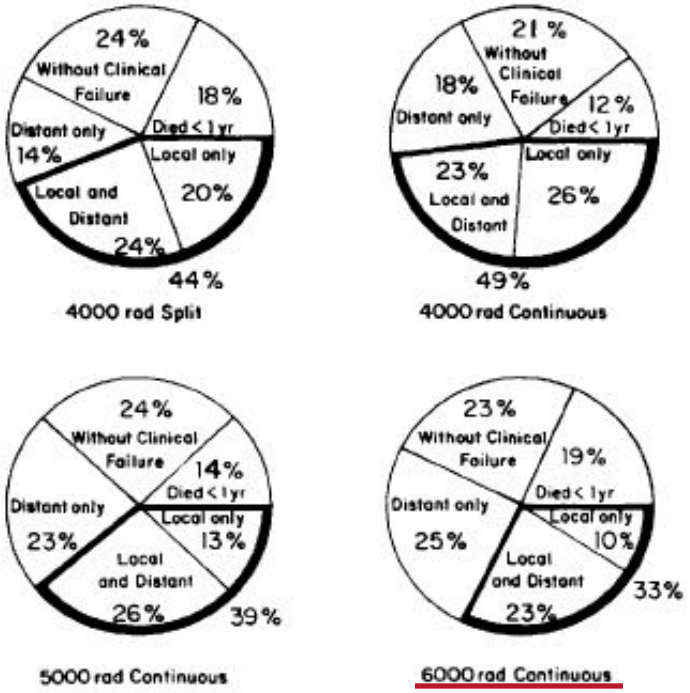


- ✓ Decrease tumor volume
- ✓ Decrease irradiated volume
- ✓ Decrease tumor spread (metastasis)
- ✓ Select a good prognostic group of patients before RT-CT

A Prospective Randomized Study of Various Irradiation Doses and Fractionation Schedules in the Treatment of Inoperable Non-Oat-Cell Carcinoma of the Lung

Preliminary Report by the Radiation Therapy Oncology Group

C. A. PEREZ, MD,* K. STANLEY, PHD,† P. RUBIN, MD,‡ S. KRAMER, MD§, L. BRADY, MD,‖ R. PEREZ-TAMAYO, MD,#
G. S. BROWN, MD,¶ J. CONCANNON, MD,** M. ROTMAN, MD,†† AND H. G. SEYDEL, MD‡‡



RTOG 73-01

"The current study strongly suggests that dosages in the range of 5000-6000 cGy yield higher tumor response, better survival and less intrathoracic recurrences"

Perez CA, Cancer 1980; 45(2): 2744-2754

RTOG 93-11

TOXICITY AND OUTCOME RESULTS OF RTOG 9311: A PHASE I–II DOSE-ESCALATION STUDY USING THREE-DIMENSIONAL CONFORMAL RADIOTHERAPY IN PATIENTS WITH INOPERABLE NON–SMALL-CELL LUNG CARCINOMA

JEFFREY BRADLEY, M.D.,* MARY V. GRAHAM, M.D.,† KATHRYN WINTER, M.S.,‡ JAMES A. PURDY, PH.D.,§ RITSUKO KOMAKI, M.D.,‖ WILSON H. ROA, M.D.,¶ JANICE K. RYU, M.D.,# WALTER BOSCH, D.SC.,§ AND BAHMAN EMAMI, M.D.**

Group 1 (V20<25%)			
70.9 Gy	**77.4 Gy**	**83.8 Gy**	**90.3 Gy**
n 28	*n 26*	*n 33*	*n 40*

Group 2 (V20 25-36%)	
70.9 Gy	**77.4 Gy**
n 21	*n 27*

Bradley J, IJROBP 2005; 61(2):318-328

RTOG 93-11

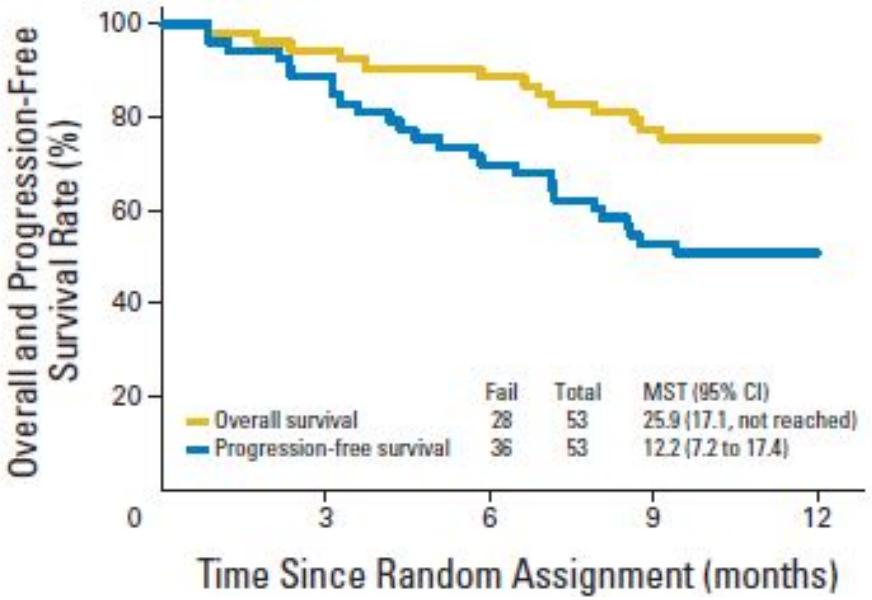
Treatment (Gy)	Estimate Rate Grade 3 Lung Toxicity at 18 mo (%)
Group 1 (<25%)	
70.9	7
77.4	16
83.8	0
90.3	13
Group 2 (25-36%)	
70.9	15
77.4	15

Treatment (Gy)	Estimate Rate Grade 3 Esophageal Toxicity at 18 mo (%)
Group 1 (<25%)	
70.9	8
77.4	0
83.8	4
90.3	6
Group 2 (25-36%)	
70.9	0
77.4	5

The radiation dose was safely escalated using 3D-CRT techniques to 83.8 Gy for patients with V20 values of <25% (Group 1) and to 77.4 Gy for patients with V20 values between 25% and 36% (Group 2), using fraction sizes of 2.15 Gy.

Bradley J, IJROBP 2005; 61(2):318-328

A Phase I/II Radiation Dose Escalation Study with Concurrent Chemotherapy for Patients with Inoperable Stages I-III Non-Small Cell Lung Cancer: The Phase I Results of RTOG 0117



The MTD was determined to be 74 Gy/37 fractions (2.0 Gy per fraction) using 3DCRT with concurrent paclitaxel and carboplatin

OS and PFS rates at 12 months were 72.7% and 50.0%, respectively.

Bradley J, IJROBP 2010; 77(2):367-372

RESULTS OF A PHASE I TRIAL OF CONCURRENT CHEMOTHERAPY AND ESCALATING DOSES OF RADIATION FOR UNRESECTABLE NON–SMALL-CELL LUNG CANCER

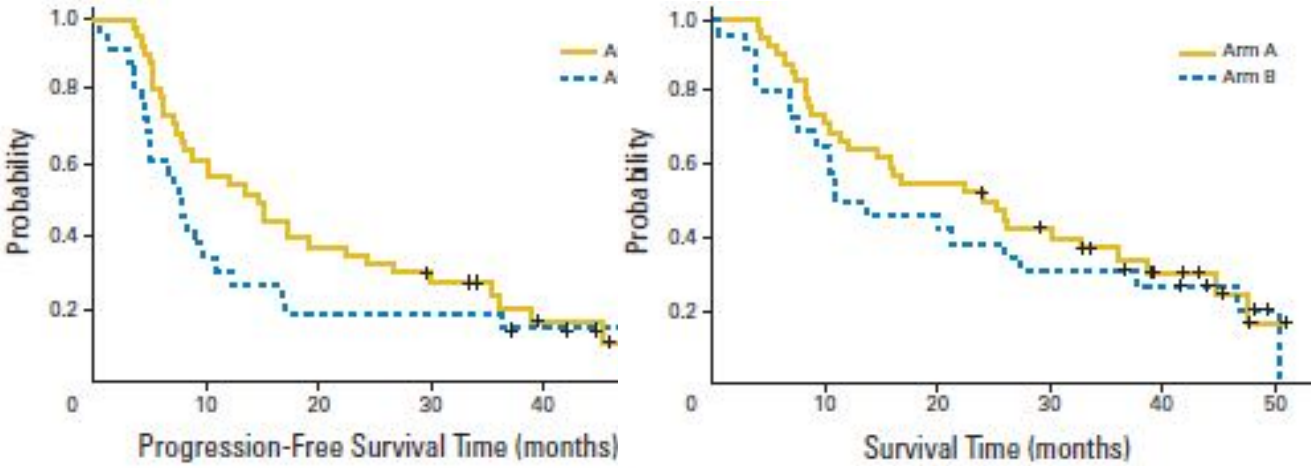
Steven E. Schild, M.D.,* William L. McGinnis, M.D.,† David Graham, M.D.,‡ Shauna Hillman, M.S.,* Tom R. Fitch, M.D.,§ Donald Northfelt, M.D.,§ Yolanda I. Garces, M.D.,* Homayoon Shahidi, M.D.,¶ Loren K. Tschetter, M.D.,‖ Paul L. Schaefer, M.D.,# Alex Adjei, M.D.,* and James Jett, M.D.*

Dose level	*Dose RT (Gy)/fxs*	*N pts*	*N DLT*
1	**70/35**	**3**	**0**
2	**74/37**	**6**	**1**
3	**78/39**	**4**	**2**

The MTD of the RT was 74 Gy with weekly carboplatin and paclitaxel

Shild SE, IJROBP 2006; 65: 1106-1111

Randomized Phase II Trial of Induction Chemotherapy Followed by Concurrent Chemotherapy and Dose Escalated Thoracic Conformal Radiotherapy (74 Gy) in Stage III Non-Small Cell Lung Cancer: CALGB 30105



MST was 24 months and 26% of patients survived 5 years.

The grade of 3 to 4 esophagitis was less than 10% and no grade 3 to 4 pulmonary toxicity was observed.

Socinski MA, J Clin Oncol 2008; 26(2): 2457-63

DOSE ESCALATION
and
CONCURRENT CHEMOTHERAPY

- **NCCTG 0028**

Schild S. *IJROBP 2006*

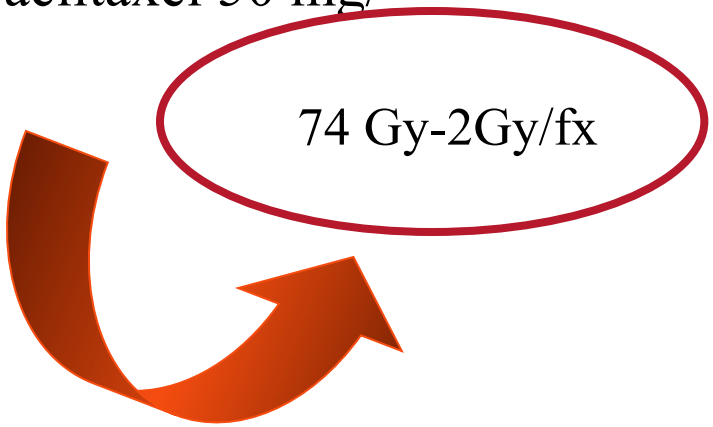
- **CALGB 30105**

Socinski MA. *JCO 2008*

- ***RTOG 0117***

Bradley J, *IJROBP 2010*

Feasibility of escalated total dose with concurrent chemotherapy (Carboplatin AUC2 and Paclitaxel 50 mg/mq/weekly)



RTOG 0617

A Randomized Phase III Comparison of Standard-Dose (60 Gy) versus High-Dose (74 Gy) Conformal Radiotherapy with Concurrent and Consolidation Carboplatin/Paclitaxel +/- Cetuximab in Patients with Stage IIIA/IIIB Non-Small Cell Lung Cancer

Intergroup Partecipation:

RTOG, NCCTG, CALGB

RTOG 0617

Concurrent Treatment	*Consolidation Treatment*
Arm A Concurrent chemotherapy RT to 60 Gy, 5 fx per wk for 6 wks	***Arm A*** Consolidation chemotherapy
Arm B Concurrent chemotherapy RT to 74 Gy, 5 fx per wk for 7.5 wks	***Arm B*** Consolidation chemotherapy
Arm C Concurrent chemotherapy and Cetuximab RT to 60 Gy, 5 fx per wk for 6 wks	***Arm C*** Consolidation chemotherapy and Cetuximab
Arm D Concurrent chemotherapy and Cetuximab RT to 74 Gy, 5 fx per wk for 7.5 wks	***Arm D*** Consolidation chemotherapy and Cetuximab

ASTRO
TARGETING CANCER CARE

ASTRO's Annual Meeting

Miami Beach October 2-6, 2011

RTOG 0617

Between November 2007 and April 2011, 423 study participants were enrolled in the RTOG trial

423 patients	**Median OS**
High dose RT (74 Gy)	20.7 months
Standard dose (60 Gy)	21.7 months
	P=0.02

There was no significant difference in treatment-related toxicity between treatment arms

"High dose conformal radiotherapy (74 Gy) did not improve survival, compared standard dose (60 Gy) in patients with unresectable NSCLC"

Int. J. Radiation Oncology Biol. Phys., Vol. 82, No. 3, pp. 1042–1044, 2012

0360-3016/$ - see front matter

ELSEVIER

doi:10.1016/j.ijrobp.2011.12.032

EDITORIAL

ARE THE RESULTS OF RTOG 0617 MYSTERIOUS?

JAMES D. COX, M.D.

"It is incumbent on the entire radiation oncology community to improve the planning and delivery of RT to avoid irradiating the normal lung and heart better than the standard techniques do today, so that dose-intensified schedules of RT can be safely administered"

Cox J, IJROBP 2012; 82(3): 1042-1044

Integrated approaches in Locally Advanced Non-Small Cell Lung Cancer

In patients with locally advanced NSCLC ***concomitant chemo-radiotherapy*** is the standard of care.

In patients with good performance status with bulky disease, ***induction chemotherpy*** should be considered primarily for cytoreductive intent.

Higher biological tumor doses could result in better survival.

Improvement in local control represents a principal goal in designing new strategies to treat NSCLC

Radiotherapy and Oncology 101 (2011) 237–239

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Editorial

Radiotherapy with curative intent for lung cancer: A continuing success story

Dirk De Ruysscher *, Wouter van Elmpt, Philippe Lambin

Department of Radiation Oncology, Maastricht University Medical Centre, The Netherlands

*"The **dynamism of lung cancer research** deals with important aspects where significant gains can be expected in the coming years"*