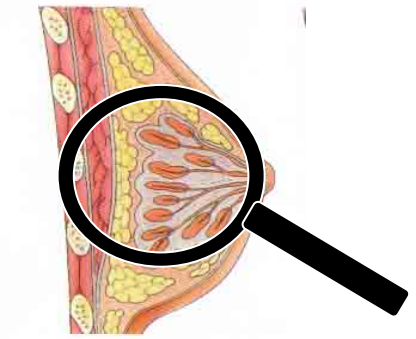
XXI CONGRESSO NAZIONALE AIRO

Genova, 19-22 novembre 2011
Porto Antico di Genova
Centro Congressi

Associazione Italiana Radioterapia Oncologica

GRANDANGOLO IN RADIOTERAPIA

ca prostata
ca mammella



Giovanna Mantello

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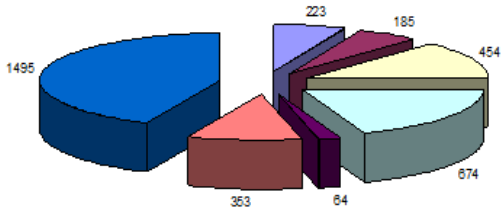
PubMed.gov

Gen 2011 – Nov 2011

Prostate cancer	6554
Prostate cancer + treatment	3738
Prostate cancer + treatment + radiotherapy	740
Prostate cancer + treatment + surgery	1401
Prostate cancer + treatment + Hormonal therapy	441

Meta analisys	0
Systematic reviews	2
Clinical trials	52
Randomized controlled trials	18
Guidelines	3
Editorials	35
Reviews	101



HOT TOPIC

- Predictive models /nomograms/ Risk assessment / Genetic risk assessment
- Watchful waiting/ active surveillance
- Dose / Dose escalation / Altered fractionation
- Adjuvant RT/salvage RT
- Radiotherapy Volumes (Whole pelvis)
- HT, Neoadjuvant HT, adjuvant HT, Androgen deprivation
- altro

MODULARE IL TRATTAMENTO SUL SINGOLO PAZIENTE

EVITARE OVERTREATMENT

BIG QUESTIONS

RT linfonodi?

RT post op?

OT?

IDENTIFICAZIONE DEI GRUPPI A RISCHIO

SVILUPPO MODELLI PREDITTIVI SUL SINGOLO PAZIENTE/ NOMOGRAMMI (67 nel 2011)
(scelta trattamento, outcome, tossicita')

SORVEGLIANZA ATTIVA (ca insignificante)

RT COMPETITIVA A CHIRURGIA

BIG QUESTIONS

Irradiare
o non irradiare
i linfonodi pelvici?

IRRADIARE o NON IRRADIARE I LINFONODI?

National Comprehensive Cancer Network®

NCCN Guidelines™ Version 4.2011
Prostate Cancer

NCCN Guidelines Index
Prostate Table of Contents
Discussion

PRINCIPLES OF RADIATION THERAPY

External Beam Radiotherapy:

- 3D conformal and IMRT (intensity modulated radiation therapy) techniques should be employed. Image guided radiation therapy (IGRT) is required if dose ≥ 78 Gy.
- Doses of 75.6-79 Gy in conventional 36-41 fractions to the prostate (± seminal vesicles for part of the therapy) are appropriate for patients with low-risk cancers. For patients with intermediate- or high-risk disease, doses between 78-80+ Gy provide improved PSA-assessed disease control.
- Patients with high-risk cancers are candidates for pelvic lymph node irradiation and the addition of neoadjuvant/concomitant/adjuvant ADT for a total of 2-3 y (category 1).
- Patients with intermediate risk cancer may be considered for pelvic lymph node irradiation and 4-6 mo-neoadjuvant/concomitant/adjuvant ADT.
- Patients with low risk cancer should not receive pelvic lymph node irradiation or ADT.
- The accuracy of treatment should be improved by attention to daily prostate localization, with techniques such as IGRT using CT, ultrasound implanted fiducials, electromagnetic targeting/tracking, or an endorectal balloon to improve oncologic cure rates and reduce side effects.
- Evidence supports offering adjuvant/salvage RT in all men with adverse pathologic features or detectable PSA and no evidence of disseminated disease.

eau
European Association of Urology **2011**

Guidelines

there is no general indication for irradiation to the pelvic lymph nodes.

RTOG 0924

For Patients with Prostate Cancer at Moderate to High Risk for Recurrence

RTOG 0924 is Now Available Through the CTSU

Androgen Deprivation Therapy and High Dose Radiotherapy with or without Whole-Pelvic Radiotherapy in Unfavorable Intermediate or Favorable High Risk Prostate Cancer: A Phase III Randomized Trial

Solo PV vs WP+PV

100 Gy LDR PPI with Pd-103
110 Gy LDR PPI with I–125
15 Gy HDR in one fraction

Treatment Schema

STRATIFY

1. Risk Group:

"Favorable" High or "Unfavorable" Intermediate Risk:

1.GS=7-10 and T1c-T2b and PSA < 50 ng/ml or

2.GS=6, T2c-T4 or > 50% biopsies + & PSA <50 or

3.GS=6, PSA > 20 ng/ml and T1c-T2b

2. Type of RT Boost:

IMRT vs Brachytherapy (HDR + PPI)

3. Duration of Androgen Deprivation Therapy

Short Term vs Long Term ADT

Arm 1

Radiation Therapy
Phase 1 (Prostate and Seminal Vesicles)
3D-CRT or IMRT - 25 treatments x 1.8 Gy = 45 Gy

Plus

Phase 2 (Prostate and Proximal Seminal Vesicles)
IMRT - 19 treatments x 1.8 Gy = 34.2 Gy
or
brachytherapy implant
see sections 6.8 and 6.9 for prescription details

and

Hormone Therapy
6 months or 32 months

Arm 2

Radiation Therapy
Phase 1 (Whole Pelvis and Seminal Vesicles)
3D-CRT or IMRT - 25 treatments x 1.8 Gy = 45 Gy

Plus

Phase 2 (Prostate and Proximal Seminal Vesicles)
IMRT- 19 treatments x 1.8 Gy = 34.2 Gy
or
brachytherapy implant
see sections 6.8 and 6.9 for prescription details

and

Hormone Therapy
6 months or 32 months

RTOG 0534

For Patients with a Rising PSA after Radical Prostatectomy

RTOG 0534 is Now Available Through the CTSU

A Phase III Trials of Short Term Androgen Deprivation with Pelvic Lymph Node or Prostate Bed Only Radiotherapy (SPORT) in Prostate Cancer Patients with a Rising PSA After Radical Prostatectomy

RT salvataggio Letto Prostata vs WP+ Letto Prostata

	SV Involvement		
	1. No		
S	2. Yes	**R**	**Arm 1: PBRT Alone**
T		**A**	PBRT 64.8-70.2 Gy
R	**Prostatectomy Gleason Score**	**N**	
A	1. Gleason ≤ 7	**D**	
T	2. Gleason 8-9	**O**	**Arm 2: PBRT + NC-STAD**
I		**M**	PBRT 64.8-70.2 Gy + NC-STAD for 4-6 months,
F	**Pre-Radiotherapy PSA**	**I**	beginning 2 months before RT
Y	1. PSA ≥ 0.1 and ≤ 1.0 ng/mL	**Z**	
	2. PSA > 1.0 and < 2.0ng/mL	**E**	
			Arm 3: PLNRT + PBRT + NC-STAD
	Pathology Stage		PLNRT to 45 Gy and PBRT to 64.8-70.2 Gy,
	1. pT2 and margin negative		NC-STAD for 4-6 months,
	2. All others		beginning 2 months before RT

SV = seminal vesicle; RT = radiotherapy; PBRT = prostate bed RT; PLNRT = pelvic lymph node RT; NC-STAD = neoadjuvant and concurrent short term androgen deprivation

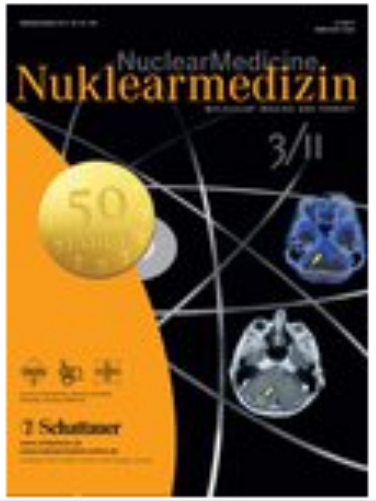
2011 (Vol. 50): Issue 3 2011 (93-140)

Sentinel node mapping in the prostate cancer

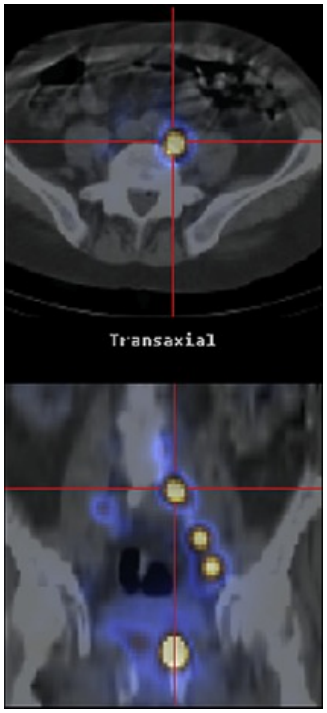
Meta-analysis

R. Sadeghi (1), K. T. Tabasi (2), S. M. M. Bazaz (3), V. R. D. Kakhki (1), A. F. Massoom (4), H. Gholami (5), S. R. Zakavi (1)

(1) Nuclear Medicine Research Center, Faculty of Medicine, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; (2) Urology Department, Faculty of Medicine, Imam Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran; (3) Evidence Based Medicine Group, Mashhad University of Medical Sciences, Mashhad, Iran; (4) General Surgery Department, Mashhad University of Medical Sciences, Mashhad, Iran; (5) Education Management, Mashhad University of Medical Sciences, Mashhad, Iran



Sentinel Node biopsy can prevent unnecessary pelvic lymph node dissection in prostate cancer patients.
This procedure is feasible
with low false negative rate
and
high detection rate.



Int. J. Radiation Oncology Biol. Phys., Vol. 79, No. 5, pp. 1364–1372, 2011

0360-3016/$–see front matter

ELSEVIER

doi:10.1016/j.ijrobp.2010.01.012

CLINICAL INVESTIGATION **Prostate**

DISTRIBUTION OF PROSTATE SENTINEL NODES: A SPECT-DERIVED ANATOMIC ATLAS

UTE GANSWINDT, M.D.,* DAVID SCHILLING, M.D.,† ARNDT-CHRISTIAN MÜLLER, M.D.,‡ ROLAND BARES, M.D.,§ PETER BARTENSTEIN, M.D.,¶ AND CLAUS BELKA, M.D.*

Departments of *Radiation Oncology and ¶Nuclear Medicine, Ludwig-Maximilians-University, Munich, and Departments of †Urology, ‡Radiation Oncology, and §Nuclear Medicine, University of Tuebingen, Tuebingen, Germany

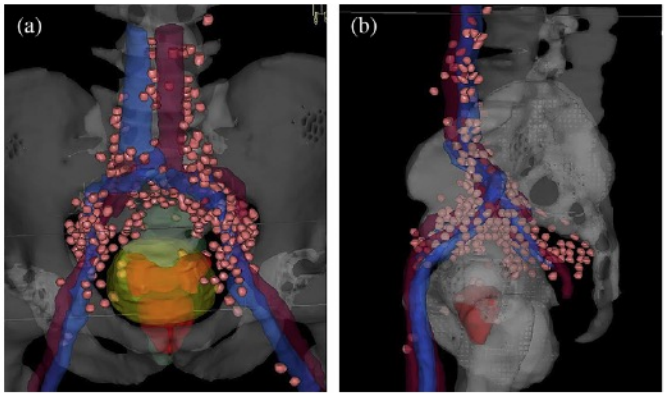


Fig. 2. Cumulative sentinel lymph node distribution (virtual dataset) in 61 patients. A, View from ventral above. B, View from the left side. C, View bottom-up, supine position. Sentinel nodes = pink, prostate = red, bladder = yellow, rectum = green, vessels = blue/red).

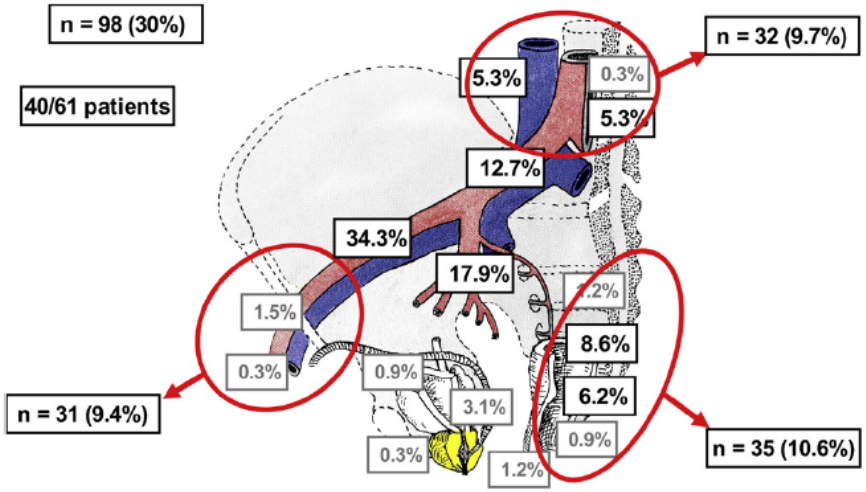


Fig. 3. Areas and anatomic distributions of sentinel lymph nodes with a potential "geographic miss." A geographic miss was observed in 98/324 (30%) sentinel lymph nodes in 40/61 patients (65.6%); for details see Table 3.

Int. J. Radiation Oncology Biol. Phys., Vol. 80, No. 1, pp. 69–75, 2011

0360-3016/$–see front matter

doi:10.1016/j.ijrobp.2010.01.068

CLINICAL INVESTIGATION **Prostate**

A NEW FORMULA FOR PROSTATE CANCER LYMPH NODE RISK

JAMES B. YU, M.D.,*¶ DANIL V. MAKAROV, M.D.,†‡‖ AND CARY GROSS, M.D.†§

*Department of Therapeutic Radiology, †Robert Wood Johnson Clinical S
Internal Medicine, Yale School of Medicine; ¶Yale Cancer Center, New
Healthcare System, West

$$\%LN\ risk = [GS - 5] \times [PSA/3 + 1.5\ T]$$

T = 0 (cT1c), 1 (cT2a), and 2 (cT2b/cT2c)

Extent of Pelvic Lymph Node Dissection and the Impact of Standard Template Dissection on Nomogram Prediction of Lymph Node Involvement

Guilherme Godoy[a], *Kian Tai Chong*[a], *Angel Cronin*[b], *Andrew*
Karim Touijer[a], *Bertrand Guillonneau*[a], *James A. Eastham*[a],
Jonathan A. Coleman[a,*]

[a] *Urology Service, Department of Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY*
[b] *Department of Epidemiology and Biostatistics, Memorial Sloan-Kettering Cancer Center, New Yo*

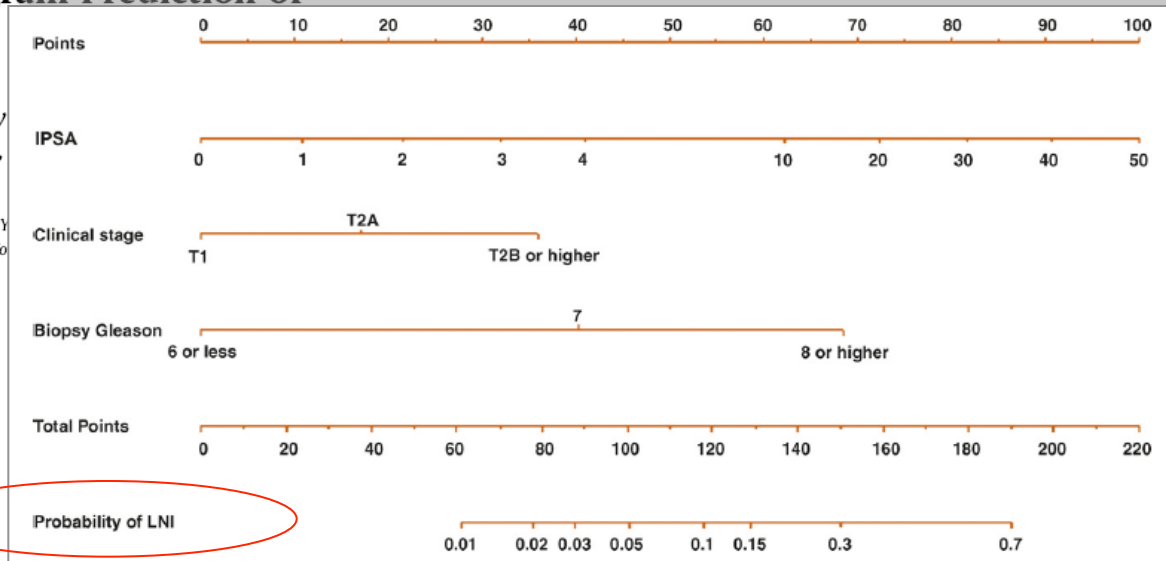


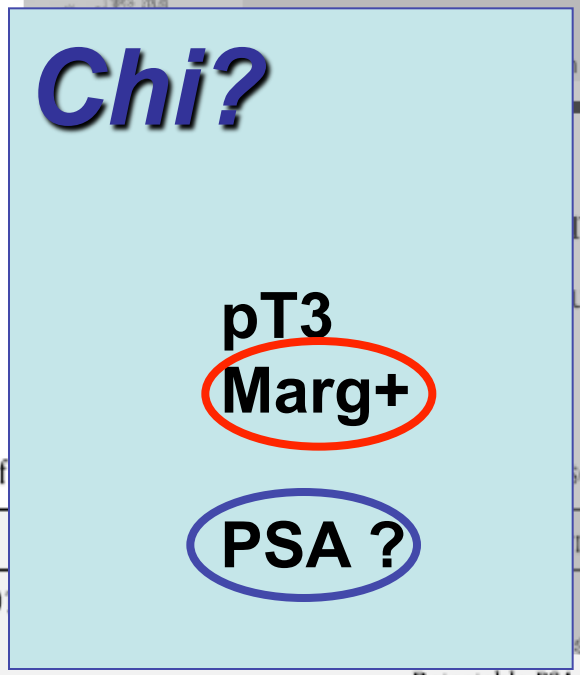
Fig. 1 – Nomogram for prediction of positive lymph nodes among patients who underwent a standard pelvic lymph node dissection. Instructions: Locate the patient's pretreatment prostate-specific antigen (PSA) on the initial PSA (IPSA) axis. Draw a line straight upward to the point's axis to determine how many points toward the probability for each of the predictors. Locate lymph nodes.
LNI = lymph node involvement.

EUROPEAN UROLOGY 60 (2011) 195–201

BIG QUESTIONS

RT ADIUVANTE
O
DI SALVATAGGIO

RT ADIUVANTE O DI SALVATAGGIO?



the PSA assays used were not sensitive enough;

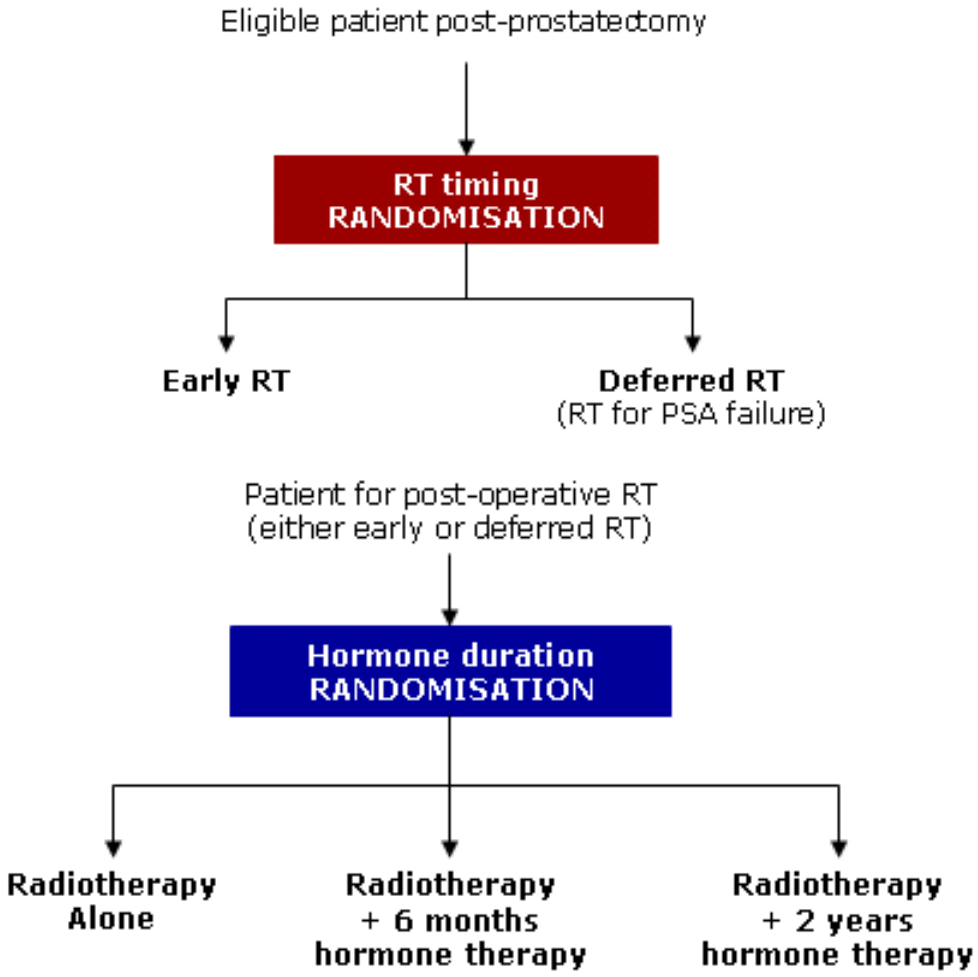
TRIAL TIME PERIOD : PSA Treashold of detection >= **0.2 ng/mL**

NOW: (ultrasensitive PSA assays) able to detect levels >= **0.01 ng/mL**

Trial	Time period	PSA
EORTC	1992-2001	9% PSA >0.2
SWOG	1988-1997	35% PSA >0.2
ARO96	1997 -2004	20% PSA >0.05–0.1 59% PSA >0.03–0.1

RADICALS

- UK, Canada, Denmark and the Republic of Ireland
- phase III randomised controlled trial
- 3000 men to who have had surgery for prostate cancer:



Inclusione:

PSA postop <=0.2
4-22 settimane dopo chir

pT3-4
e/o
Gleson 7-10
e/o
PSA preop >=10
e/o
Marg +

Summary for Radiation Therapists
TROG 08.03 RAVES Trial

A phase III multi-centre randomised trial comparing adjuvant radiotherapy (RT) with early salvage RT at biochemical recurrence in patients with positive margin and/or stage pT3 disease following radical prostatectomy

Trial Design

Eligible patients are randomised to:

Arm 1 – (Standard)
Adjuvant RT to start within 4 months of RP.

Arm 2 – (Experimental arm)
Active surveillance with early salvage RT at biochemical relapse (PSA = 0.2 – 0.4 ng/ml and rising).

ARTICLE IN PRESS

EUROPEAN JOURNAL OF CANCER XXX (2011) XXX–XXX

ELSEVIER

Available at www.sciencedirect.com

SciVerse ScienceDirect

journal homepage: www.ejconline.com

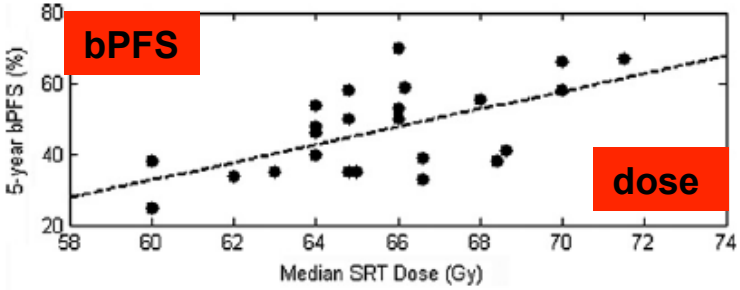
Can early implementation of salvage radiotherapy for prostate cancer improve the therapeutic ratio? A systematic review and regression meta-analysis with radiobiological modelling

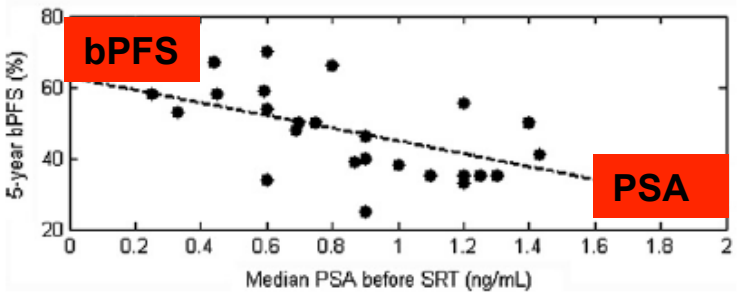
Nitin Ohri [a,*], Adam P. Dicker [a], Edouard J. Trabulsi [b], Timothy N. Showalter [a]

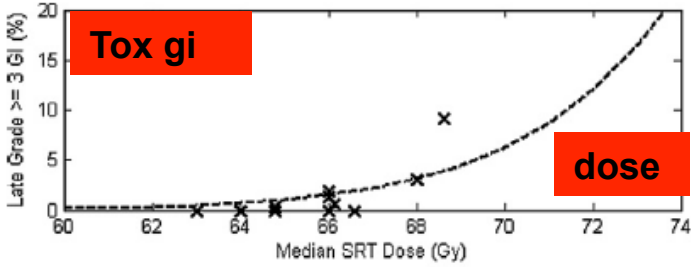
[a] Department of Radiation Oncology, Kimmel Cancer Center, Jefferson Medical College of Thomas Jefferson University, USA
[b] Department of Urology, Kimmel Cancer Center, Jefferson Medical College of Thomas Jefferson University, USA

Twenty-five articles

Studies with
→ at least 30 patients,
→ median PSA before SRT < 2.0 ng/mL,
→ median follow-up of greater than 36 m.







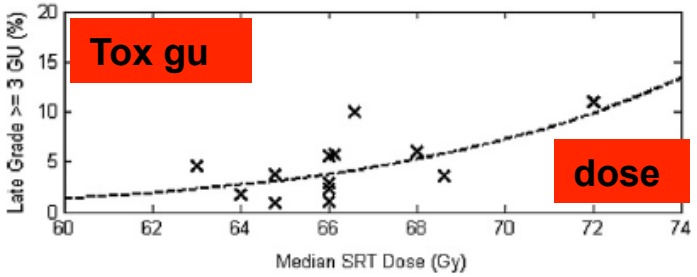


Table 3 – Multivariate analysis results. In each case, forwards stepwise multilinear regression was used to arrive at the final model.

	Coefficient [95% CI]		
	5-year bPFS	Grade ⩾ 3 late GI toxicity	Grade ⩾ 3 late GU toxicity
Time to SRT	–	–	0.2% per month [0.0–0.4]
Median SRT dose	2.5% per Gy [1.5–3.6]	1.2% per Gy [0.3 to 2.1]	0.7% per Gy [0.1–1.4]
Median PSA before SRT	–18.3% per ng/mL [–26.3 to –10.4]	–	–
	$p < 0.001$	$P = 0.012$	$p = 0.010$

Abbreviations: bPFS = biochemical progression-free survival, SRT = salvage radiotherapy, GI = gastrointestinal/Bowel, GU = genitourinary/Bladder.

+ 1 Gy → **+ 2.5%** bPFS 5y

+ 1 ng/ml PSA pre SRT → - 18.3% bPFS 5y

RT ADIUVANTE O DI SALVATAGGIO?

Int. J. Radiation Oncology Biol. Phys., Vol. 80, No. 1, pp. 1–3, 2011

EDITORIAL

ADJUVANT RADIOTHERAPY AFTER PROSTATECTOMY: DOES WAITING FOR A DETECTABLE PROSTATE-SPECIFIC ANTIGEN LEVEL MAKE SENSE?

CHRISTOPHER R. KING, M.D., PH.D.

Department of Radiation Oncology, University of California, Los Angeles School of Medicine, Los Angeles, CA

within a narrow "window of opportunity,"
(postoperative PSA level within the range of 0.05–0.1 ng/mL)
successful postoperative RT will be equally accomplished whether PSA is undetectable or whether it is barely detectable.

BIG QUESTIONS

OT ?

ORMONOTERAPIA NEOADIUVANTE

NADT
LOW –
INTERM RISK

RTOG 9408

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Radiotherapy and Short-Term
Localized Prostate Can

Christopher U. Jones, M.D.
M.D., Deborah W.
Souhami

RT + NADT VANTAGGIOSA PER
CLASSE RISCHIO INTERMEDIO

1 T1b, T1c, T2a, or T2b PSA <20 ng

R

RT (66/2)

RT (66/2)+ plus short-term ADT (4m)
4 months before and during radiotherapy

According to post hoc risk analysis, the benefit was mainly seen in intermediate-risk, but not low-risk, men.

ORMONOTERAPIA NEOADIUVANTE

NADT
HIGH RISK

Int. J. Radiation Oncology Biol. Phys., Vol. 81, No. 1, pp. 35–45, 2011

CLINICAL INVESTIGATION **Prostate**

A RANDOMIZED TRIAL (IRISH CLINICAL ONCOLOGY RESEARCH GROUP 97-01) COMPARING SHORT VERSUS PROTRACTED NEOADJUVANT HORM… THERAPY BEFORE RADIOTHERAPY FOR LOCALIZED PROST…

JOHN G. ARMSTRONG, F.F.R.R.C.S.I.,* CHARLES M. GILLHAM, …
DAVID A. FITZPATRICK, F.F.R.R.C.S.I.,* MARIE …
JUDY C. TAYLOR, B.SC.,† CARMEL M… …CKNEY,§
AND PIERR…

*Department of Radiation Oncology, †… …of Nursing, and §Department of Physics, St. Luke's … …and

Nessuna differenza tra 4 ed 8 mesi

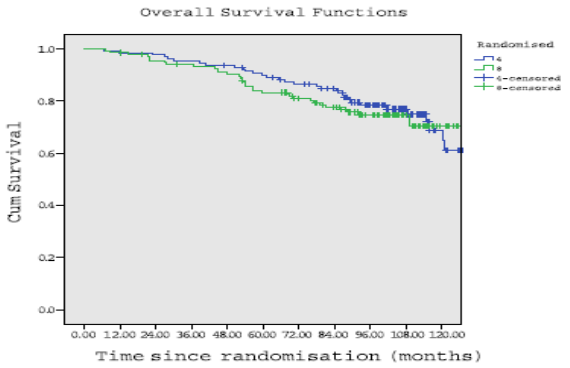
1997 - 2001, 276 p… …, GS>=7 and T3-4

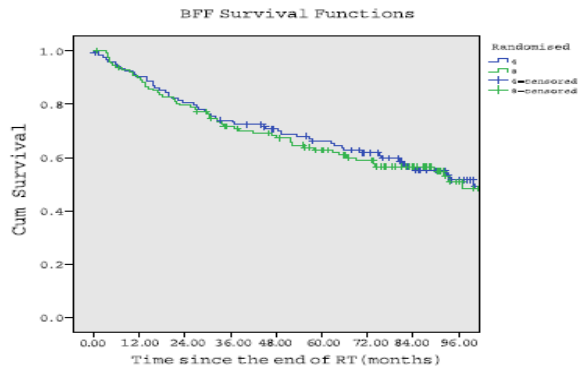
R

*Decapeptyl+Drogenil

NADT 4m + RT (70/2)*

NADT 8m +RT (70/2)*





ORMONOTERAPIA NEOADIUVANTE

NADT HIGH RISK

Lancet Oncol 2011; 12: 451–59

Short-term neoadjuvant androgen deprivation and radiotherapy for locally advanced n… ncer: 10-year data from the TROG 96.01

James W Denham, Allison Steigler, D… …ews, Chris Atkinson, John North, David Christie, Nigel A Spry, Keen-Hun T…

Australia

MEGLIO NADT 6 MESI

Jun 1996 … T2c, T3, and T4 N0 M0

R

*goserelin+flutamide

RT (66/2)

NADT* 3m + RT (66/2)

NADT* 6m +RT (66/2)

	10-year cumulative incidence, % (95% CI)			Univariable analysis: pairwise comparisons of cumulative incidence (p values)		Multivariable models* (HR, 95% CI, p value†)	
	RT alone (N=270)	3 month-NADT (N=265)	6-month NADT (N=267)	3-month NADT vs RT alone	6-month NADT vs RT alone	3-month NADT vs RT alone	6-month NADT vs RT alone
PSA progression‡	73·8% (68·1–78·7)	60·4% (54·2–66·1)	52·8% (46·5–58·7)	0·0009	<0·0001	0·72, 0·57–0·90, 0·003	0·57, 0·46–0·72, <0·0001
Local progression‡	28·2% (22·9–33·7)	15·7% (11·6–20·4)	13·3% (9·5–17·7)	0·0003	<0·0001	0·49, 0·33–0·73, 0·0005	0·45, 0·30–0·66, 0·0001
Distant progression‡ (model 1)§	13·5% (9·7–17·9)	14·5% (10·6–19·1)	9·8% (6·6–13·7)	0·815	0·089	1·03, 0·65–1·61, 0·912	0·66, 0·41–1·09, 0·106
Distant progression‡ (model 2)§	20·6% (16·0–25·6)	18·3% (13·9–23·2)	10·9% (7·5–15·0)	0·497	0·0006	0·89, 0·60–1·31, 0·550	0·49, 0·31–0·76, 0·001
Prostate-cancer-specific mortality‡	22·0% (17·2–27·2)	18·9% (14·4–23·9)	11·4% (7·9–15·6)	0·394	0·0002	0·86, 0·60–1·23, 0·398	0·49, 0·32–0·74, 0·0008
All-cause mortality¶	42·5% (36·7–48·7)	36·7% (31·1–42·9)	29·2% (24·1–35·1)	0·198	0·0005	0·84, 0·65–1·08, 0·180	0·63, 0·48–0·83, 0·0008
Event-free survival¶	12·7% (9·0–17·1)	28·8% (23·4–34·5)	36·0% (30·2–41·8)	<0·0001	<0·0001	0·63, 0·52–0·77, <0·0001	0·51, 0·42–0·61, <0·0001

OT SU RECIDIVA BIOCHIMICA DOPO RT IN ASSENZA DI METASTASI

NCIC CTG TRIAL PR7

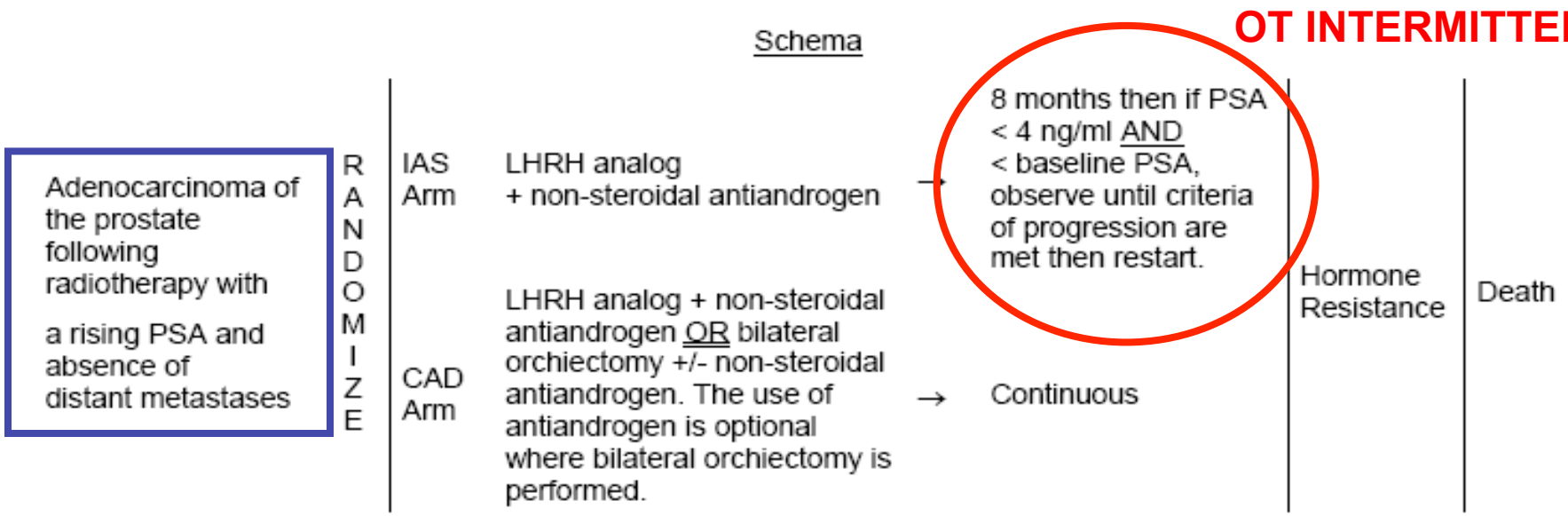
A PHASE III RANDOMIZED TRIAL COMPARING INTERMITTENT VERSUS CONTINUOUS ANDROGEN SUPPRESSION FOR PATIENTS WITH PROSTATE-SPECIFIC-ANTIGEN PROGRESSION IN THE CLINICAL ABSENCE OF DISTANT METASTASES FOLLOWING RADIOTHERAPY FOR PROSTATE CANCER

NCIC CTG TRIAL PR.7

A Canadian Led Intergroup Study (JPR.7, The Intercontinental Trial)

OT INTERMITTENTE

Schema



Planned Sample Size: 1340 (with intergroup participants)

ADT
CAD vs IAS

ASTRO
ANNUAL MEETING
SCIENCE BASED, PATIENT DRIVEN

53rd ANNUAL MEETING
Meeting Dates: October 2-6, 2011 | Exhibition Dates: October 2-4, 2011
MIAMI BEACH CONVENTION CENTER | MIAMI BEACH, FLA.
www.astro.org/annualmeeting

8 **A Phase III Randomized Trial of Intermittent vs. Continuous Androgen Suppression for PSA R… after Radical Therapy (NCIC CTG PR.7/SWOG JPR.7/CTSU JPR.7/UK Intercontinent… 013)**

J. M. Crook[1], S. Malone[2], E. Horwitz[3], D. Dearnaley[4], G. Duncan[5], P. Warde[6], … L. Klotz[8]

[1]*University of British Columbia, Kelowna, BC, Canada,* [2]*U… Center, Philadelphia, PA,* [4]*University of London, L… Canada,* [6]*Princess Margaret Hospital, Tor… Hospital, Toronto, ON, Canada*

OT INTERMITTENTE
NON INFERIORE A CAD in OS
Migliore QoL

Purpose/Objecti…
quality of l… …urvival (OS…

…mary RT or salvage RT post …gen deprivation therapy (ADT) was …–3 vs. >3 years), initial PSA (<15 vs. >15 …determined off-treatment periods. Primary endpoint …L/LDL, duration of treatment, and testosterone and potency …riority in a planned interim analysis was < a pre-specified stopping …

…were randomized to IAS; 696 to CAD. Median age was 74.2 years; follow-up 6.9 years. …d. IAS patients completed one to nine 8-month cycles (median: 2) and had reduced hot flashes … other AEs, including myocardial events or osteoporotic fractures. Thirty-five percent of IAS cases had …ne recovery. Cross sectional QOL analysis shows a range of benefits for IAS at varying times. Using a 10 point …ge from baseline score as clinically meaningful, IAS patients had better QOL in physical function, fatigue, urinary problems, hot flashes, desire for sexual activity, and erectile function (all p values < 0.01). Five hundred twenty-four patients died (268 IAS vs. 256 CAD). Median OS was 8.8 vs. 9.1 years on IAS and CAD arms, respectively (HR, 1.02; 95% CI = 0.86 – 1.21; p for non-inferiority [HR IAS vs. CAD ≥1.25] = 0.009). IAS arm had more disease related (122 vs. 97) and fewer unrelated (134 vs. 146) deaths. Time to HR was statistically significantly improved on the IAS arm (HR, 0.80; 95% CI, 0.67 – 0.98; $p = 0.024$).

Conclusions: In the schedule of on-treatment/off-treatment intervals studied, IAS is non-inferior to CAD with respect to OS. Benefits were observed in QOL measures. IAS should be considered in the non-metastatic setting for men with a rising PSA following primary or post-RP salvage RT.

OT+RT SU RECIDIVA BIOCHIMICA DOPO CHIR

RTOG 9601

J Clin Oncol 29: 2011 (suppl 7; abstr 1)

AAT+RT POSTOP

ASCO
American Society of Clinical Oncology
Making a world of difference in cancer care

Initial report of RTOG 9601, a phase III trial in prostate cancer: Effect of anti-androgen therapy (AAT) with bicalutamide during and after radiation therapy (RT) on freedom from progression and incidence of metastatic disease in patients following radical prostatectomy (RP) with pT2-3,N0 disease and elevated PSA levels.

Post RP pT2-T3 N0 (marg+), elevated PSA

3/98 - 3/03,
771 pts

R

RT (64.8 /1.8)

RT (64.8 /1.8) + AAT
(24 m. bicalutamide, 150mg daily) during and after RT

Median follow-up 7.1 y	RT %	RT+AAT %	
OS	**86**	**91**	
FFS	**40**	**57**	**P<0.0001**
M	**13**	**7**	**P<0.041**
Gynecomastia	**15**	**89**	

MORTE PER DANNO CARDIOVASCOLARE ED OT

ASTRO ANNUAL MEETING
SCIENCE BASED, PATIENT DRIVEN

Meta-analisi

53rd ANNUAL MEETING
Meeting Dates: October 2-6, 2011 | Exhibi… ober 2-4, 2011
MIAMI BEACH CONVENTION… ACH, FLA.

10 **Meta-analysis of the Impact of Androgen Deprivation Therapy on Cardiov… Prostate Cancer**

P. L. Nguyen[1], Y. Je[2], F. A. B. Schutz[1], K. E. Hoffman[3], J. C. Hu[4] …
[1]*Dana-Farber/Brigham and Women's Hospital, Boston, M…*
Texas/MD Anderson Cancer Center, Houston, TX …
Women's Hospital, Boston, MA

Purpose/Objective(s): An… whether it causes … this issue …

…for …s were con… …ers based on the het… …nal beam radiation (5 trials), surgery (1 … patients receiving ADT vs. control was 10.4% …tistically significant difference in cardiovascular death … – 1.14; $p = 0.62$). There was also no significant relationship …ients in trials of 3+ years (longer duration) of ADT ($p = 0.34$) or among …ration) of ADT ($p = 0.47$). ADT was associated with a significant reduction in … (95% CI, 10.2 – 20.5%) vs. 25.1% (95% CI, 18.1 – 33.8%), (RR, 0.64; 95% CI, … all-cause mortality: 45.3% (95% CI, 31.5 – 59.9%) vs. 52.3% (95% CI, 38.2 – 66.0%) (RR …; $p = 0.01$). No evidence of publication bias was observed.

Conclu… In this large pooled analysis of multiple randomized trials in high-risk non-metastatic prostate cancer, ADT improved prostate-cancer specific survival and overall survival without causing excess cardiovascular deaths. Whether these results would differ for the subgroup of men with pre-existing cardiac comorbidities is unknown and warrants further study.

ADT MIGLIORA IL CONTROLLO LOCALE E LA SOPRAVVIVENZA SENZA AUMENTARE LA TOSSICITA' CARDIACA IN PAZIENTI HIGH RISK

OT + DOSE ESCALATION

RTOG 94-06

Int. J. Radiation Oncology Biol. Phys., Vol. 79, No. 5 [illegible] 23–1329, 2011

CLINICAL INVESTIGATION

DOES HORMONE THERAPY REDUCE DISEASE RECURRENCE
CANCER PATIENTS RECEIVING DOSE-ESCALATED RAD
ANALYSIS OF RADIATION THERAPY ONC

RICHARD K. VALICENTI, M.D.,* KWOU[illegible]LSKI, M.D.,‡
HOWARD SANDLER, M.D.,§ WILLIAM S[illegible]., AND JAMES COX, M.D.#

*Department of Radiation Oncology [illegible] of Medicine, Davis, CA; †Department of Statistics, Radiation Therapy Oncology G[illegible] Radiation Oncology, Washington University, St. Louis, MO; §Department of Radiati[illegible] Arbor, MI; ‖Department of Radiation Oncology, Massachusetts General Hospital [illegible] Oncology, University of Pennsylvania, Philadelphia, PA; and #Division of [illegible]gy, MD Anderson Cancer Center, Houston, TX

NON VANTAGGIOSO

	LOW RISK		INTERM. RISK		HIGH RISK		
	RT	RT + NHD	RT	RT + NHD	RT	RT + NHD	RT+ NHD+ AHT
DFS 5y %	78	72	68	64	55	58	68
BFR 5y %	12	20	18	23	29	30	25

OT + DOSE ESCALATION

Int. J. Radiation Oncology Biol. Phys., Vol. 80, No. 4, pp. 1064–1071, 2011

CLINICAL INVESTIGATION **Prostate**

LACK OF BENEFIT FOR THE ADDITION OF ANDROGEN DEPRIVATION THERAPY TO DOSE-ESCALATED RADIOTHERAPY IN THE TREATMENT OF INTERMEDIATE- AND HIGH-RISK PROSTATE CANCER

DANIEL KRAUSS, M.D., LARRY KESTIN, M.D., HONG YE, M.S., DONALD BRABBINS
MICHEL GHILEZAN, M.D., GARY GUSTAFSON, M.D., FRANK VICINI
AND ALVARO MARTINEZ, M.D., F.A.C.R.

Department of Radiation Oncology, William Beaumont

From

1,044 patients: 420 ADT + do , and 624 dose escalated RT alone.

NON VANTAGGIOSO

Cox multiple regression

teristic	Hazard ratio	*p* value
Biochemical control (nadir + 2)		
Pretreatment PSA (ng/mL)	1.02	<0.001
Biopsy Gleason score	1.40	<0.001
Clinical T stage	1.14	0.009
ADT (vs. no ADT)	0.78	0.13
Clinical failure (local or distant)		
Pretreatment PSA (ng/mL)	1.00	0.74
Biopsy Gleason score	1.80	<0.001
Clinical T stage	1.34	<0.001
ADT (vs. no ADT)	0.81	0.44

Abbreviations: ADT = androgen deprivation therapy; PSA = prostate-specific antigen.

OT + DOSE ESCALATION

Int. J. Radiation Oncology Biol. Phys., Vol. 81, No. 4, pp. e335–e344, 2011

CLINICAL INVESTIGATION **Prostate**

CONTINUED BENEFIT TO ANDROGEN DEPRIVATION THERAPY FOR PROSTATE CANCER PATIENTS TREATED WITH DOSE-ESCALATED RADIATION THERA… ACROSS MULTIPLE DEFINITIONS OF HIGH-RISK DISEASE

MATTHEW H. STENMARK, M.D.,* KEVIN BLAS, B.S.,* SCHUYLER …

Between 1998 and 2008 at the Uni… …gan Medical Center, 718 men were consecutively… …RT to at least 75 Gy

VANTAGGIOSO

Table 6 … adjuvant ADT on metastasis and prostate cancer death as a function of the different definitions of high-risk disease

…ature	Adjuvant ADT	n	Biochemical failure 8-year (SEM)	Biochemical failure p value HR (95% CI)	Metastasis 8-year (SEM)	Metastasis p value HR (95% CI)	Prostate cancer death 8-year (SEM)	Prostate cancer death p value HR (95% CI)
Gleason 8–10*	Yes	126	34% (29–39)	$p < 0.03$	20% (16–24)	$p < 0.001$	18% (13–23%)	$p < 0.04$
	No	19	56% (44–68)	0.48 (0.20–1.1)	51% (39–63)	0.31 (0.11–0.89)	37% (25–49)	0.41 (0.14–1.2)
Gleason Pattern 5*	Yes	68	41% (32–50)	$p = 0.001$	35% (27–43)	$p < 0.0001$	40% (30–50)	$p < 0.04$
	No	8	75% (60–90)	0.25 (0.05–1.1)	75% (60–90)	0.19 (0.04–1.0)	69% (51–87)	0.38 (0.11–1.3)
PSA >20 ng/mL*	Yes	90	40% (34–46)	$p = 0.19$	27% (20–34)	$p < 0.005$	12% (7–17)	$p < 0.04$
	No	31	43% (34–52)	0.70 (0.39–1.3)	46% (36–56)	0.38 (0.17–0.85)	34% (24–42)	0.43 (0.17–1.0)
cT3/4*	Yes	53	43% (35–51)	$p = 0.33$	31% (23–39)	$p < 0.1$	19% (12–26)	$p > 0.3$
	No	27	49% (30–48)	0.75 (0.40–1.4)	46% (36–56)	0.54 (0.25–1.2)	32% (22–42)	0.68 (0.26–1.7)
NCCN high risk*	Yes	185	31% (27–35)	$p = 0.10$	20% (15–25)	$p < 0.0004$	13% (9–17)	$p < 0.04$
	No	49	39% (32–46)	0.68 (0.41–1.1)	41% (33–39)	0.38 (0.19–0.74)	30% (22–38)	0.50 (0.23–1.1)

OT + DOSE ESCALATION

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

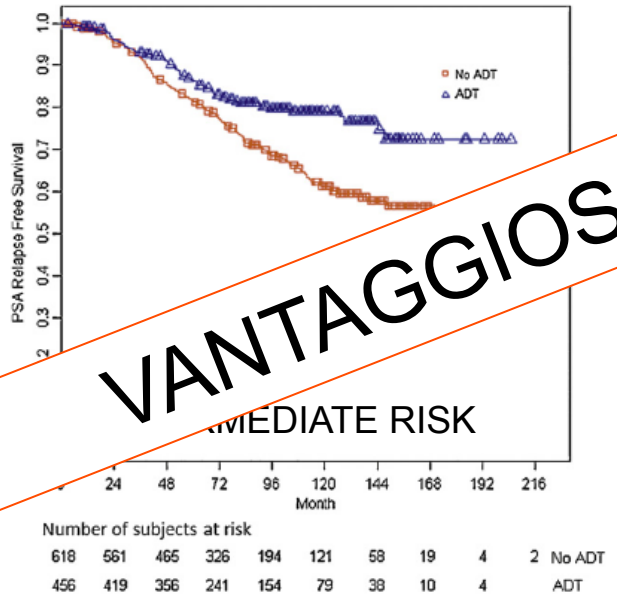
European Association of Urology

Platinum Priority – Prostate Cancer
Editorial on pp. x–y of this issue

Dose Escalation for Prostate Cancer R
Predictors of Long-Term Biochemical
Distant Metastases–Free Survival Out

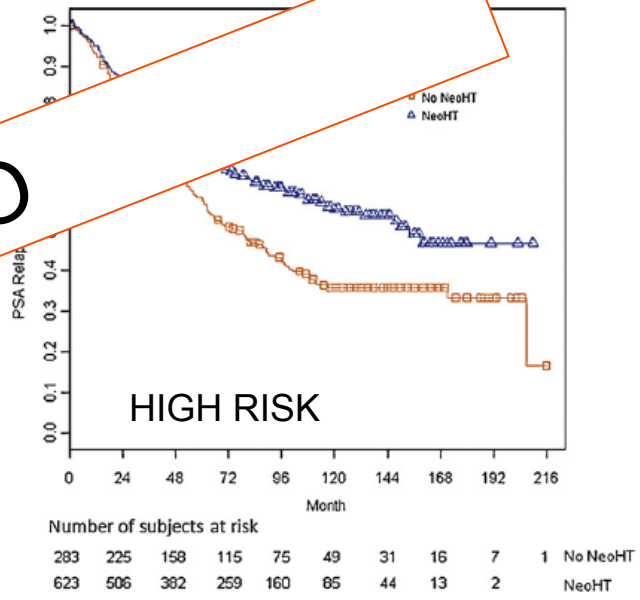
*Michael J. Zelefsky *, Xin Pei, Joanne F. Chou, Michael*
Brett Cox, Yoshiya Yamada, Anthony Fidaleo, Dahlia Sp

VANTAGGIOSO



IMEDIATE RISK

Fig. 4 – Prostate-specific antigen (PSA) relapse–free survival according to the use of androgen-deprivation therapy (ADT) showing a significant benefit for intermediate risk prostate cancer. The *p* value is <0.0001. NeoHT = neoadjuvant hormone therapy.



HIGH RISK

Fig. 5 – The 10-yr prostate-specific antigen (PSA) relapse–free survival for high-risk patients treated with and without androgen-deprivation therapy was 55% and 36%, respectively ($p < 0.0001$). NeoHT = neoadjuvant hormone therapy.

Conclusions: Higher radiation dose levels were consistently associated with improved biochemical control outcomes and reduction in distant metastases. The use of short-course ADT in conjunction with RT improved long-term PSA-RFS and DMFS in intermediate- and high-risk patients; however, an overall survival advantage was not observed.

OT + DOSE ESCALATION

Michael J. Zelefsky EJU 2011 in press

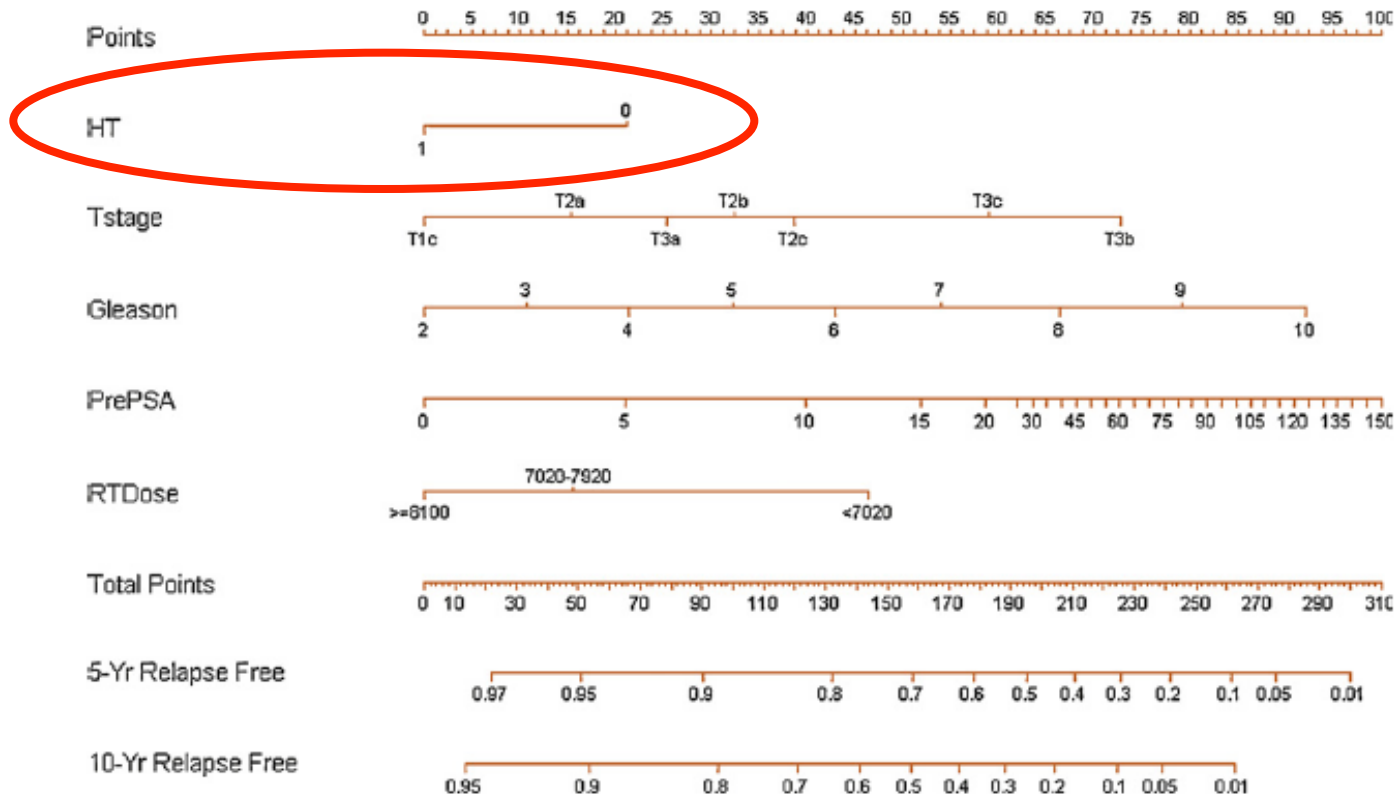


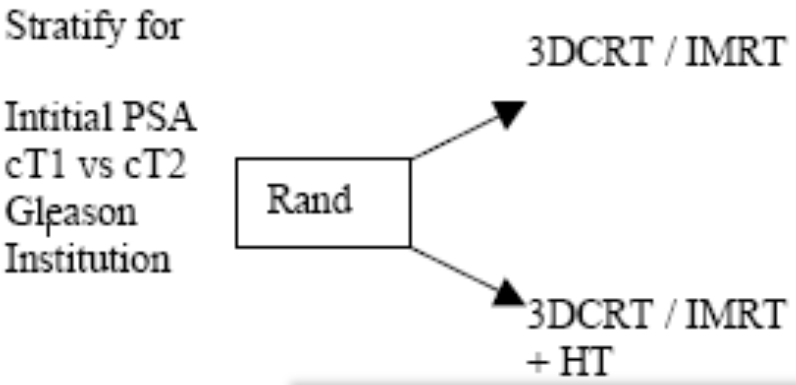
Fig. 6 – Nomogram for predicting biochemical tumor control at 5 and 10 yr after external-beam radiotherapy (RT) (concordance index: 0.67). HT = 6 mo neoadjuvant and concurrent hormone therapy; PSA = prostate-specific antigen.

OT + DOSE ESCALATION

EORTC PROTOCOL 22991

3DCRT/IMRT alone vs 3DCRT/IMRT plus HT
in localized T1b-c, T2a, N0, M0
Prostatic carcinoma.

A Phase III Randomized Study.



70 Gy or 74 Gy or 78 Gy (2 Gy/fr)

Short term hormonal therapy will consist of:

Bicalutamide (Casodex) : 50 mg P.O. once daily for 1 month, starting 1 week prior to LH-RH (i.e. one week prior to the first day of irradiation)

LH-RH agonist (Zoladex) : 2 injections of a 10.8 mg 3-monthly depot preparation; the first injection given the first day of radiation and the second 3 months later for a total duration of 6 months treatment.

OT + DOSE ESCALATION

RTOG 0815

RTOG 0815 is Now Available Through the CTSU

A Phase III Prospective Randomized Trial of Dose-Escalated Radiotherapy With or Without Short-Term Androgen Deprivation Therapy for Patients With Intermediate-Risk Prostate Cancer

intermediate risk:

GS=7, MPSA > 10 but ≤ 20, and/or cT2b-T2c

R

Arm 1 (RT only):

- EBRT only: 79.2 Gy delivered in 1.8 Gy fractions.
- EBRT in those to receive brachytherapy: 45 Gy delivered in 1.8 Gy fractions.
- Brachytherapy boost at investigator discretion, must be selected at time of enrollment.

Arm 2 (RT plus ADT):

- Total androgen blockade for 6 months
  - Antiandrogen therapy (i.e., Casodex or Eulexin)
  - LHRH Agonist therapy (e.g., leuprolide, goserelin, buserelin, triptorelin)

Eight weeks after first LHRH injection:

- EBRT only: 79.2 Gy delivered in 1.8 Gy fractions.
- EBRT in those to receive brachytherapy: 45 Gy delivered in 1.8 Gy fractions.
- Brachytherapy boost at investigator discretion, must be selected at time of enrollment.

RADIOTERAPIA ED ORMONOTERAPIA

available at www.sciencedirect.com
journal homepage: www.europeanurology.com

European Association of Urology

Platinum Priority – Editorial and Reply from Authors
Referring to the article published on pp. x–y of this issue

Intermediate- and High-Risk Prostate Cancer: A Plea for High-Dose, High-Precision Intensity-Modulated Radiotherapy With a Modulated Duration of Androgen Deprivation Therapy

Michel Bolla

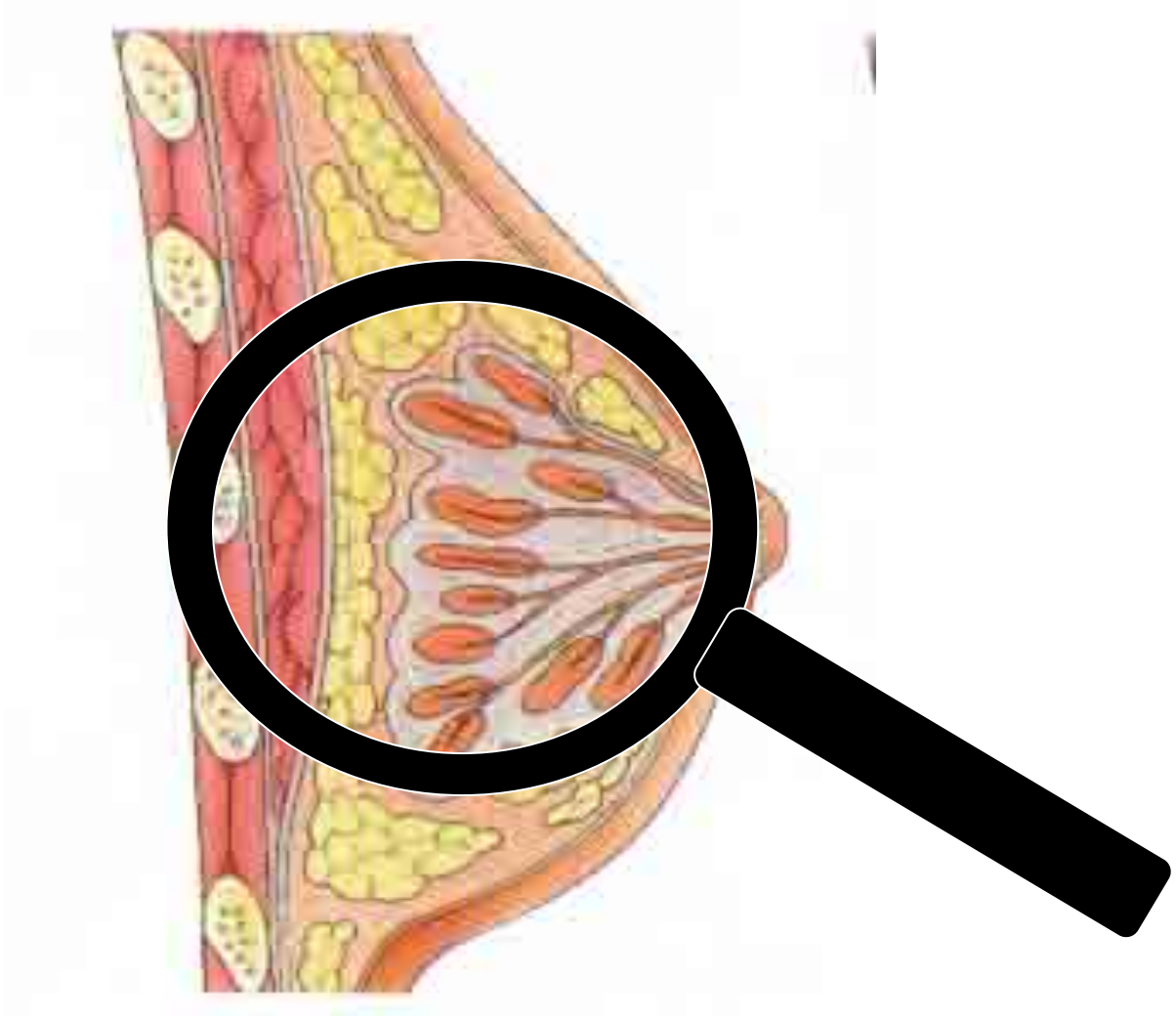
Clinique Universitaire de Cancérologie-Radiothérapie, Centre Hospitalier Universitaire de Grenoble, Grenoble, France

intermediate-risk =
Short term complete ADT (**4–6 mo)** with image-guided IMRT (**78 Gy).**
Patients who are reticent to receive ADT because of comorbidities or because they hope to preserve their sexual health may be offered image-guided IMRT **(around 80 Gy)** or the promising combined IMRT–brachytherapy approach.

high-risk localized PCa =
ADT duration of **6 mo** is enough

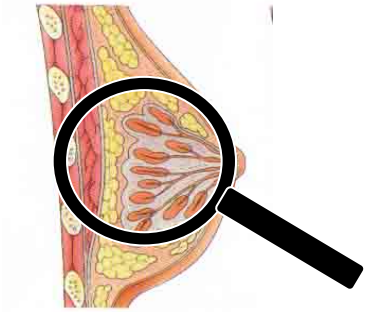
locally advanced PCa =
Pelvic lymph node irradiation is recommended with a dose of 50 Gy
ADT duration >2 yr for locally advanced PCa patients with a World Health Organization score of 0–2 and no significant comorbidity,

Breast cancer



PubMed.gov

Gen 2011 – Nov 2011



breast cancer	13179
breast cancer + treatment	6952
breast cancer + treatment + radiotherapy	820
breast cancer + treatment + surgery	2819

Meta analysis Sistematic reviews	4 11
Clinical trials	61
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(11+4)

(17)

(71)

TERAPIE CONSERVATIVE

RIDURRE I VOLUMI (CHIRURGICI E RADIOTERAPICI)

IMPIEGARE SCHEMI DI RADIOTERAPIA PIU' CONVENIENTI ED UGUALMENTE EFFICACI

Breast Care

Review Article · Übersichtsarbeit

Breast Care 2011;6:136–141
DOI: 10.1159/000328054

Published online: April 29, 2011

March 15-19 2011

St. Gallen 2011: Summary of the Consensus Discussion

Michael Gnant[a] Nadia Harbeck[b] Christoph Thomssen[c]

- Locoregional therapy
- Endocrine treatment
- Chemotherapy
- Target therapy and bisphosphonate

Evidence presented to support:

A less aggressive approach to axillary surgery in defined circumstances.

The use of more convenient equally effective approaches to radiation therapy.

JAMA. 2011;305(6):569-575

Axillary Dissection vs No Axillary Dissection in Women With Invasive Breast Cancer and Sentinel Node Metastasis

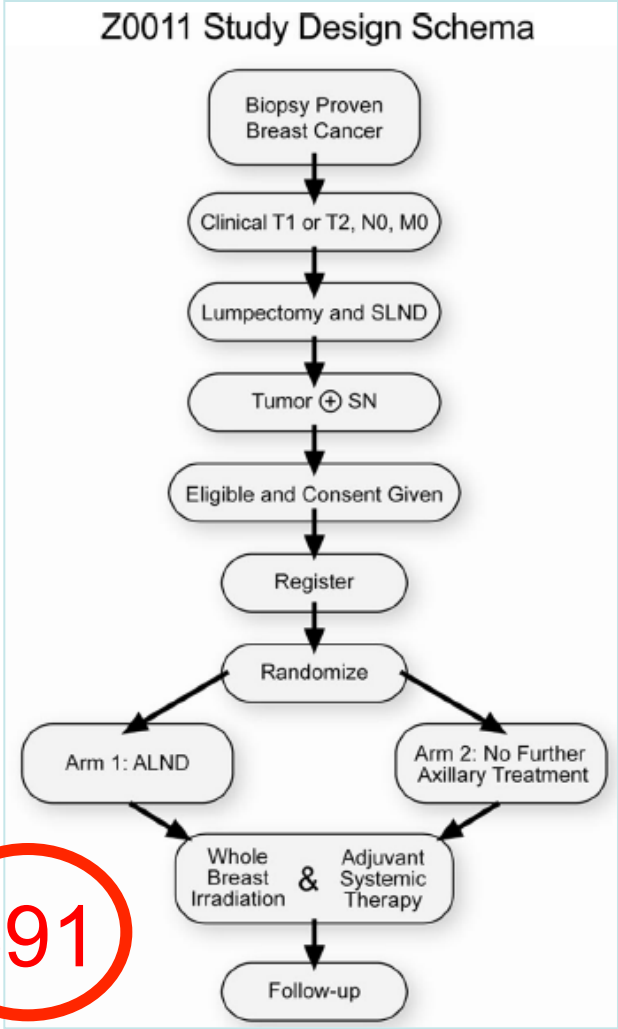
A Randomized Clinical Trial

Armando E. Giuliano, MD

American College of Surgeons Oncology Group
(ACOSOG) Z0011
phase III trial
115 sites
May 1999 - Dec2004

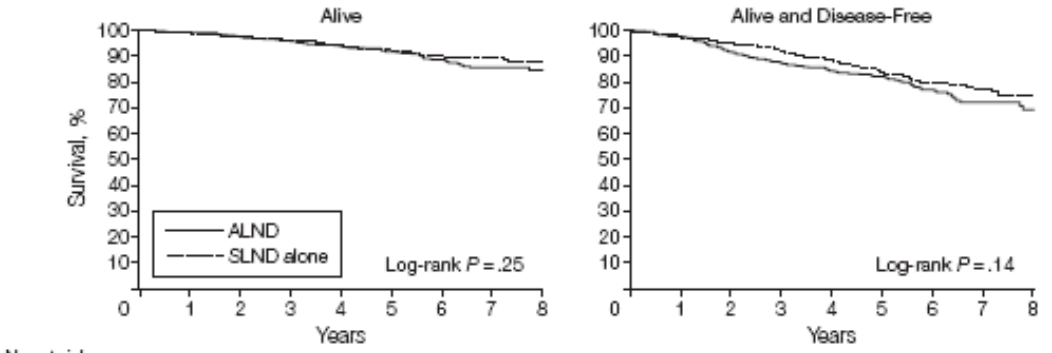
Targeted enrollment 1900 women with final analysis after 500 deaths
the trial closed early because mortality rate was lower than expected.

891



JAMA. 2011;305(6):569-575

Figure 2. Survival of the ALND Group Compared With SLND-Alone Group



No. at risk

ALND	420	408	398	391	378	313	223	141	74
SLND alone	436	421	411	403	387	326	226	142	74

ALND	420	369	335	310	286	226	152	83	37
SLND alone	436	395	363	337	307	231	147	81	36

ALND indicates axillary lymph node dissection; SLND, sentinel lymph node dissection.

median follow-up of 6.3 years

the use of SLND alone compared with ALND did not result in inferior survival

Strategies for subtypes—dealing with the diversity of breast cancer: highlights of the St Gallen International Expert Consensus on the Primary Therapy of Early Breast Cancer 2011

A. Goldhirsch[1]*, W. C. Wood[2], A. S. Coates[3], R. D. Gelber[4], B. Thürlimann[5], H.-J. Senn[6] & Panel members[†]

The Panel accepted the option of **omitting axillary dissection for macrometastases in the context of lumpectomy and radiation therapy for patients with clinically node negative disease and 1–2 positive sentinel lymph nodes** as reported from ACOSOG trial Z0011

The Panel, however, was very clear that this practice, based on a specific clinical trial setting, should not be extended more generally

The Breast 20 (2011) S3, S96–S98

Contents lists available at ScienceDirect

The Breast

journal homepage: www.elsevier.com/brst

Original Article

Positive axillary sentinel lymph node: Is axillary dissection always necessary?

Viviana Galimberti[a,*], Camelia Chifu[a], Suanly Rodriguez Perez[a], Paolo Veronesi[a,b], Mattia Intra[a], Edoardo Botteri[c], Mauro Mastropasqua[d], Marco Colleoni[e], Alberto Luini[a], Umberto Veronesi[f]

sources appears sufficiently robust to justify not performing AD if the SN is *micrometastatic* in women with small cancers having favorable prognostic factors. However this option should discussed with the patient.

if the SN is *macrometastatic* a cautious attitude should prevail, and foregoing AD should not be routine.

Perhaps nomograms may be a sufficiently accurate for deciding whether further axillary treatment is necessary in patients with a macrometastatic SN

FONCAM

17 novembre - Firenze

OMISSIONE SVUOTAMENTO ASCELLARE SE 1 o 2 L.S. CON MACROMETASTASI?

- PRUDENZA
- STUDI CLINICI CONTROLLATI

Meta-analysis

ELSEVIER

Available online at www.sciencedirect.com

ScienceDirect

EJSO 37 (2011) 290–299

EJSO
the Journal of Cancer Surgery

www.ejso.com

Review

Meta-analysis of predictive factors for non-sentinel lymph node metastases in breast cancer patients with a positive SLN

R.F.D. van la Parra [a,*], P.G.M. Peer [b], M.F. Ernst [c], K. Bosscha [c]

[a] *Department of Surgery, Gelderse Vallei Hospital, 6716 RP Ede, The Netherlands*
[b] *Department of Epidemiology, Biostatistics and Health Technology Assessment, Radboud University Nijmegen Medical Center, Nijmegen, The Netherlands*
[c] *Department of Surgery, Jeroen Bosch Hospital, 's-Hertogenbosch, The Netherlands*

Two different MEDLINE search strategies were conducted to identify relevant articles published up to July 2009:

1. MeSH Database: "Breast Neoplasms" [Majr] AND "Sentinel Lymph Node Biopsy" [Majr] AND "Lymphatic Metastasis" [Majr] AND "Predictive".
2. Clinical Queries, category 'clinical prediction guides,' sensitive search: positive non-sentinel lymph nodes in breast cancer.

56 studies
1999-2009

Meta-analysis

Conclusion

We identified 8 factors predictive of non-sentinel node metastases that should be recorded and evaluated routinely in sentinel lymph node databases and included in a predictive model for NSN positivity that is generally applicable among different populations.

1. method of detection
2. SLN metastases >2 mm in size,
3. extracapsular extension in the SLN,
4. <=1negative SLN,
5. >1 positive SLN,
6. ratio of positive sentinel nodes >50%,
7. tumour size >2 cm,
8. lymphovascular invasion in the primary tumour.

Table 2
Absolute risks on positive NSNs and 95% CI for all predictors.

		Positive NSN			
		Pooled proportion	95% CI	Pooled OR	95% CI
Method of detection	IHC-only	0.11	0.06–0.16	4.37	2.78–6.86
	Other	0.40	0.36–0.44		
Size of metastasis	≤2 mm	0.17	0.15–0.20	4.22	3.51–5.07
	>2 mm	0.51	0.47–0.55		
ECE	No	0.30	0.26–0.33	4.10	3.16–5.34
	Yes	0.64	0.56–0.72		
No negative SNs	>1	0.24	0.18–0.30	2.66	2.05–3.46
	≤1	0.48	0.44–0.53		
No positive SNs	1	0.33	0.30–0.36	2.60	2.03–3.34
	>1	0.56	0.47–0.66		
Tumour size	≤2 cm	0.30	0.28–0.33	2.41	2.00–2.91
	>2 cm	0.52	0.46–0.57		
Ratio positive SNs	≤50%	0.24	0.19–0.29	2.25	1.63–3.10
	>50%	0.44	0.34–0.54		
LVI	Absent	0.31	0.27–0.35	2.24	1.93–2.59
	Present	0.52	0.48–0.56		
Nuclear grade	≤2	0.41	0.35–0.46	1.51	1.27–1.81
	>2	0.47	0.43–0.50		
Multifocality	Absent	0.37	0.33–0.40	1.40	1.23–1.60
	Present	0.46	0.40–0.52		
No SNs removed	>1	0.37	0.34–0.40	1.34	1.07–1.68
	1	0.44	0.38–0.49		
Palpable tumour	No	0.31	0.22–0.40	1.31	0.71–2.42
	Yes	0.36	0.30–0.42		
Tumour grade	≤I + II	0.38	0.33–0.43	1.29	1.11–1.50
	>III	0.47	0.42–0.52		
HER-2	Negative	0.41	0.34–0.49	1.24	0.94–1.63
	Positive	0.48	0.38–0.57		
Histology	Ductal	0.40	0.37–0.43	1.22	1.03–1.44
	Other	0.43	0.38–0.47		
Tumour location	Other	0.42	0.35–0.49	1.13	0.78–1.65
	UOQ	0.45	0.39–0.51		
Age	≥50 yrs	0.40	0.35–0.45	1.07	0.91–1.25
	<50 yrs	0.41	0.34–0.48		
PR	Negative	0.48	0.41–0.55	0.77	0.63–0.94
	Positive	0.40	0.35–0.46		
ER	Negative	0.47	0.40–0.54	0.74	0.62–0.89
	Positive	0.38	0.35–0.41		

LVI: lymphovascular invasion; ER: oestrogen receptor; PR: progesterone receptor; ECE: extracapsular extension; SNs: sentinel nodes; IHC: immunohistochemistry; UOQ: upper outer quadrant.

OXFORD META-ANALYSIS

Lancet 2011; 378: 771–84

Effect of radiotherapy after breast-conserving surgery on 10-year recurrence and 15-year breast cancer death: meta-analysis of individual patient data for 10 801 women in 17 randomised trials

*Early Breast Cancer Trialists' Collaborative Group (EBCTCG)**

	Number of trials available*	Years trials began	Women	Deaths	Woman-years at risk						
					Median/ woman	Total (thousands)	Distribution by years since diagnosis (thousands)				
							<5	5–9	10–14	15–19	20+
Trial category†											
(A) Lumpectomy, original trials[6-11]	6	1976–86	4398	1982	11·8	52·9	20·3	16·0	10·1	4·8	1·7
(B) Sector resection or quadrantectomy[12-15]	4	1981–91	2399	708	12·4	29·4	11·6	10·3	6·0	1·4	0·1
(C) Lumpectomy in low-risk women[16-22]	7	1989–99	4004	453	6·6	26·9	17·9	7·9	1·1	0·0	0·0
Pathological nodal status											
Negative (pN0)	..	..	7287	1801	9·7	73·7	34·0	23·3	11·3	3·9	1·2
Positive (pN+)	..	..	1050	585	10·3	11·8	4·6	3·2	2·2	1·3	0·5
Unknown	..	..	2464	757	8·8	23·6	11·3	7·6	3·7	1·0	0·0
All women	17	1976–99	10 801	3143	9·5	109·1	49·8	34·1	17·2	6·3	1·7

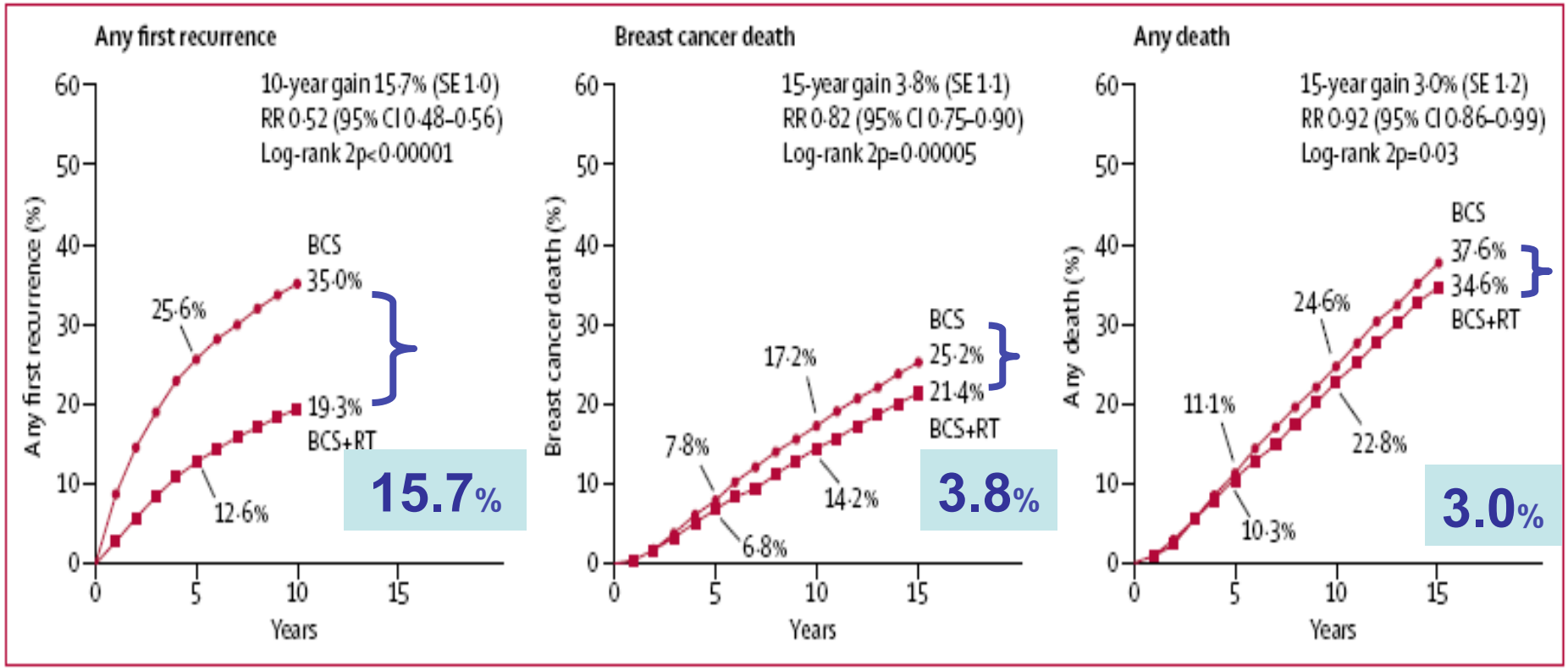
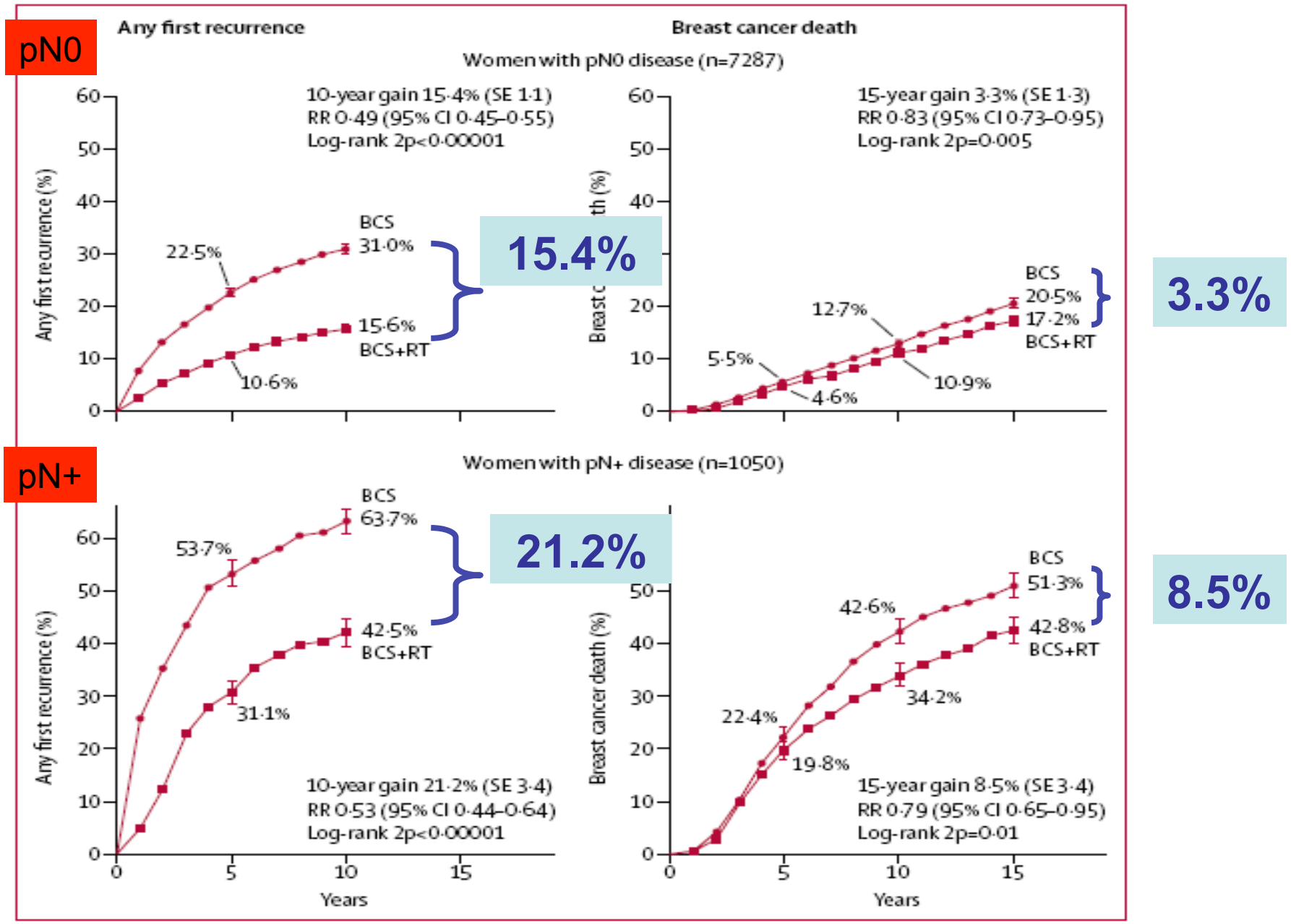
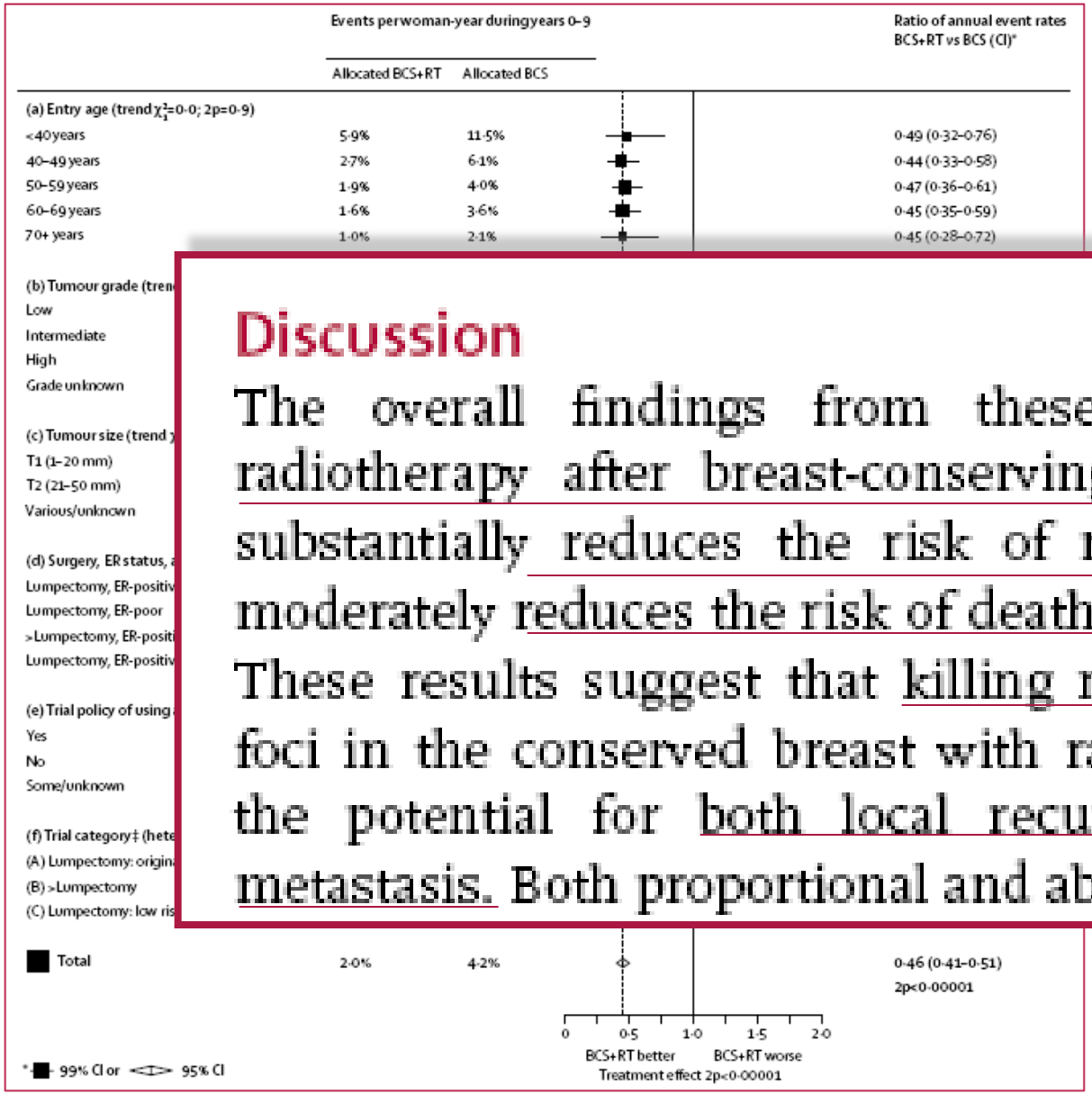


Figure 1: Effect of radiotherapy (RT) after breast-conserving surgery (BCS) on 10-year risk of any (locoregional or distant) first recurrence and on 15-year risks of breast cancer death and death from any cause in 10 801 women (67% with pathologically node-negative disease) in 17 trials
Further details are in webappendix p 5. RR=rate ratio. Rate ratios in this figure include all available years of follow-up.

1 breast cancer death avoided

for every 4 recurrences avoided by RT


pN0
Any first recurrence
Breast cancer death
Women with pN0 disease (n=7287)
10-year gain 15·4% (SE 1·1)
RR 0·49 (95% CI 0·45–0·55)
Log-rank 2p<0·00001
15-year gain 3·3% (SE 1·3)
RR 0·83 (95% CI 0·73–0·95)
Log-rank 2p=0·005
Any first recurrence (%)
Breast c
22·5%
BCS
31·0%
15·6%
BCS+RT
10·6%
15.4%
5·5%
12·7%
4·6%
10·9%
BCS
20·5%
17·2%
BCS+RT
3.3%
pN+
Women with pN+ disease (n=1050)
Any first recurrence (%)
Breast cancer death (%)
53·7%
BCS
63·7%
42·5%
BCS+RT
31·1%
21.2%
10-year gain 21·2% (SE 3·4)
RR 0·53 (95% CI 0·44–0·64)
Log-rank 2p<0·00001
42·6%
BCS
51·3%
42·8%
BCS+RT
34·2%
22·4%
19·8%
8.5%
15-year gain 8·5% (SE 3·4)
RR 0·79 (95% CI 0·65–0·95)
Log-rank 2p=0·01
Years
Years



Discussion

The overall findings from these trials show that radiotherapy after breast-conserving surgery not only substantially reduces the risk of recurrence but also moderately reduces the risk of death from breast cancer. These results suggest that killing microscopic tumour foci in the conserved breast with radiotherapy reduces the potential for both local recurrence and distant metastasis. Both proportional and absolute reductions in

RIDUZIONE DEI VOLUMI RADIOTERAPICI

PARTIAL BREAST

ONGOING

NSABP PROTOCOL B-39
RTOG PROTOCOL 0413

A Randomized Phase III Study of Conventional Whole Breast Irradiation (WBI) Versus Partial Breast Irradiation (PBI) for Women with Stage 0, I, or II Breast Cancer

STRATIFICATION

- Disease Stage (DCIS only; invasive and node negative; invasive with 1-3 positive nodes)
- Menopausal Status (premenopausal, postmenopausal)
- Hormone Receptor Status (ER-positive and/or PgR-positive; ER-negative and PgR-negative)
- Intention to Receive Chemotherapy (yes or no)

RANDOMIZATION

GROUP 1*

Whole Breast Irradiation (WBI)

50 Gy (2.0 Gy/fraction) or
50.4 Gy (1.8 Gy/fraction)
to whole breast,
followed by optional boost**
to 60.0 Gy – 66.6 Gy

GROUP 2*

Partial Breast Irradiation (PBI)***

34 Gy in 3.4 Gy fractions using
multi-catheter brachytherapy

or

34 Gy in 3.4 Gy fractions using
MammoSite® balloon catheter or
other intracavitary device†

or

38.5 Gy in 3.85 Gy fractions using
3D conformal external beam radiation

For all PBI techniques: RT given to tissue surrounding lumpectomy cavity only, BID (with a fraction separation of at least 6 hours), for a total of 10 treatments given on 5 days over a period of 5 to 10 days.

ASTRO
ANNUAL MEETING
SCIENCE BASED, PATIENT DRIVEN

53rd ANNUAL MEETING
Meeting Dates: October 2-6, 2011 | Exhibition Dates: October 2-4, 2011
MIAMI BEACH CONVENTION CENTER | MIAMI BEACH, FLA.
www.astro.org/annualmeeting

NSABP B-39/RTOG0413

3877 patients are enrolled (90.2% of target accrual);
1391 APBI(38.5/ 3.8 bid)
1094 WBI (50/1.8 - 2)

Mean follow-up time of 42.6 months

The rates of fibrosis-cosmesis and fibrosis-deep connective tissue toxicities are:
Grade 2 =12%,
Grade 3 = 3%,
Grade 4 = 0%

3-D conformal APBI toxicity rates acceptably low.

icity, and QOL outcomes can be accurately assessed.

Annals of Oncology 22: 1736–1747, 2011

Strategies for subtypes—dealing with the diversity of breast cancer: highlights of the St Gallen International Expert Consensus on the Primary Therapy of Early Breast Cancer 2011

A. Goldhirsch[1]*, W. C. Wood[2], A. S. Co
members[†]

The NEW ENGLAND JOURNAL of MEDICINE

There was a very clear statement of the panel **endorsing accelerated whole breast RT** (92% yes, 4% no) following a recent report on a randomised trial with sufficient follow-up of patients treated with this new method [4].

The panel was divided whether standard RT should be the preferred option for extensive vascular invasion (34% yes, 33% no).

EBM GUIDELINE

Int. J. Radiation Oncology Biol. Phys., Vol. 81, No. 1, pp. 59–68, 2011

0360-3016/$–see front matter

ELSEVIER

doi:10.1016/j.ijrobp.2010.04.042

CLINICAL INVESTIGATION **Breast**

FRACTIONATION FOR WHOLE BREAST IRRADIATION: AN AMERICAN SOCIETY FOR RADIATION ONCOLOGY (ASTRO) EVIDENCE-BASED GUIDELINE

Benjamin D. Smith, M.D.,* Soren M. Bentzen, Ph.D., D.Sc.,† Candace R. Correa, M.D.,‡ Carol A. Hahn, M.D.,§ Patricia H. Hardenbergh, M.D.,¶ Geoffrey S. Ibbott, Ph.D.,‖ Beryl McCormick, M.D., FACR.,# Julie R. McQueen, CHES., RHEd.,** Lori J. Pierce, M.D.,†† Simon N. Powell, M.D., Ph.D.,# Abram Recht, M.D.,§§ Alphonse G. Taghian, M.D., Ph.D.,¶¶ Frank A. Vicini, M.D., FACR.,‖‖ Julia R. White, M.D.,## and Bruce G. Haffty, M.D.***

Table 1. Evidence supports the equivalence of hypofractionated whole breast irradiation with conventionally fractionated whole breast irradiation for patients who satisfy all of these criteria*

1. Patient is 50 years or older at diagnosis.
2. Pathologic stage is T1–2 N0 and patient has been treated with breast- conserving surgery.
3. Patient has not been treated with systemic chemotherapy.
4. Within the breast along the central axis, the minimum dose is no less than 93% and maximum dose is no greater than 107% of the prescription dose (±7%;) (as calculated with 2-dimensional treatment planning without heterogeneity corrections).

and late toxicities (74, 75). Therefore, the task force recommended that the minimum dose should be no less than 93% and that the maximum dose should be no greater than 107% of the prescription dose (±7%) in the central-axis plane, as calculated using two-dimensional treatment planning without tissue heterogeneity corrections, in accordance with planning guidelines from the published randomized trials (Table 3) (10, 16–20, 65). However, the task force encourages the use of three-dimensional planning techniques in all patients to minimize dose inhomogeneity and reduce toxicity

Thus, although the available literature does not indicate a deleterious effect of HF-WBI on cardiovascular health, the task force members believed that a small but potentially clinically significant effect could not be ruled out at this time. Because of this lingering uncertainty, the task force recommended that HF-WBI be used primarily when the heart can be excluded from the treatment fields without compromising coverage of the primary tumor site.

TOSSICITA' CARDIACA

Radiotherapy and Oncology 100 (2011) 157–159

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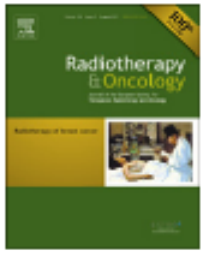
Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com



Editorial

Radiation-induced heart morbidity after adjuvant radiotherapy of early breast cancer – Is it still an issue?

Birgitte Offersen*, Inger Højris, Marie Overgaard

Department of Oncology, Aarhus University Hospital, Aarhus C, Denmark

OAR CUORE

QUANTEC

Int. J. Radiation Oncology Biol. Phys., Vol. 76, No. 3, Supplement, pp. S77–S85, 2010

0360-3016/10/$–see front matter

ELSEVIER

doi:10.1016/j.ijrobp.2009.04.093

QUANTEC: ORGAN SPECIFIC PAPER **Thorax: Heart**

RADIATION DOSE–VOLUME EFFECTS IN THE HEART

GIOVANNA GAGLIARDI, PH.D.,* LOUIS S. CONSTINE, M.D.,† VITALI MOISEENKO, PH.D.,‡
CANDACE CORREA, M.D.,§ LORI J. PIERCE, M.D.,§ AARON M. ALLEN, M.D.,‖
AND LAWRENCE B. MARKS, M.D.¶

* Department of Medical Physics, Karolinska University Hospital and Karolinska Institute, Stockholm, Sweden; † Department of Radiation Oncology, University of Rochester Cancer Center, Rochester, NY; ‡ Vancouver Cancer Centre, British Columbia Cancer Agency, Vancouver, BC, Canada; § Department of Radiation Oncology, University of Michigan, Ann Arbor, MI; ‖ Department of Radiation Oncology, Dana- Farber Cancer Institute, Boston, MA; Rabin Medical Center Petach Tikvah, Israel ; and ¶ Department of Radiation Oncology, University of North Carolina, Chapel Hill, NC

Uncertainties remain regarding which region of the heart is functionally most important for RT-induced toxicities.

CONTORNAZIONE OAR CUORE

Int. J. Radiation Oncology Biol. Phys., Vol. 79, No. 1, pp. 10–18, 2011

0360-3016/$–see front matter

ELSEVIER

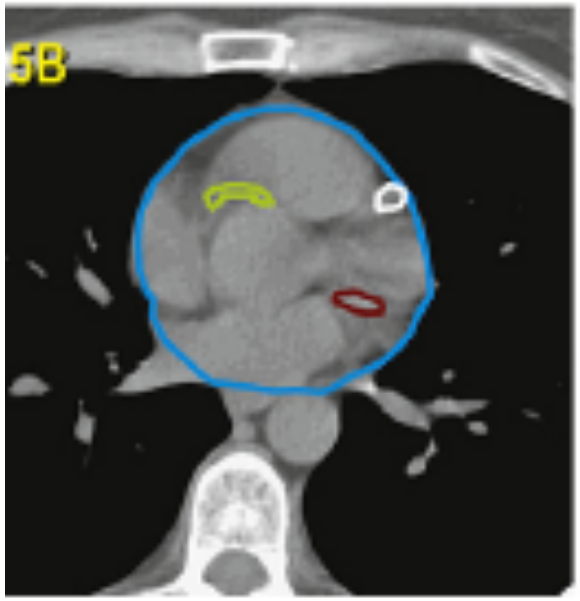
doi:10.1016/j.ijrobp.2009.10.058

CLINICAL INVESTIGATION **Breast**

DEVELOPMENT AND VALIDATION OF A HEART ATLAS TO STUDY CARDIAC EXPOSURE TO RADIATION FOLLOWING TREATMENT FOR BREAST CANCER

Mary Feng, M.D.,* Jean M. Moran, Ph.D.,* Todd Koelling, M.D.,† Aamer Chughtai, M.D.,‡ June L. Chan, M.D.,* Laura Freedman, M.D.,* James A. Hayman, M.D.,* Reshma Jagsi, M.D., D. Phil.,* Shruti Jolly, M.D.,* Janice Larouere, M.D.,* Julie Soriano, M.D.,* Robin Marsh, C.M.D.,* and Lori J. Pierce, M.D.*

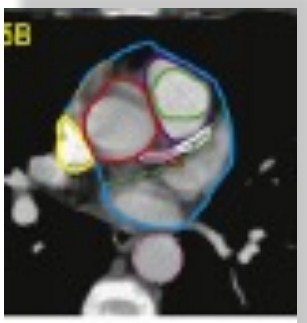
Department of *Radiation Oncology; Internal Medicine, Division of †Cardiology and; ‡Radiology, University of Michigan Medical Center, Ann Arbor, Michigan

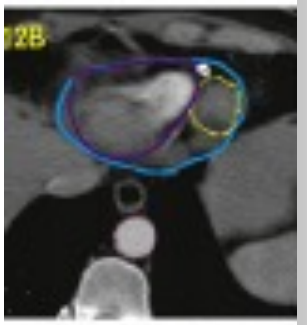


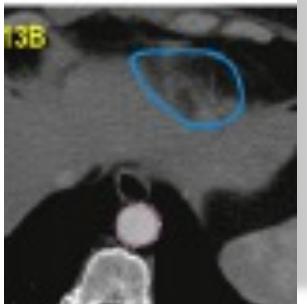
RIGHT CORONARY A

LEFT ANTERIOR DESCENDING A

LEFT CIRCUMFLEX A







TOSSICITA' CARDIACA

Contents lists available at ScienceDirect

Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com

Original article

Cardiac dose estimates from Danish and Swedish breast cancer radiotherapy during 1977–2001

Carolyn W. Taylor [a,*], Dorthe Brønnum [b], Sarah C. Darby [a], Giovanna Gagliardi [c], Per Hall [d], Maj-Britt Jensen [e], Paul McGale [a], Andrew Nisbet [f], Marianne Ewertz [g]

Table 1
Estimated cardiac doses from common breast cancer radiotherapy regimens used to irradiate the breast, chest wall and internal mammary nodes in Denmark from 1977 to 2001.

Description	Usual given or target dose (Gy)[A]	Usual dose per fraction (Gy)	Field arrangement	Usual beam energy	Number women	Heart				LAD[D]				Circ[F]	
						Mean dose (Gy)				Mean dose (Gy)				Mean dose (Gy)	
														Left	Right
Regimens common during 1977–1981[G]															
Lateral thorax (and supraclavicular fossa) field (a)[H,I]														5	0.5
Electron field to chest wall and internal															
Wide tangential														5	1.0
McWhi															4
Lateral t															1
Orthovol															
Regimens															
Lateral th											1.1	18.1	1.2	5.3	8.9	2.0	0.7
Electron fi															
Electron fi															
Tangential				6–10 MV	6	6.0	1.7	9.2	1.9	23.5	1.4	41.6	1.7	2.2	3.2	3.0	1.1
Regimens c															
Tangential p		2.00	Tangential pair	6–10 MV	132	6.1	1.7	11.9	1.9	24.0	1.4	58.5	1.5	2.1	3.3	3.0	1.1
Electron scar	10.8	2.16	Direct oblique	8–15 MeV													
Tangential pa breast (midline) (f)	48.0	2.00	Tangential pair	6–10 MV	59	6.3	1.8	12.4	1.9	24.8	1.5	62.8	1.6	2.3	3.4	3.0	1.1
Tangential scar boost (h)	10.0	2.00	Tangential pair	6–25 MV													
Oblique electron field to breast/chest wall (i)	51.9	2.16	Oblique anterior	8–15 MeV	27	4.7	2.1	7.2	2.6	17.6	0.6	35.2	0.6	2.7	6.4	2.0	0.6
Electron scar boost (g)	10.8	2.16	Direct oblique	8–18 MeV													
Oblique electron field to breast/chest wall (i)	51.9	2.16	Oblique anterior	8–15 MeV	15	4.4	2.0	6.0	2.5	16.2	0.6	26.1	0.9	2.6	6.2	1.9	0.6
Wide tangential pair to breast/chest wall (b)	48.0	2.00	Wide tangential pair	6–18 MV	10	10.3	3.3	18.1	4.2	29.1	1.9	59.9	1.7	3.9	13.2	4.3	1.2
Electron scar boost (g)	10.8	2.16	Direct oblique	6–18 MeV													

Among irradiated women mean dose to the whole heart was 6.3 Gy for left-sided tumours and 2.7 Gy for right-sided tumours.

TOSSICITA' CARDIACA

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journal homepage: www.thegreenjournal.com

Original article

Incidence of heart disease in 35,000 women treated with radiotherapy for breast cancer in Denmark and Sweden

n [c], Nils-Olof Bengtsson [d], Anna M. Bennet [b],

Overall, the number of deaths from heart disease in the study population was lower than the number expected from national death rates (ratio of observed to expected deaths [O/E] 0.90 [0.87–0.94])

Mortality was similar in irradiated women with left-sided and right-sided tumours

The absolute increase in risk for heart morbidity for a left-sided versus right-sided patient were in the order of:
0.4% for acute myocardial infarction,
0.3% for angina,
0.1% for acute pericarditis,
0.2% for valvular heart disease and
0.8% for all heart diseases (calculations based on the whole cohort).

Table 4
Left-sided versus right-sided breast cancer: incidence of all heart disease in irradiated women by various characteristics. Analysis based on first diagnosis of any type of heart disease after diagnosis of breast cancer.

Characteristic	Number of events left/right	Incidence ratio left vs. right (95% CI)	*p* for difference
Country			
Denmark	1357/1211	1.08 (1.00–1.17)	
Sweden	918/805	1.08 (0.99–1.19)	1.0
Year of breast cancer diagnosis			
1976–1989	1167/1055	1.08 (0.99–1.17)	
1990–2006	1108/961	1.09 (1.00–1.19)	0.9
Age at diagnosis of breast cancer			
<60 yr	825/733	1.12 (1.01–1.24)	
60–79 yr	1450/1283	1.06 (0.98–1.15)	0.4
Breast-conserving surgery			
Yes	949/830	1.10 (1.00–1.21)	
No/unknown	1326/1186	1.07 (0.99–1.16)	0.6
Hormonal therapy			
Yes	732/642	1.02 (0.91–1.13)	
No/unknown	1543/1374	1.11 (1.03–1.19)	0.2
Chemotherapy			
Yes	283/247	1.15 (0.96–1.36)	
No/unknown	1992/1769	1.07 (1.01–1.15)	0.5
Ischaemic heart disease prior to breast cancer			
Yes	142/130	1.58 (1.19–2.10)	
No/unknown	2133/1886	1.08 (1.01–1.15)	**0.01**
Other heart disease prior to breast cancer			
Yes	149/147	0.95 (0.73–1.24)	
No/unknown	2126/1869	1.09 (1.03–1.16)	0.3

….CONCLUDENDO……

TOSSICITA' CARDIACA

For women being treated today, the extent to which they will be at risk of radiation-related heart disease in the future depends on their cardiac exposure.

…half of left-sided patients part of the heart still received >20 Gy

Further research is needed to characterise the consequences of radiation exposure of specific regions and structures of the heart in terms of increased risk of heart disease many years later.

Only when such information is available will it be possible to formulate appropriate, evidence-based, limits on cardiac dose.

Paul McGale R&O 2011