



*Attualità nella terapia integrata
locoregionale delle neoplasie
delle vie aeree digestive
superiori*

Taranto, 12-14 gennaio 2012

I RITRATTAMENTI

Almalina Bacigalupo, Renzo Corvò
Genova

DESPITE TREATMENT INTENSIFICATION
LOCOREGIONAL RECURRENCES DEVELOP
IN 18 % TO 20% OF PTS AFTER CRTT FOR
LARYNX PRESERVATION
OR POSTOPERATIVE CRTT
(Forastiere, Bernier, Cooper)

IN 17% TO 33% AFTER DEFINITIVE CRTT
FOR UNRESECTABLE DISEASE
(Brockstein, Denis)

SECOND HN PRIMARY TUMORS 1% per year
IN PTS PREVIOUSLY TREATED WITH RT
ALONE
(COOPER- RTOG EXPERIENCE)

RATIONALE FOR RE-TREATMENT

Recurrent or second primary tumors potential source of *morbidity* (pain, bleeding, infection..) and *death*

(Coatesworth)

So achieving local control in pts with recurrent disease may impact **S**

Come è cambiata l'attenzione al problema

...»After modern primary radical radiotherapy for NPC, local failures can seldom be salvage...and morbidity is significant and outweighs the benefit.»...

Teo PML, Int J Radiat Oncol Biol Phys 1998

www.PubMed.com: REIRRADIATION HEAD NECK

124 lavori

• 1980-2005 57 lavori

• 2006-2011 67 lavori

• 2006 5 lavori

• 2007 5

• 2008 12

• 2009 14

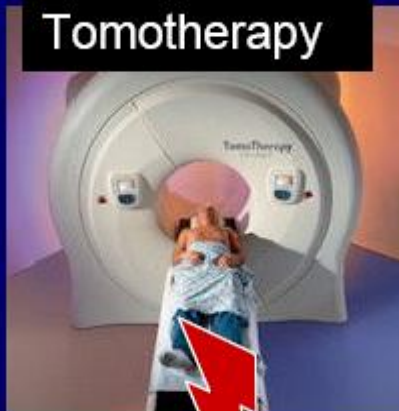
• 2010 14

• 2011 17

Protons & Carbon



Tomotherapy



On-board imaging



Multi-leaf collimator



Intensity modulated RT (IMRT)



Gamma-knife



Cyberknife

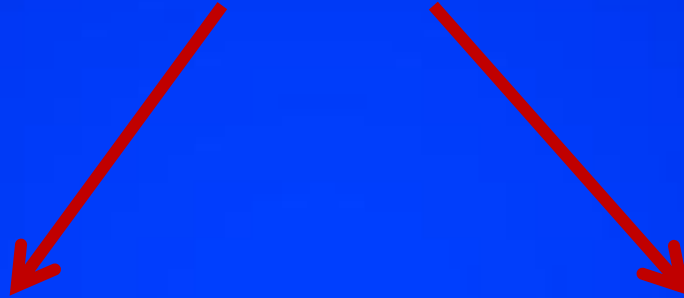
Image guided RT (IGRT)



Diverse tecniche, diversi
schemi di trattamento,
associazioni con CT differenti

RISULTATI ETEROGENEI

Scopo della re-irradiazione



RUOLO PALLIATIVO

RUOLO CURATIVO

(buon PS, intervallo libero di malattia, no mts
dosaggio RT adeguato)

PATIENT EVALUATION AND SELECTION FOR RE-TREATMENT

**HEAD AND NECK ONCOLOGY TEAM EQUIPPED
WITH RESOURCES AND EXPERIENCE TO MANAGE
COMPLEXITIES AND TOXICITIES OF RE-
TREATMENT IS RECOMMENDED**

Fattori legati al paziente

Performance status	Buon Performance > Scarso Performance	(Shaefer 2000)
Età	Pazienti giovani > Pazienti anziani	(Shaefer 2000)
Comorbidity'	Poche/Nessuna comorbidity > Molte comorbidity Charlson Index e Adult Comorbidity Evaluation-27 (ACE-27)	(Tanvetyanon 2009)
Aspettativa di vita		
Sequela trattamento precedente	Fibrosi, stenosi carotidea, disfagia, osteoradionecrosi , xerostomia < no sequela	
Disfunzione d'organo	Pazienti con disfunzione < Pazienti senza disfunzione (Alimentazione enterale, tracheotomia, alterazione dei tessuti molli come cicatrice chirurgica non guarita, fistole o osteoradionecrosi)	(Tanvetyanon 2009)

Fattori legati al tumore

Sede	Rinofaringe> Altri distretti Ipofaringe< Altri distretti Ricaduta in campo/fuori campo/marginale	(Mendenhall 2008, Unger 2010, Duprez 2009)
Istologia NECESSARIA!	Ca non squamosi> Ca squamoso	(Lee 2007)
Stadio	rT1-rT2>rT3-rT4 ESCLUSIONE DI MTS! CT/RMN/TCPET	(Duprez 2009, Tanvetyanon 2009)
Volume	Volumi piccoli>Volumi estesi	(Tanvetyanon 2009)
Secondo tumore	Secondo tumore>Recidiva locale	(Kasperts 2005)
N. recidive prima della re-RT	Elevato n. recidive<prima recidiva	(Lee 2007)

Fattori legati al trattamento

Trattamento iniziale	Chir +RT>RT	(Benchalal 1995, Levendag 1992)
Dose alla re-RT	Dose elevata(>46 Gy) >Bassa dose	(Salama 2006, Platteaux 2010, Shaefer 2000, Lee 2007, Sulman 2009, Tanvetyanon 2009, Hungar 2010)
Tecnica RT	IMRT > non IMRT	(Lee 2007)
Chirurgia	Asportazione chir.> Inoperabilità	Biaglioli 2007, Salama 2006, Platteaux 2010, Lee 2007, Duprez 2009, Unger 2010)
Intervallo tra RT	Intervallo lungo (6 mesi-1aa) >Intervallo breve	(Duprez 2009, Sulman 2009, Tanvetyanon 2009)
Risposta al trattamento	Risposta completa>Risposta non completa	(Schaefer 2007, Biaglioli 2007)
Associazione a CT	CT induzione<No CT induzione	(Biaglioli 2007)
Tipo di CT	CDDP trisettimanale>Carboplatino sett Paclitaxel, CDDP e Gemcitabina	(Salama 2005)

Alterio D, 2011



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doi:10.1016/j.ijrobp.2011.01.004

CLINICAL INVESTIGATION

Head and Neck

**REIRRADIATION FOR HEAD-AND-NECK CANCER: DELICATE BALANCE BETWEEN
EFFECTIVENESS AND TOXICITY**

FRANK HOEBERS, M.D., PH.D.,^{*#} WILMA HEEMSBERGEN, PH.D.,^{*†} SUZANNE MOOR, R.T.T.,^{*}
MARTA LOPEZ, PH.D.,[†] MARTIN KLOP, M.D., PH.D.,[‡] MARGOT TESSELAAR, M.D., PH.D.,[§]
AND COEN RASCH, M.D., PH.D.^{*}

Departments of ^{*}Radiation Oncology, [†]Bioinformatics and Statistics, [‡]Head and Neck Oncology and Surgery, and [§]Medical Oncology,
The Netherlands Cancer Institute / Antoni van Leeuwenhoek Hospital, Amsterdam, The Netherlands, [#]Maastricht University Medical
Center, Department of Radiation Oncology (MAASTRO clinic), GROW School for Oncology and Developmental Biology, Maastricht,
The Netherlands

CONCLUSIONS: *RE-RT is associated with poor S rates of 13-20% in pts with inoperable disease. However for this subgroup, no other curative options are available. For pts who receive re-RT as an adjunct to surgical resection S was 40%. Serious toxicity 45% at 5 y*

1998-2008 103 pts (70% CTRT)

Prognostic Factors for Survival After Salvage Reirradiation of Head and Neck Cancer

Tawee Tanvetyanon, Tapan Padhya, Judith McCaffrey, Weiwei Zhu, David Boulware, Ronald DeConti, and Andrea Trotti

«Because of toxicities there is a strong rationale to refine *pts selection* to undergo reirradiation....»

POTENTIAL PROGNOSTIC FACTORS

Co-morbidity (Charlson index and Adult Comorbidity Evaluation-27)

Pre-existing organ dysfunction (feeding tube dependency, tracheostomy, soft tissue defect)

MEDIAN OS WAS **5.5 MONTHS** IF BOTH PRESENTED VS **59 MONTHS** WITH NEITHER ORGAN DYSFUNCTION NOR CO-MORBIDITY

OTHER INDEPENDENT PROGNOSTIC FACTORS: INTERVAL FROM PREVIOUS RT, RECURRENT T STAGE, TUMOR BULK AT REIRRADIATION; REIRRADIATION DOSE

RESECTABLE DISEASE RECURRENCE post-operative reirradiation

Surgical resection standard of care



Long term disease control in 25 to 45%

RISK FACTORS:

- Gross residual disease
- Positive margins
- Extracapsular extension
- Perineural and/or vascular invasion

(Bachar 2010, Parsons 1995)

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ORIGINAL REPORT

Randomized Trial of Postoperative Reirradiation Combined With Chemotherapy After Salvage Surgery Compared With Salvage Surgery Alone in Head and Neck Carcinoma

François Janot, Dominique de Raucourt, Ellen Benhamou, Christophe Ferron, Gilles Dolivet, René-Jean Bensadoun, Marc Hamoir, Bernard Géry, Morbize Julieron, Marine Castaing, Etienne Bardet, Vincent Grégoire, and Jean Bourhis

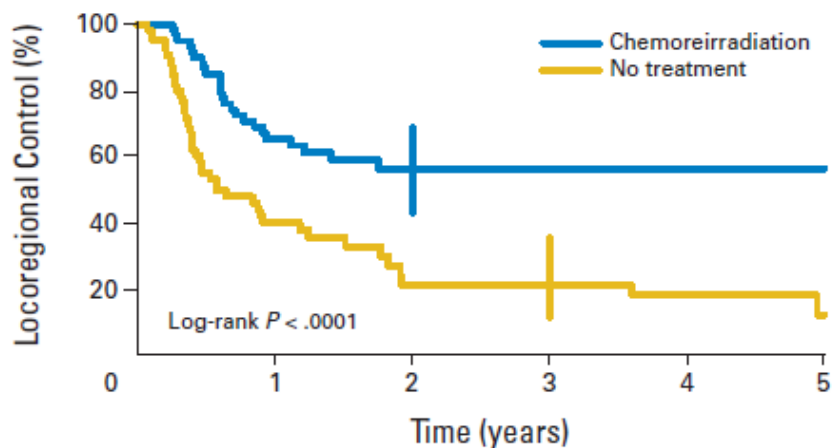
1999-2005

130 pts

RT 60 Gy + CT (5-FU +Hydroxyurea)

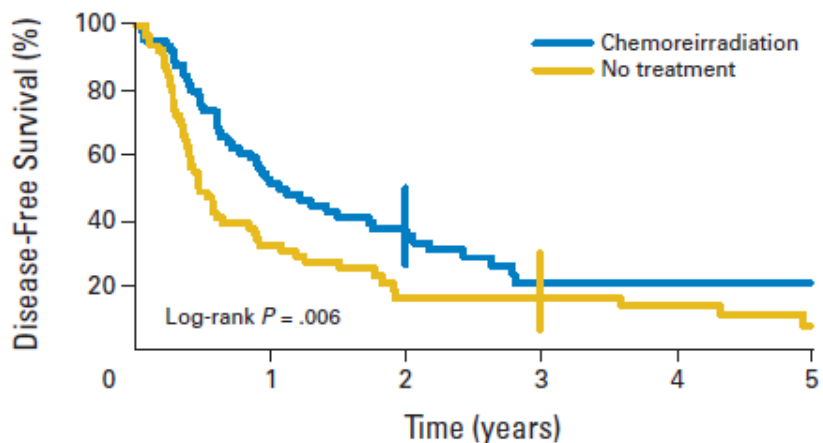
VS

WAIT AND SEE



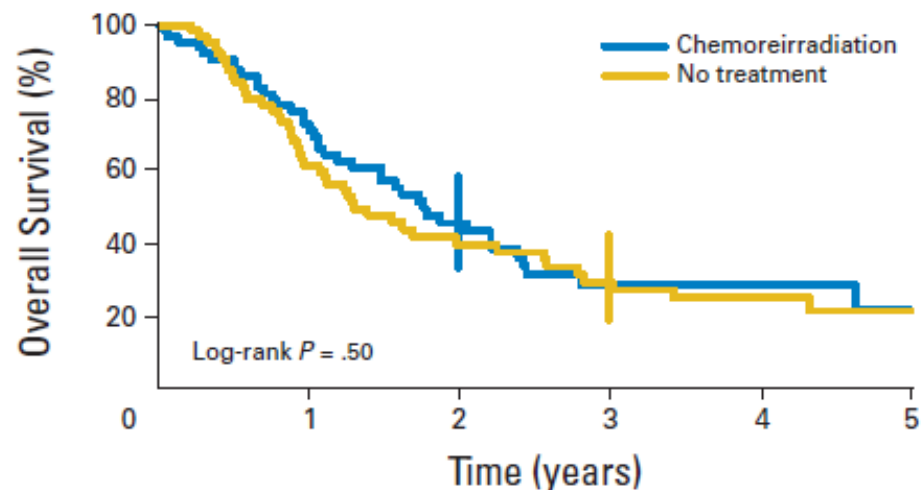
No. of patients at risk

65	35	18	9	6	3
65	19	7	7	5	2



No. of patients at risk

65	32	18	7	5	3
65	19	7	7	5	2



No. of patients at risk

65	43	21	9	6	3
65	36	19	14	7	3

Table 3. Late Toxicity at 1 and 2 Years After Random Assignment

Toxicity	RT Arm (n = 42; 1 missing)		WS Arm (n = 33; 3 missing)	
	No.	%	No.	%
Toxicity at 12 and 12.5 months after random assignment, RTOG grade \geq 3				
Mucositis	4	10	1	3
Skin	0	0	0	0
Subcutaneous tissues	6	14	3	9
Larynx	0	0	0	0
Osteoradionecrosis	1	2		
Trismus	3	7	2	6
Pharyngeal stenosis	1	2	0	0
No. of patients	11	26	3	9
Toxicity at 24 months after random assignment, RTOG grade \geq 3*				
Mucositis	1	6	0	0
Skin	1	6	0	0
Subcutaneous tissues	4	22	1	5
Larynx	1	6	0	0
Trismus	5	28	2	10
Osteoradionecrosis	3	17	0	0
Pharyngeal stenosis	1	5.5	0	0
No. of patients	7	39	2	11



doi:10.1016/j.ijrobp.2006.08.038

CLINICAL INVESTIGATION

Head and Neck

INTRAOPERATIVE RADIATION THERAPY FOR RECURRENT HEAD-AND-NECK CANCER: THE UCSF EXPERIENCE

ALLEN M. CHEN, M.D.,* M. KARA BUCCI, M.D.,* MARK I. SINGER, M.D.,† JOAQUIN GARCIA, M.D.,‡
MICHAEL J. KAPLAN, M.D.,§ ALBERT S. CHAN, C.M.D., R.T.T.,* AND THEODORE L. PHILLIPS, M.D.*

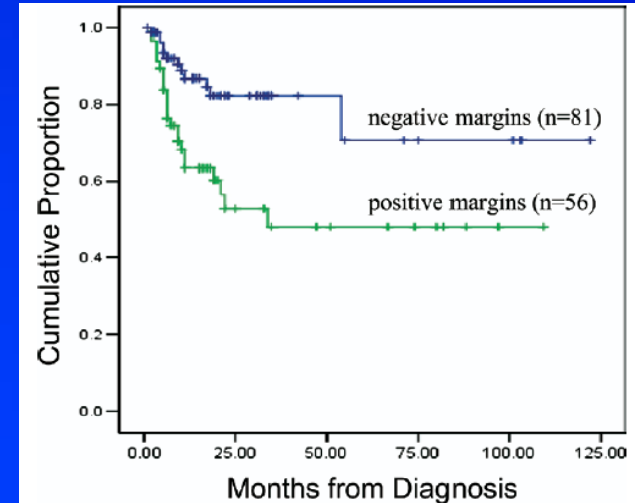
Departments of *Radiation Oncology, †Otolaryngology, Head and Neck Surgery, and ‡Pathology, University of California, San Francisco, Comprehensive Cancer Center, San Francisco, CA; §Department of Otolaryngology, Head and Neck Surgery, Stanford University School of Medicine, Stanford, CA

- ★ Linear accelerator /mobile electron unit
- ★ Single fraction median dose 15Gy (range 10-18 Gy)

1991-2004 137 PTS



RESULTS



3-years in-field control 61%

3-year rates locoregional control 51%

distant metastasis free S 46%

OS 36%

COMPLICATIONS: wound infections (4pts), orocutaneous fistula (2 pts), flap necrosis(1 pt), trismus (1 pt), neuropathy (1pt)

UNRESECTABLE DISEASE RECURRENCE

OTHER SITES EXCEPT NASOPHARYNX

CT+ Biologic Agents (EXTREME STUDY)

Response rate 36%

Median S 10.1 months

OR

RE-IRRADIATION WITH CURATIVE INTENT

+/-CT

Table 1. Results of Selected CRRT Platforms

Study	No. of Patients	RT	CTX	Acute Toxicity (grades 3-5)	Late Toxicity (grades 3-5)	LRC	DFS/EFS/PFS	OS
RTOG 96-10 ^{38,49}	86 (81 eligible)	60 Gy (1.5 Gy BID) Alternating weeks	5-FU 300 mg/m ² IVB 30 min before HU 1.5 g 2 hours before Both given before 2 nd fraction	Mucositis: 19% Pharyngeal: 17% Neutropenia: 26%	Cumulative: 12.3%	—	—	1 yr: 42.6% 2 yr: 17.3%
RTOG 99-11 ⁴⁷	105 (99 eligible)	60 Gy (1.5 Gy BID) Alternating weeks	CDDP 15 mg/m ² IV qd with RT Paclitaxel 20 mg/m ² IV qd with RT G-CSF d 6-13 of each cycle	Leukopenia: 30% Anemia: 21% GI toxicity: 21% Fatalities: 5%	Osteoradionecrosis: 4% Carotid hemorrhage: 2% (2/105)	—	1 yr: 35%	1 yr: 50.2% 2 yr: 25.9%
Kramer ⁴⁵ 2005	38	42-60 Gy (1.5 Gy BID x 1 wk then 1.2 BID) Modified to: (1.5 Gy BID) Alternating weeks	CDDP 12-15 mg/m ² IV qd Paclitaxel 15-20 mg/m ² IV qd Agents delivered with RT G-CSF d 6-13 of each cycle	Neutropenia: 18% Mucositis: 5% Pain: 11% Dehydration: 11%	Osteoradionecrosis: 5% Temporal lobe necrosis: 5% Fistula formation: 5% Carotid hemorrhage: 5%	37%	—	1 yr: 50% 2 yr: 35%
Chmura ⁴³ 2003	41	60-75 Gy (1.5 Gy BID) Alternating weeks	5-FU: 600-800 mg/m ² /d CI d 1-5 HU: 500-1,000 mg PO BID d 1-5 Paclitaxel: 5-25 mg/m ² /d CI Agents delivered with RT G-CSF d 7-13 of each cycle	—	Cumulative: 32%	4 yr: 54%	4 yr: 57%	4 yr: 22%
Brockstein ⁴⁴ 1998	54	60-75 Gy (1.5 Gy BID) Alternating weeks	5-FU: 600-800 mg/m ² /d CI d 1-5 HU: 500-1,000 mg PO BID d 1-5 Paclitaxel: 5-25 mg/m ² /d CI All agents delivered with RT G-CSF d7-13 of each cycle	Mucositis: 54% Dermatitis: 37% Diarrhea: 9% Neutropenia: 18% Leukopenia: 22%	—	—	2 yr: 32%	2 yr: 32%
Milano ⁴² 2005	29 (subset of 72 poor prognosis pts)	60-75 Gy (1.5 Gy BID) Alternating weeks	5-FU: 600 mg/m ² /d CI d 1-5 Paclitaxel: 100 mg/m ² d 1 Gem: 50-300 mg/m ² d 1 All agents delivered with RT	Mucositis: 77% Dermatitis: 46% Anemia: 12% Leukopenia: 21% Infection: 24%	Cumulative: 28%	5 yr: 54.5%	5 yr: 40.5%	5 yr: 34.5%
Salama ⁴¹ 2006	115	60-75 Gy (2 Gy qd and 1.5 Gy BID)	5-FU HU Gem, CPT-11, CDDP, Paclitaxel All agents delivered with RT	—	Carotid hemorrhage: 5% Osteoradionecrosis: 11%	3 yr: 51%	3 yr: 33%	3 yr: 22%

Abbreviations: RT, radiation; BID, twice daily with 6-hour interval between doses; CTX, chemotherapy; 5-FU, 5-fluorouracil; CPT-11, Irinotecan; G-CSF, granulocyte colony-stimulating factor; HU, hydroxyurea; CDDP, cisplatin; Gem, gemcitabine; CI, continuous infusion; PO, by mouth; Qd, daily; LRC, locoregional control; PFS, progression-free survival; DFS, disease-free survival; OS, overall survival; GI, gastrointestinal.

FINAL REPORT OF RTOG 9610, A MULTI-INSTITUTIONAL TRIAL OF REIRRADIATION AND CHEMOTHERAPY FOR UNRESECTABLE RECURRENT SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK

Sharon A. Spencer, MD,¹ Jonathan Harris, MS,² Richard H. Wheeler, MD,³ Mitchell Machtay, MD,⁴ Christopher Schultz, MD,⁵ William Spanos, MD,⁶ Marvin Rotman, MD,⁷ Ruby Meredith, MD,¹ Kie-Kian Ang, MD⁸

HEAD & NECK—DOI 10.1002/hed March 2008

86 pts

Concurrent Hydroxyurea, 5-FU / RT 60 Gy at 1.5 Gy twice-daily fractions

GRADE 3 and 4 late toxicities were 19.4% and 3%
Related treatment death: 6pts

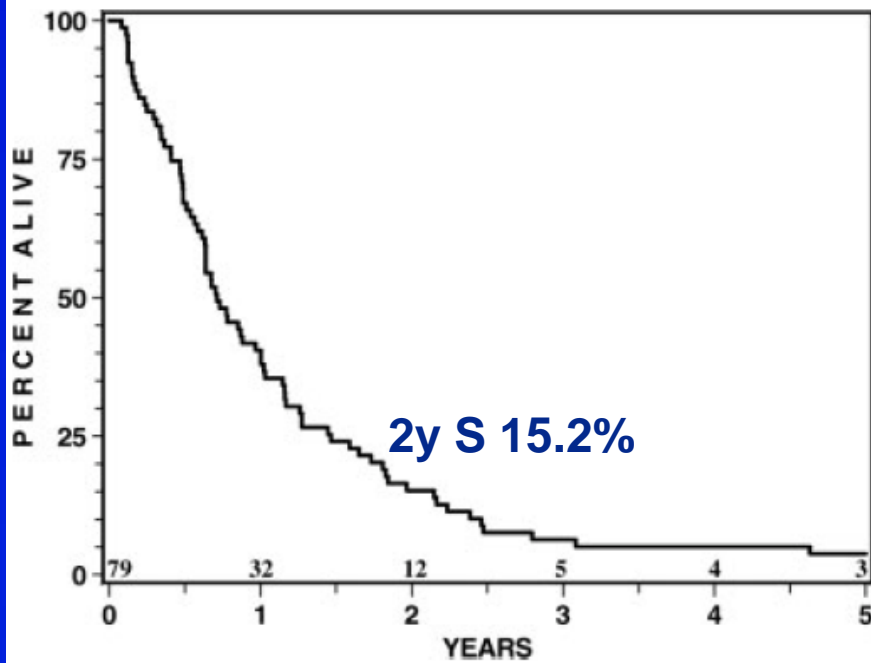


FIGURE 1. Overall survival.

**MEDIAN S
8.5 months**

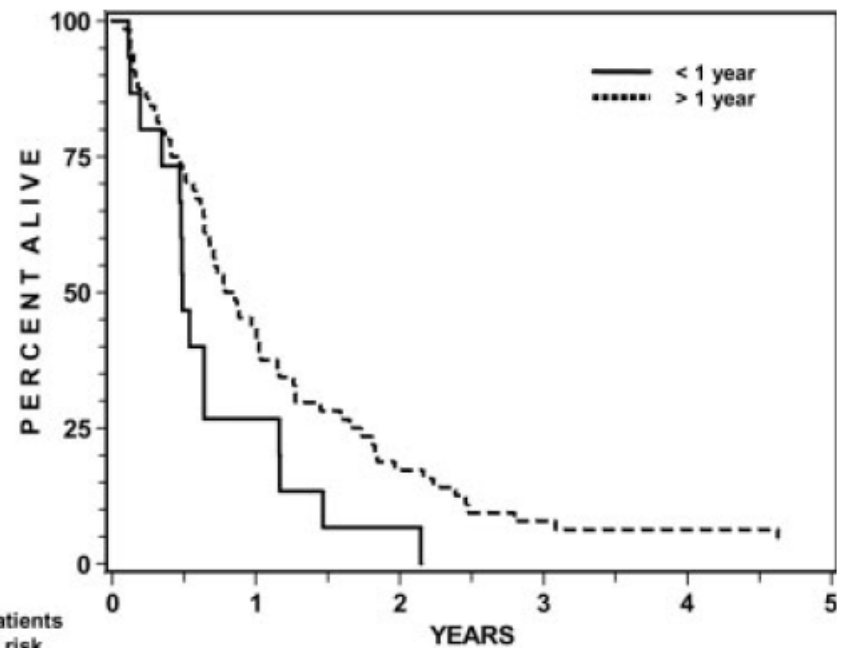


FIGURE 2. Survival by time from prior radiotherapy.

Phase II Study of Low-Dose Paclitaxel and Cisplatin in Combination With Split-Course Concomitant Twice-Daily Reirradiation in Recurrent Squamous Cell Carcinoma of the Head and Neck: Results of Radiation Therapy Oncology Group Protocol 9911

Concurrent CDDP, PACLITAXEL / RT 60 Gy at 1.5 Gy twice-daily fractions

PTS completed CT 74%

GRADE4 ACUTE TOXICITY 28%

GRADE 4 ACUTE HEMATOLOGIC TOXICITY 21%

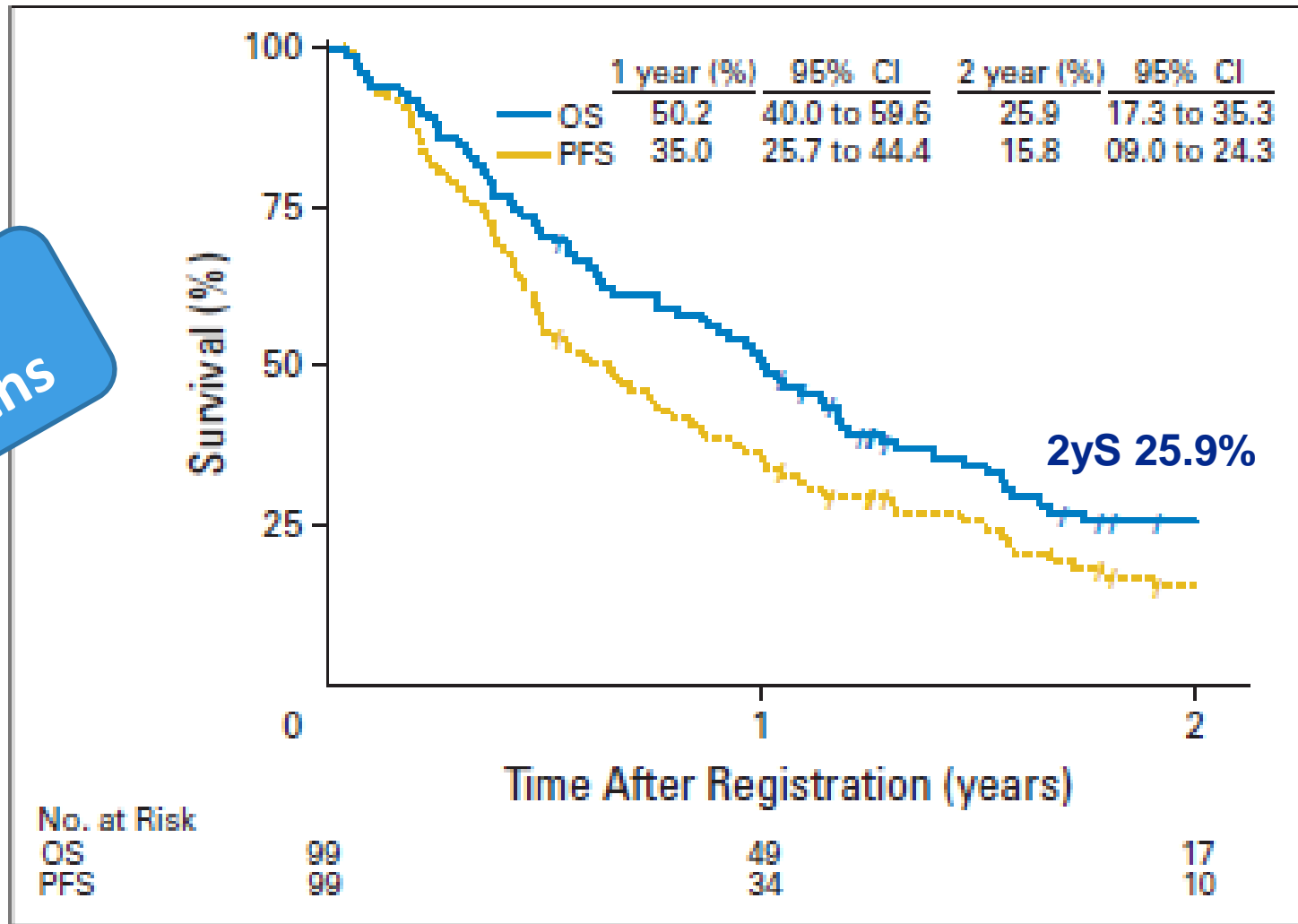
TREATMENT RELATED DEATHS 8%

105 pts

Table 3. Late Radiotherapy Toxicities (n = 83)

Toxicity	Grade		
	3	4	5
Skin	1	2	0
Mucous membrane	0	6	0
Subcutaneous tissue	5	4	1
Salivary gland	6	0	0
Esophagus/pharynx	12	3	0
Larynx	1	1	0
Bone	0	4	0
Joint	2	0	0
Other	5	1	2
Worst overall	14	14	3
%	16.9	16.9	3.6

Median S
12.1 months



HOW MUCH?

SALAMA et al (2006):

3-year **OS** 30% and
Locoregional control 56%



>58Gy

3-year **OS** 6% and
Locoregional control 33%



<58Gy



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CLINICAL INVESTIGATION

Head and Neck

THE PATTERN OF FAILURE AFTER REIRRADIATION OF RECURRENT SQUAMOUS CELL HEAD AND NECK CANCER: IMPLICATIONS FOR DEFINING THE TARGETS

ARON POPOVTZER, M.D.,* IRIS GLUCK, M.D.,* DOUGLAS B. CHEPEHA, M.D.,[†]
THEODOROS N. TEKNOS, M.D.,[†] JEFFREY S. MOYER, M.D.,[†] MARK E. PRINCE, M.D.,[†]
CAROL R. BRADFORD, M.D.,[†] AND AVRAHAM EISBRUCH, M.D.*

*Departments of Radiation Oncology and [†]Otorhinolaryngology—Head and Neck Surgery, University of Michigan, Ann Arbor, MI

CONCLUSIONS: Almost all LRFs occurred within reirradiated rGTVs despite avoiding prophylactic RT. These results support confining the re-RT targets to the rGTVs to reduce reirradiated tissue volumes

A review on re-irradiation for recurrent and second primary head and neck cancer

Oral Oncology (2005) 41, 225–243

N. Kasperts, B. Slotman, C.R. Leemans, J.A. Langendijk *

BRACHYTHERAPY +/-CT or hyperthermia

LDR (Iridio 192)

HDR

Most oral cavity/oropharynx

5 years LOCAL CONTROL RATES BETWEEN 51-80% *more selective pts*

SEVERE LATE COMPLICATIONS WERE SEEN IN A SUBSTANTIALLY PROPORTION OF PTS



CLINICAL INVESTIGATION

Head and Neck

**FRACTIONATED STEREOTACTIC RADIOSURGERY FOR REIRRADIATION OF
HEAD-AND-NECK CANCER**

KEITH R. UNGER, M.D.,* CHRISTOPHER E. LOMINSKA, M.D.,* JOHN F. DEEKEN, M.D.,†
BRUCE J. DAVIDSON, M.D.,† KENNETH A. NEWKIRK, M.D.,† GREGORY J. GAGNON, M.D.,*
JIMMY HWANG, M.D.,† REBECCA S. SLACK, M.S.,§ ANNE-MICHELLE NOONE, M.S.,§
AND K. WILLIAM HARTER, M.D.*

2002-2008 65 pts

CyberKnife

Oropharynx 13
Hypopharynx 8
Nasopharynx 7
Paranasal sinus 7
Neck 7
Other Sites 23

Median reirradiation dose was 30 Gy (21-35Gy) in 2-5 fractions

For definitively treated pts 2-year S and locoregional control rates were
41% and 30%

11% experienced severe related toxicity

NASOPHARYNX REIRRADIATION

Table 5. Comparison of LRNPC reirradiation studies (>20 patients) published after 1995 in which patients were restaged

Reirradiation series (reference)	Years in which patients were treated	No. of patients	Median follow-up (y)	3-y actuarial survival (%)	5-y actuarial survival (%)	T1/T2 or Stage I/II (%)	T3/T4 or Stage III/IV (%)	Patients treated with IMRT (%)	Patients re-treated with chemotherapy (%)
Lee, 1997 (12)	1976–1992	654	1.4	—	16	52	48	0	Not discussed
Chua, 1998 (13)	1984–1995	97	1.5	46	36	34	66	0	18
Hwang, 1998* (14)	1957–1995	74	1.7	49	37	35	65	0	28
Teo, 1998 (8)	1984–1989 (primary radiation)	123 [†]	1.7	—	9	49	51	0	13
Chang, 2000 (15)	1982–1995	186	3.5	22	12	37	63	0	44
Leung, 2000 (16)	1990–1999	91	2.25/2.9/4.6	—	30	56	44	0	19
Syed, 2000 (17)	1978–1997	41 [‡]	7	48 (2-y)	30	46	49 [§]	BT	61
Law, 2002 (18)	1989–1996	118	6.5 [¶]	—	61	≥97	≤3	BT	13
Pai, 2002 (6)	1994–1999	36	1.8	54	31	64	36	SRS	Not discussed
Lu, 2004 (19)	2001–2002	49	0.75	100 LRC (0.75 y)	—	27	73	100	6
Oksuz, 2004 (20)	1979–2000	41	1.9	48 (2-y)	28	39	61	0	42
Poon, 2004 (21)	1994–2002	35	1.5	45 (2-y)	26	34	66	0	100
Shin, 2004 (22)	1995–2000	21	4.1	—	32	48	52	FSRT	Not discussed
Chua, 2005 (23)	2001–2004	31	.92	30-40 (2-y)	—	26	74	100	68
Yu, 2005 (24)	1996–2000 (primary radiation)	159	Unclear	74 [#]	—	50 ^{**}	50	Not discussed	Not discussed
Low, 2006 (25)	1995–2003	31	4.2 [§]	—	53	100	0	SRS ^{††}	Not discussed
Wu, 2007 (26)	1999–2005	56	13.3	46 DSS	—	68	32	FSRT	30
Chua, 2007 (27)	1994–2005	74	3.5 [§]	78 (SRS); 66 (BT)	—	70	30	SRS/BT	Not discussed
Present series	1996–2008	29	3.75	71	60	52	48	83	93

CLINICAL INVESTIGATION

Head and Neck

**REIRRADIATION FOR LOCALLY RECURRENT NASOPHARYNGEAL
 CARCINOMA: TREATMENT RESULTS AND PROGNOSTIC FACTORS**

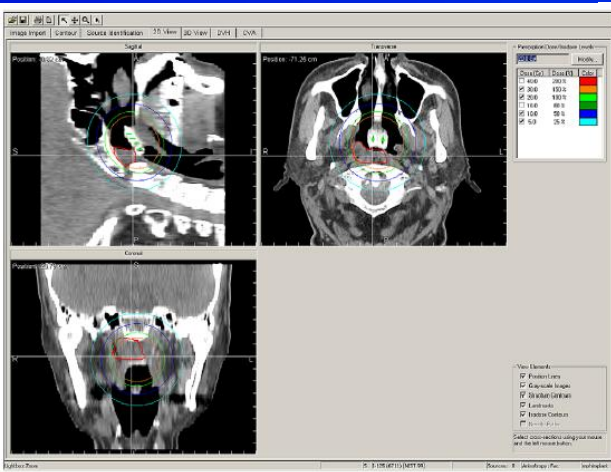
DIDEM ÇOLPAN ÖKSÜZ, M.D.,* GÜLŞEN MERAL, M.D.,* ÖMER UZEL, M.D.,* PEMBE ÇAĞATAY,† AND
 SEDAT TURKAN, M.D.*

41 pts 1979-2000
 MEDIAN REIRRADIATION DOSE 50Gy
 CT IN 41.5%

5-y local progression free S 23%
 5-y OS 28%

Table 3. Multivariate analyses of prognostic factors for overall survival and local progression-free rate

	Local progression-free survival rate <i>p</i> Value	Overall survival rate <i>p</i> Value
Histology		
WHO I		
WHO II	0.23	0.9
WHO III		
Stage		
I		
II	0.33	0.018
III		
IV		
Interval to recurrence		
≤18 months	0.8	0.03
>18 months		
Total reirradiation dose		
<60 Gy	0.005	0.02
60 Gy		



CLINICAL INVESTIGATION

Head and Neck

REIRRADIATION OF LOCALLY RECURRENT NASOPHARYNX CANCER WITH EXTERNAL BEAM RADIOTHERAPY WITH OR WITHOUT BRACHYTHERAPY

LAWRENCE KOUTCHER, M.D.,* NANCY LEE, M.D.,* MICHAEL ZELEFSKY, M.D.,* KELVIN CHAN, B.A.,* GILAD COHEN, M.Sc.,† DAVID PFISTER, M.D.,‡ DENNIS KRAUS, M.D.,§ AND SUZANNE WOLDEN, M.D.*

Departments of *Radiation Oncology, †Medical Physics, ‡Medicine, and §Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY

1996-2008 29 pts

83% **IMRT** and 93% **CT**

*5 y LC **52%**

*Event Free S **44%**

*OS **69%**

No difference in LC or S
between EBRT or EBRT+ Brachy

EBRT alone had more advanced disease
LATE TOXICITY > EBRT group

Efficacy and Toxicity of Reirradiation Using Intensity-Modulated Radiotherapy for Recurrent or Second Primary Head and Neck Cancer

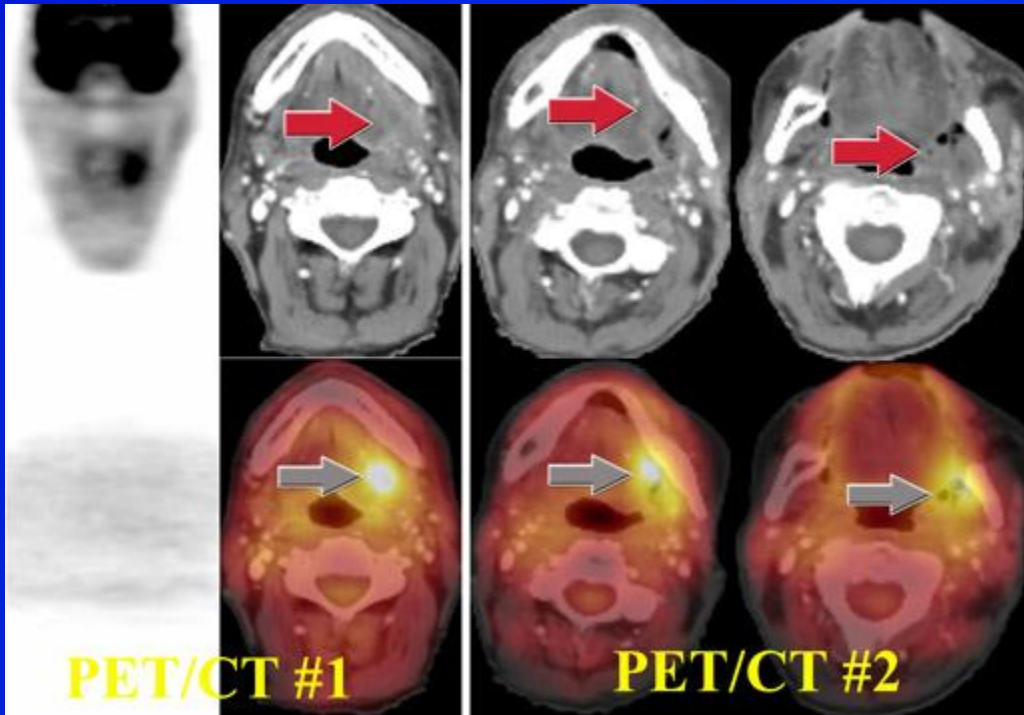
David J. Sher, MD, MPH¹; Robert I. Haddad, MD^{2,3}; Charles M. Norris, Jr, MD⁴; Marshall R. Posner, MD^{2,3}; Lori J. Wirth, MD⁵;
Laura A. Goguen, MD⁴; Donald Annino, MD⁴; Tracy Balboni, MD, MPH¹; Aaron Allen, MD⁶; and Roy B. Tishler, MD, PhD¹

Cancer October 15, 2010

2004-2008 35pts

Oral cavity	4
Larynx/hypoph	13
Oroph	7
Nasophar	2
Neck	9

Median radiation dose 60Gy IMRT + CT



ALL PTS
UNDERWENT
CT, MR OR
BOTH
PET OR PETCT
IN 26/35
PTS

IGRT!

2 y- OS 48%

2y- LRC 67%

11% late deaths (2 aspiration events, 1 hemorrhage, 1 infectious)

CONCLUSIONS: Aggressive chemoradiotherapy with IMRT was found to be feasible and resulted in favorable survival outcomes in comparison with published reports. Acute and late toxicities were substantial. The apparently improved LRC appears to carry a significant risk of developing late complications. *Cancer* 2010;116:4761-8. © 2010 American Cancer Society.



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CLINICAL INVESTIGATION

Head and Neck

**IMRT REIRRADIATION OF HEAD AND NECK CANCER—DISEASE
CONTROL AND MORBIDITY OUTCOMES**

ERIK P. SULMAN, M.D., PH.D.,* DAVID L. SCHWARTZ, M.D.,*[†] THUY T. LE,* K. KIAN ANG, M.D., PH.D.,*
WILLIAM H. MORRISON, M.D.,* DAVID I. ROSENTHAL, M.D.,* ANESA AHAMAD, M.D.,*
MERRIL KIES, M.D.,[‡] BONNIE GLISSON, M.D.,[‡] RANDAL WEBER, M.D., F.A.C.S.,[§]
AND ADAM S. GARDEN, M.D.*

Departments of *Radiation Oncology, [†]Experimental Diagnostic Imaging, [‡]Thoracic/Head & Neck Medical Oncology, and
[§]Head and Neck Surgery, The University of Texas M.D. Anderson Cancer Center, Houston, TX

1999-2004 74pts

Squamous 57

2-YEAR OS 58%

LOCOREGIONAL CONTROL 64%

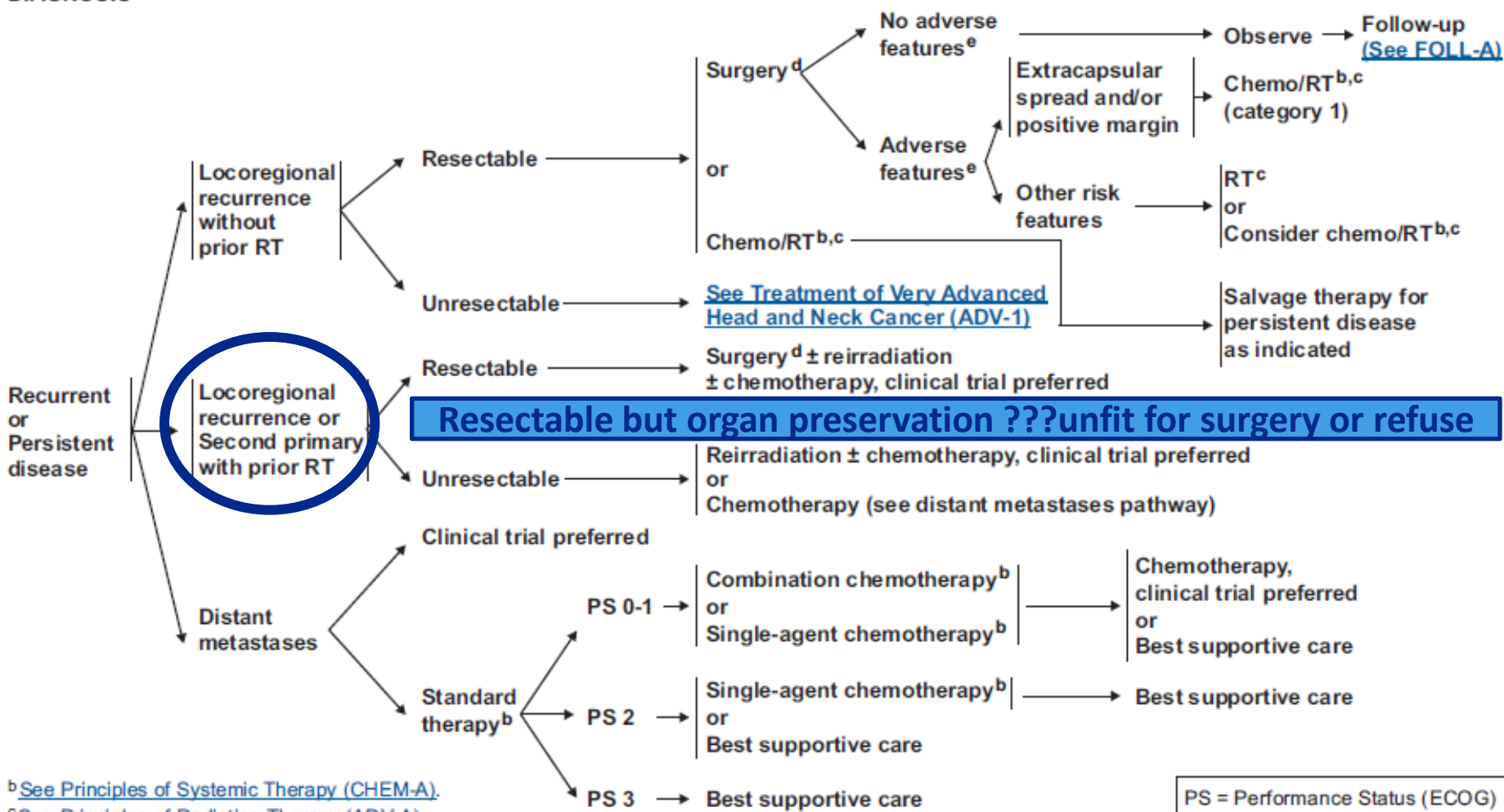
MEDIAN REIRRADIATION 60Gy

SEVERE TOXICITY 20%

1 LATE DEATH

DIAGNOSIS

TREATMENT OF HEAD AND NECK CANCER



^b See Principles of Systemic Therapy (CHEM-A).
^c See Principles of Radiation Therapy (ADV-A).
^d See Principles of Surgery (SURG-A).

PS = Performance Status (ECOG)

Re-irradiazioni nel distretto cervico-facciale

Raccomandazioni di tecnica (BOZZA) AIRO 2011



Associazione
Italiana
Radioterapia
Oncologica

Alterio Daniela
Istituto Europeo di Oncologia, Milano

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CONCLUSIONS



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doi:10.1016/j.ijrobp.2011.06.1998

CRITICAL REVIEW

PRACTICAL CONSIDERATIONS IN THE RE-IRRADIATION OF RECURRENT AND SECOND PRIMARY HEAD-AND-NECK CANCER: WHO, WHY, HOW, AND HOW MUCH?

ALLEN M. CHEN, M.D.,* THEODORE L. PHILLIPS, M.D.,* AND NANCY Y. LEE, M.D.†

*Department of Radiation Oncology, University of California, Davis Cancer Center, Sacramento, CA; and †Department of Radiation Oncology, Memorial Sloan-Kettering Cancer Center, New York, NY

Table 5. Suggested Factors to be considered with respect to risk of toxicity for re-irradiation to head and neck

Variable	Lower risk	Intermediate risk	Higher risk
Interval from previous RT	>3 y	1 y to 3 y	<1 y
KPS	90-100	70-80	<70
Tumor volume	<30 cm ³	30-60 cm ³	>60 cm ³
GT dependence	No	Somewhat	Entirely
Previous RT dose (Gy)	<50	50-60	>60

- Reirradiazione oggi + fattibile rispetto al passato!
- Miglioramento tecnologico!
- Approccio multidisciplinare!
- Selezione dei pz!