Controversie nel carcinoma prostatico a basso rischio

Radioterapia esterna

Stefano Pergolizzi

Dimensioni del problema

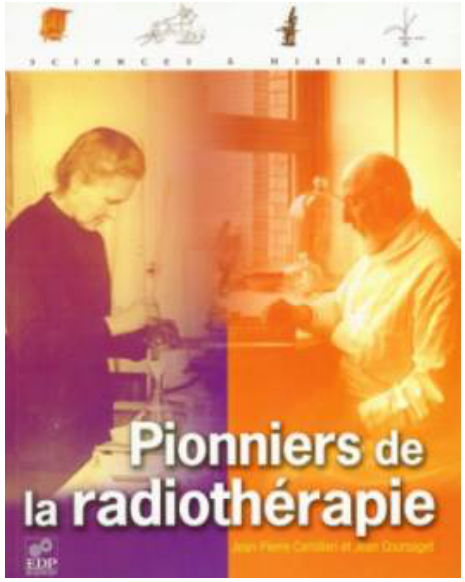
-Neoplasia più comune (214 casi/1000)

-42.000 casi/anno attesi in Italia

-Seconda causa di morte per neoplasia

-Dal 1985 lieve incremento dei morti per ca prostatico

Boyle P	Ann Oncol 2005
Jemal A	Ca Cancer J Clin 2008
Quinn M	BJU 2002
AIRTUM	Report 2011

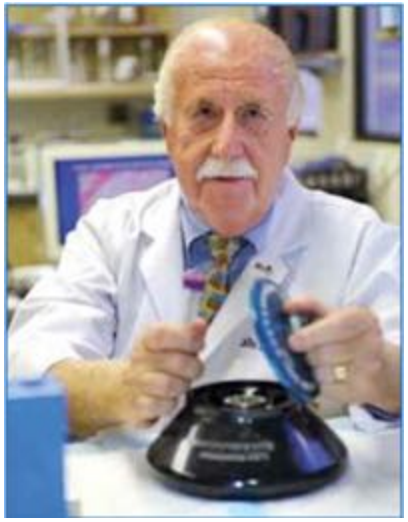


1904 Primo report sull'efficacia della Radioterapia nel ca prostatico

Imbert A. Bull Acad Med Paris

1909 Primo report sull'uso del radium nel ca prostatico

Minet H. Assoc Franc Urol



Richard J Ablin

J. Reprod. Fert. (1970) **22**, 573–574

PRECIPITATING ANTIGENS OF THE NORMAL HUMAN PROSTATE

R. J. ABLIN, W. A. SOANES, P. BRONSON AND E. WITEBSKY†

Division of Immunology, Millard Fillmore Hospital, and Center for Immunology, School of Medicine, State University of New York at Buffalo, Buffalo, New York

(*Received 2nd January* 1970)

[CANCER RESEARCH 40, 2428–2432, July 1980]
0008-5472/80/0040-0000$02.00

A Prostate Antigen in Sera of Prostatic Cancer Patients[1]

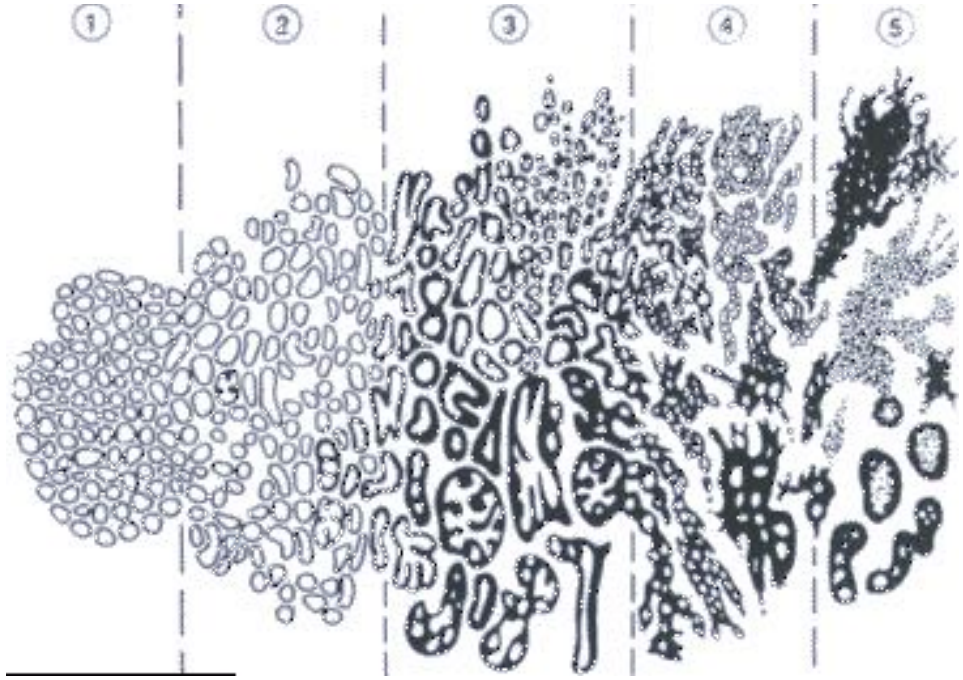
Lawrence D. Papsidero, Ming C. Wang, Luis A. Valenzuela, Gerald P. Murphy, and T. Ming Chu[2]

Department of Diagnostic Immunology Research and Biochemistry, Roswell Park Memorial Institute, Buffalo, New York 14263

1980: inizia l'era del PSA - test

Diagnosi istologica

Il sistema di grading che ha trovato maggiore applicazione è quello di Gleason



Gleason DF J Urol 1974

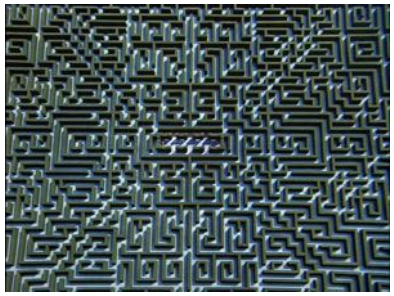
TABLE 1 Definition of TNM

Primary Tumor (T)

Clinical

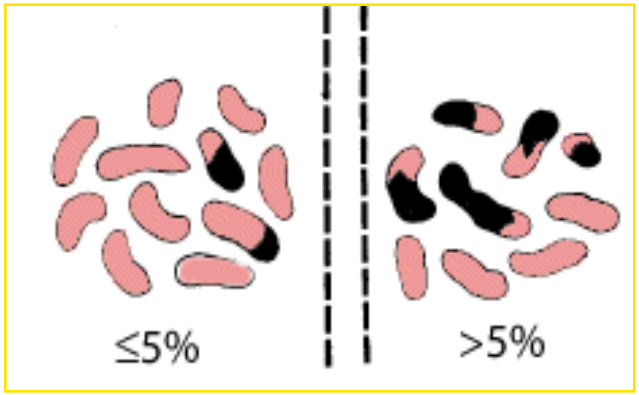
TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Clinically inapparent tumor neither palpable nor visible by imaging
T1a	Tumor incidental histologic finding in 5% or less of tissue resected
T1b	Tumor incidental histologic finding in more than 5% of tissue resected
T1c	Tumor identified by needle biopsy (e.g., because of elevated PSA)
T2	Tumor confined within prostate*
T2a	Tumor involves one-half of one lobe or less
T2b	Tumor involves more than one-half of one lobe but not both lobes
T2c	Tumor involves both lobes
T3	Tumor extends through the prostate capsule**
T3a	Extracapsular extension (unilateral or bilateral)
T3b	Tumor invades seminal vesicle(s)
T4	Tumor is fixed or invades adjacent structures other than seminal vesicles: bladder neck, external sphincter, rectum, levator muscles, and/or pelvic wall

Carcinomi a basso rischio

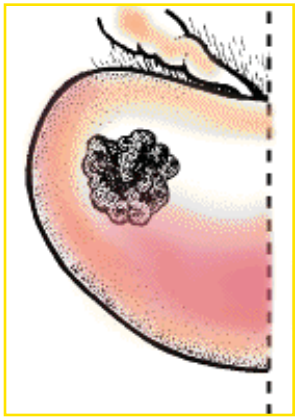


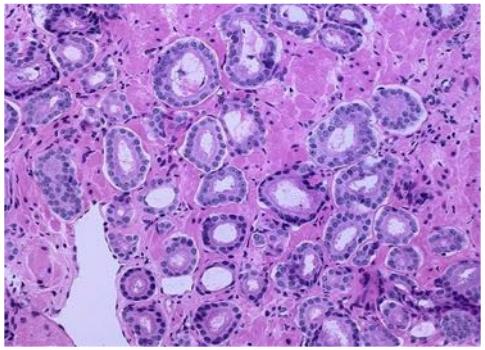
Molto Basso	Basso	Ref.
	T1c-T2a GS 2-6 PSA <10	D'Amico JAMA 1998
	T1-2 GS 2-6 PSA <10	Zelefsky IJROBP 1998
T1c GS 2-6 PSA density <0.15 <3 biopsie positiva <50% ca. nelle 3 biopsie	T1-T2a GS 2-6 PSA <10	NCCN 2012

T1

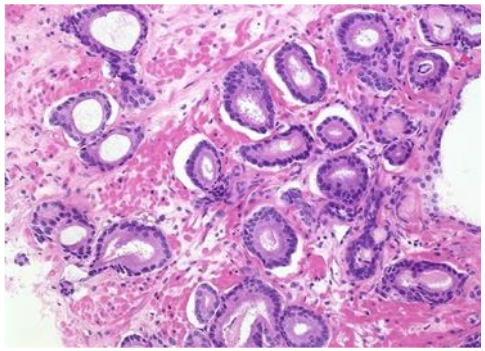


T2a

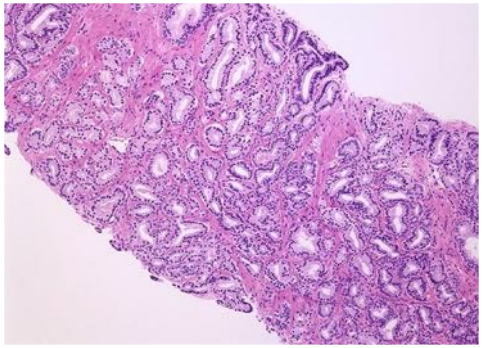




Grado 1



Grado 2



Grado 3

Opzioni terapeutiche per malattia a basso rischio

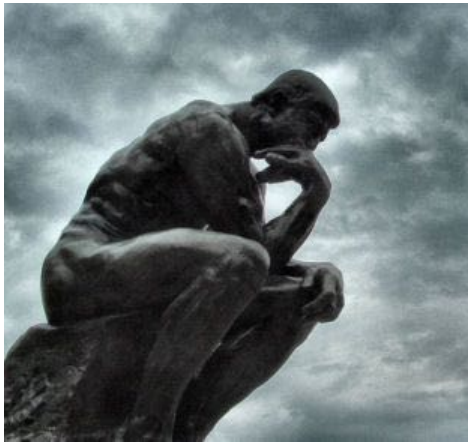
-Sorveglianza attiva

-Prostatectomia radicale robotica

-Prostatectomia radicale laparotomica

-Brachiterapia

-Radioterapia esterna



Carcinoma a basso rischio

Non esistono studi randomizzati Chirurgia vs Radioterapia (esterna, brachiterapia).

La radioterapia vs chirurgia: stessi risultati a lungo termine

NCI Monogr 1988

La radioterapia vs chirurgia: qualità di vita comparabile

Fowler FJ J Clin Oncol 1996

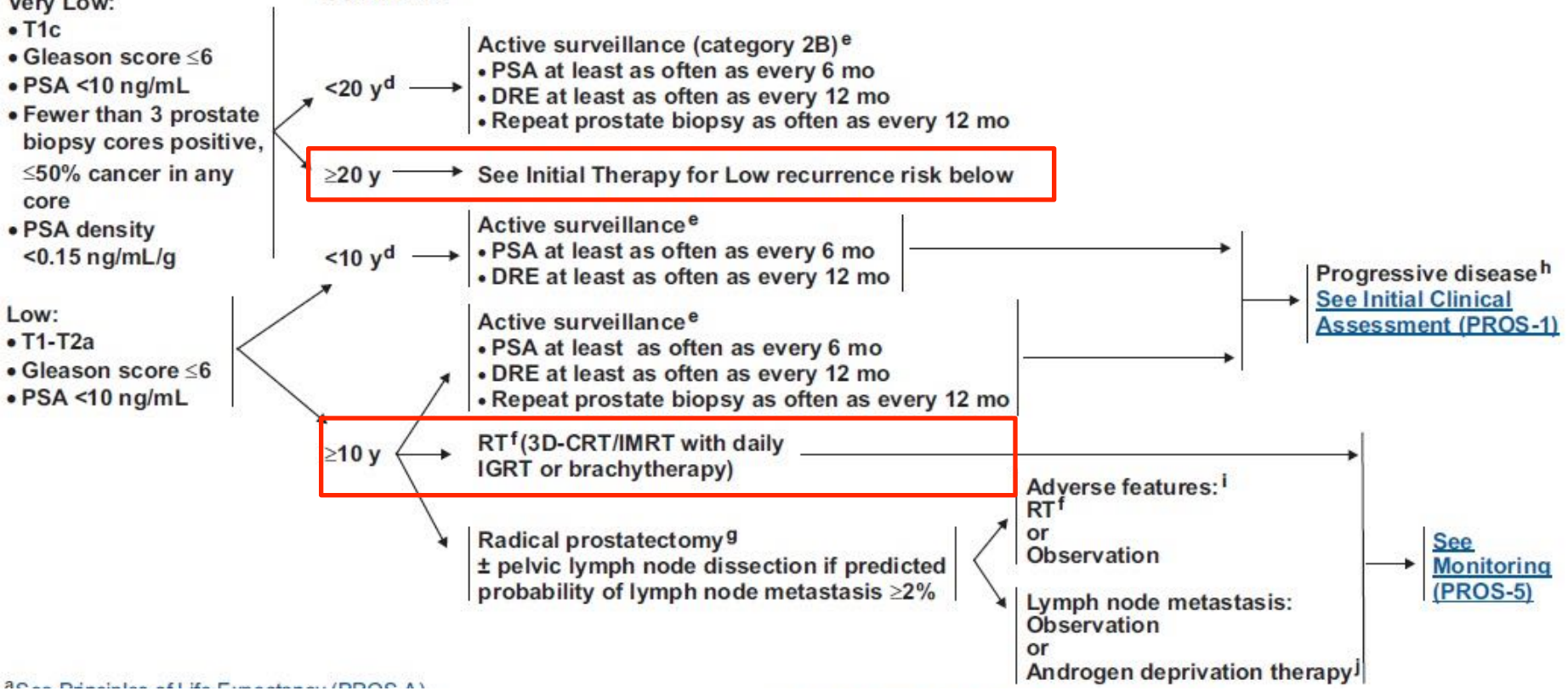
LOW-RISK PROSTATE CANCER MANAGEMENT DECISION GUIDE

	Sorveglianza attiva	Chirurgia	Radioterapia esterna
Potenziali vantaggi	Circa il 40% non progredirà	Procedura singola Non rischi intestinali	Non invasiva Minori rischi di incontinenza ed impotenza
Potenziali svantaggi	Monitoraggio continuo Ripetizione biopsia	Rischio chirurgico Maggiori rischi di incontinenza ed impotenza	Trattamento "lungo" Rischio di tossicità intestinale
Può non essere superiore	Aspettativa di vita >20aa "Gestione dell'ansia"		

NCCN Guidelines Version 3.2012
Prostate Cancer

National Comprehensive Cancer Network®

NCCN Guidelines Index
Prostate Table of Contents
Discussion



[a] See Principles of Life Expectancy (PROS-A)

Carcinoma a basso rischio

3D-CRT con o senza IMRT è raccomandata anche in soggetti giovani che rifiutano l'intervento chirurgico

Dose da erogare ≥ 74Gy

Guidelines on

Prostate Cancer

A. Heidenreich (chairman), M. Bolla, S. Joniau,
M.D. Mason, V. Matveev, N. Mottet, H-P. Schmid,
T.H. van der Kwast, T. Wiegel, F. Zattoni

Carcinoma a basso rischio

3D-CRT , IMRT. IGRT se dosi > 78Gy

Dose da erogare 75.6 – 79.2Gy

NCCN National Comprehensive Cancer Network®

NCCN Guidelines Version 3.2012
Prostate Cancer

A chi erogare dosi più alte

-Soggetti giovani

->50% positività biopsie

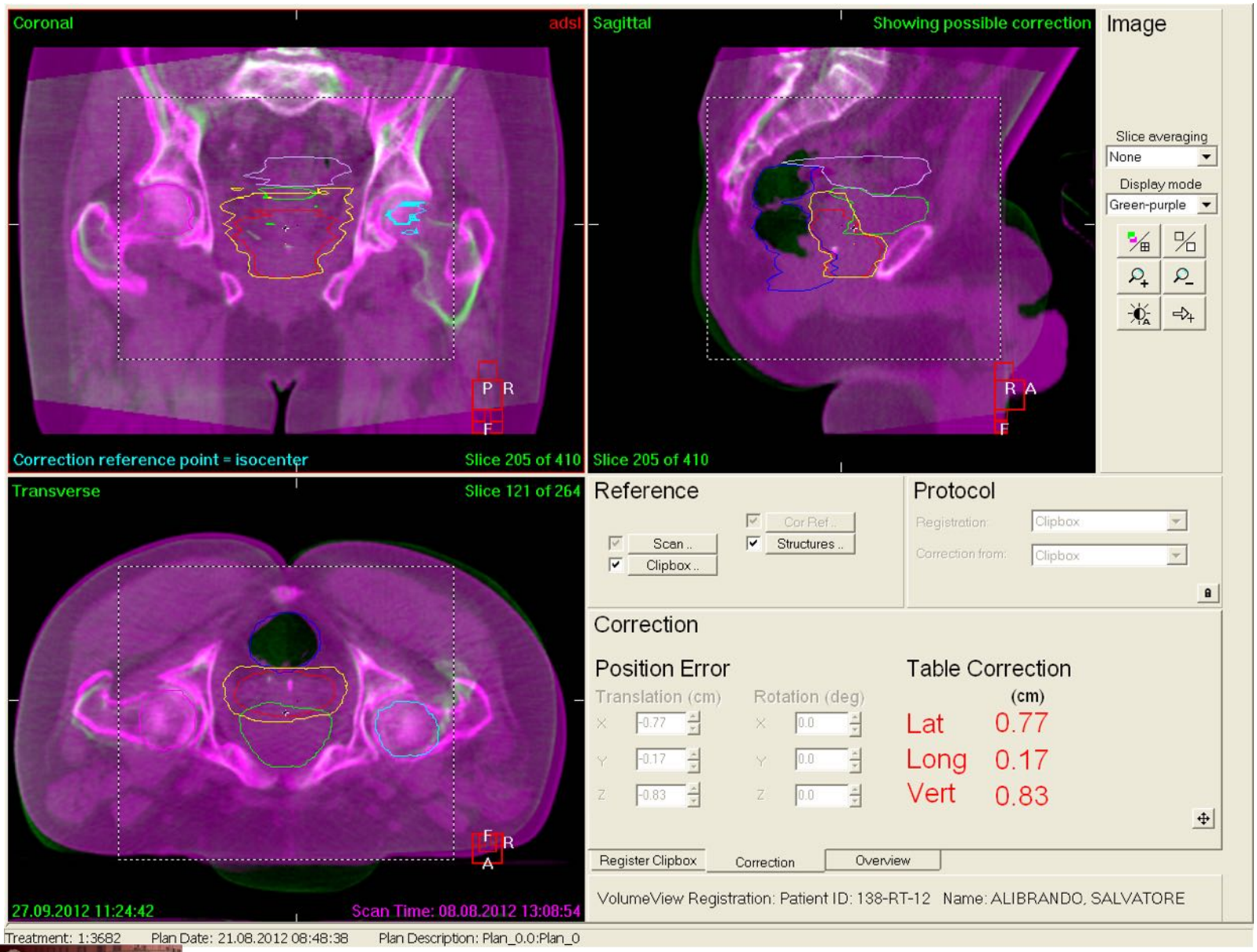
- raddoppiamento PSA ultimi 12-24 mesi

-evidenza invasione perineurale nei reperti bioptici

Future of Treatment for Low-Risk Prostate Cancer: For All, for Some, or for None?

Anthony V. D'Amico, *Brigham and Women's Hospital and Dana Farber Cancer Institute, Boston, MA*

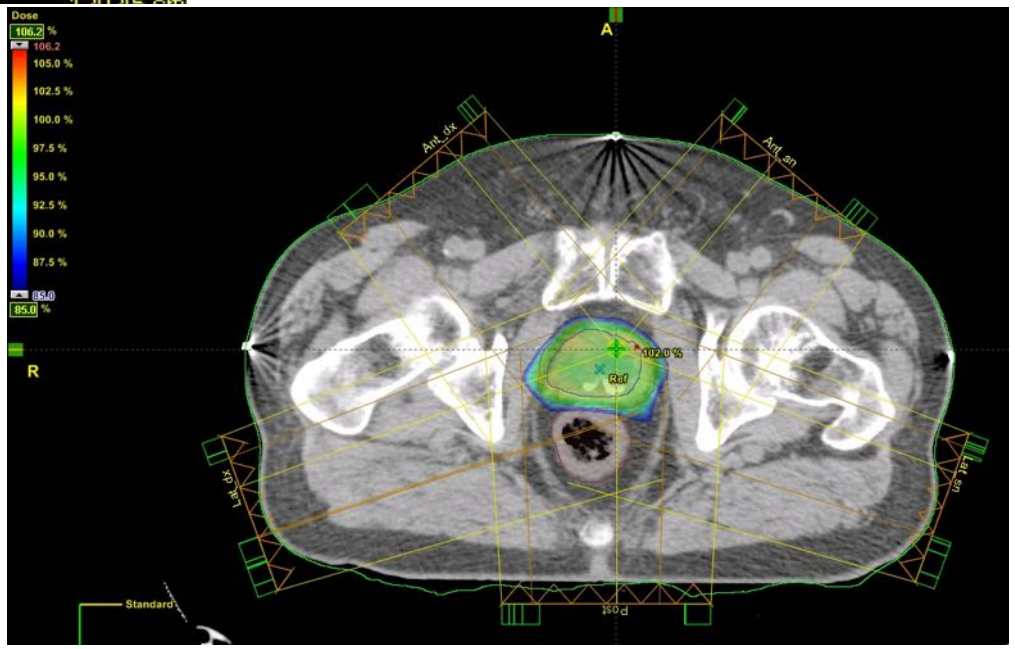
JCO 2011


Coronal
adsl
Correction reference point = isocenter
Slice 205 of 410
Sagittal
Showing possible correction
Slice 205 of 410
Image
Slice averaging
None
Display mode
Green-purple
Transverse
Slice 121 of 264
27.09.2012 11:24:42
Scan Time: 08.08.2012 13:08:54
Reference
Scan ..
Clipbox ..
Cor Ref ..
Structures ..
Protocol
Registration:
Clipbox
Correction from:
Clipbox
Correction
Position Error
Translation (cm)
Rotation (deg)
Table Correction
(cm)
Lat 0.77
Long 0.17
Vert 0.83
Register Clipbox
Correction
Overview
VolumeView Registration: Patient ID: 138-RT-12 Name: ALIBRANDO, SALVATORE
Treatment: 1:3682
Plan Date: 21.08.2012 08:48:38
Plan Description: Plan_0.0:Plan_0


%
100.0
95.0
90.0
1 cm
79/112
CT 01

3DCRT

IMRT


Dose
106.2 %
105.0 %
102.5 %
100.0 %
97.5 %
95.0 %
92.5 %
90.0 %
87.5 %
85.0 %
A
R
Ant. dx
Ant. sn
102.0 %
Ref
Standard


XXII CONGRESSO
AIRO
ROMA 2012
17-20 novembre

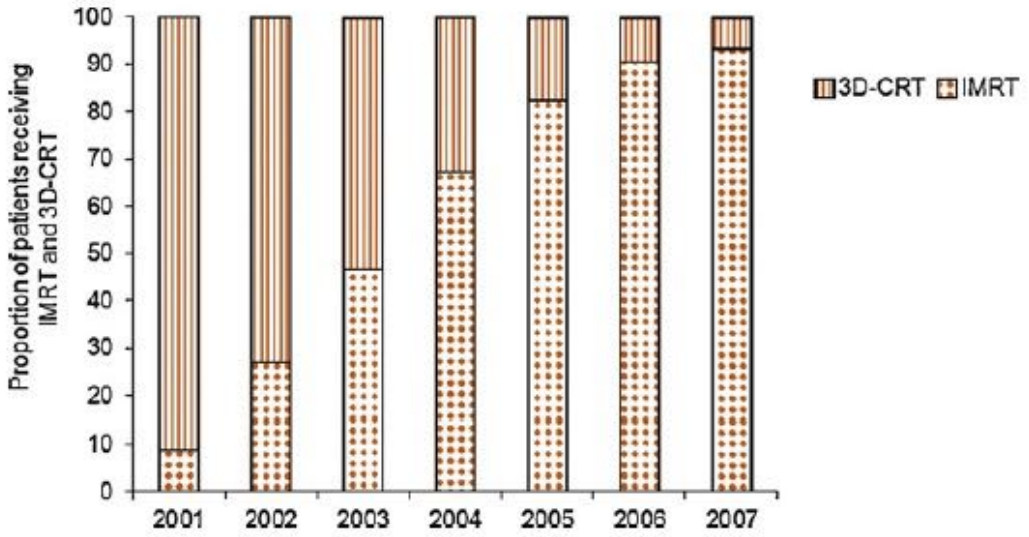


Fig. 1 – Percentage of men treated with intensity-modulated radiotherapy (IMRT) and three-dimensional conformal therapy (3D-CRT) for prostate cancer between 2001 and 2007. Among Medicare beneficiaries diagnosed with prostate cancer from 2001 through 2007, there is an 84% increase in the proportion of patients treated with IMRT as compared with 3D-CRT.

2012

Summed Beams in plan1

ROI	Dose [%]	Dose [Gy]	Volume [%]	Volume [ccm]
retto	62.82	**50.0000**	36.52	29.54
retto	82.92	**66.0000**	27.73	22.43
retto	87.95	**70.0000**	24.94	20.17
vescica	62.82	**50.0000**	48.06	23.85
vescica	87.95	**70.0000**	32.97	16.36

Structure Set
Plans
plan1

Summed Beams in plan1

Name	Min [%]	Max [%]	Median [%]	Average [%]	Std. Dev. [%]	Calcu
External	0.00	102.27	0.89	6.97	16.09	76575
GTV	88.98	102.17	100.16	99.98	1.38	2143
ano	4.20	11.14	6.35	6.43	1.75	85
bulbo	13.20	91.93	42.08	46.83	23.89	123
retto	2.10	100.13	40.51	45.62	37.99	2988
testa fe...	2.25	53.27	6.56	10.17	9.25	1687
testa fe...	5.48	66.78	40.66	36.97	19.36	1818
vescica	4.86	100.87	59.86	57.68	34.54	1835

Bibl. di riferimento

Greco C Radiother Oncol 2003
Valdagni R IJROBP 2008
Fiorino C Radiother Oncol 2009

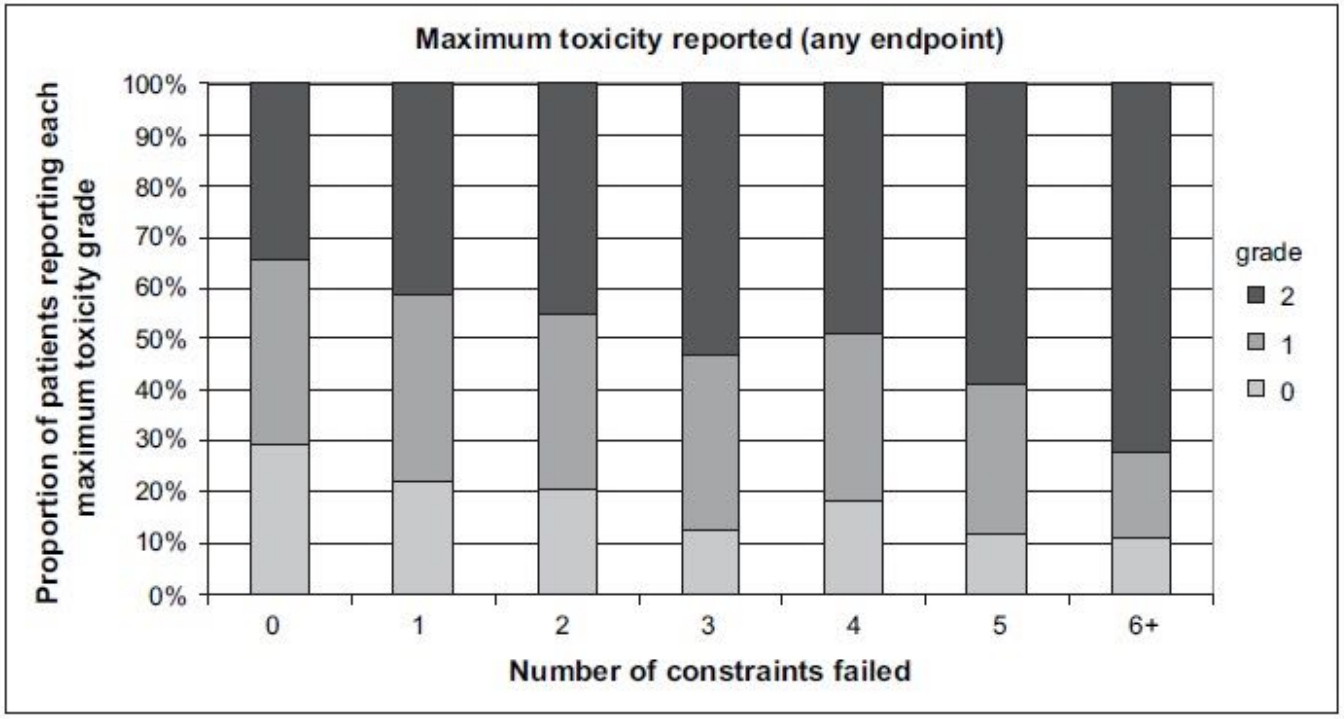


Fig. 2. Summary of maximal toxicity grade reported (any endpoint) relative to number of constraints failed. Lowest volume constraint taken at each dose level.

EURURO-4630; No. of Pages 7

ARTICLE IN PRESS

EUROPEAN UROLOGY XXX (2012) XXX–XXX

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

European Association of Urology

Prostate Cancer

Comparative Effectiveness of External-Beam Radiation Approaches for Prostate Cancer

Bruce L. Jacobs[a,b,*], *Yun Zhang*[b], *Ted A. Skolarus*[a,b,c], *John T. Wei*[b,d], *James E. Montie*[a,b], *David C. Miller*[a,b], *Brent K. Hollenbeck*[a,b]

[a] *Department of Urology, Division of Oncology, University of Michigan, Ann Arbor, MI, USA;* [b] *Department of Urology, Division of Health Services Research, University of Michigan, Ann Arbor, MI, USA;* [c] *Center for Clinical Management Research, VA Ann Arbor Healthcare System, Ann Arbor, MI, USA;* [d] *Division of General Urology, University of Michigan, Ann Arbor, MI, USA*

n. pz.

3D-CRT 6976 IMRT 11 039

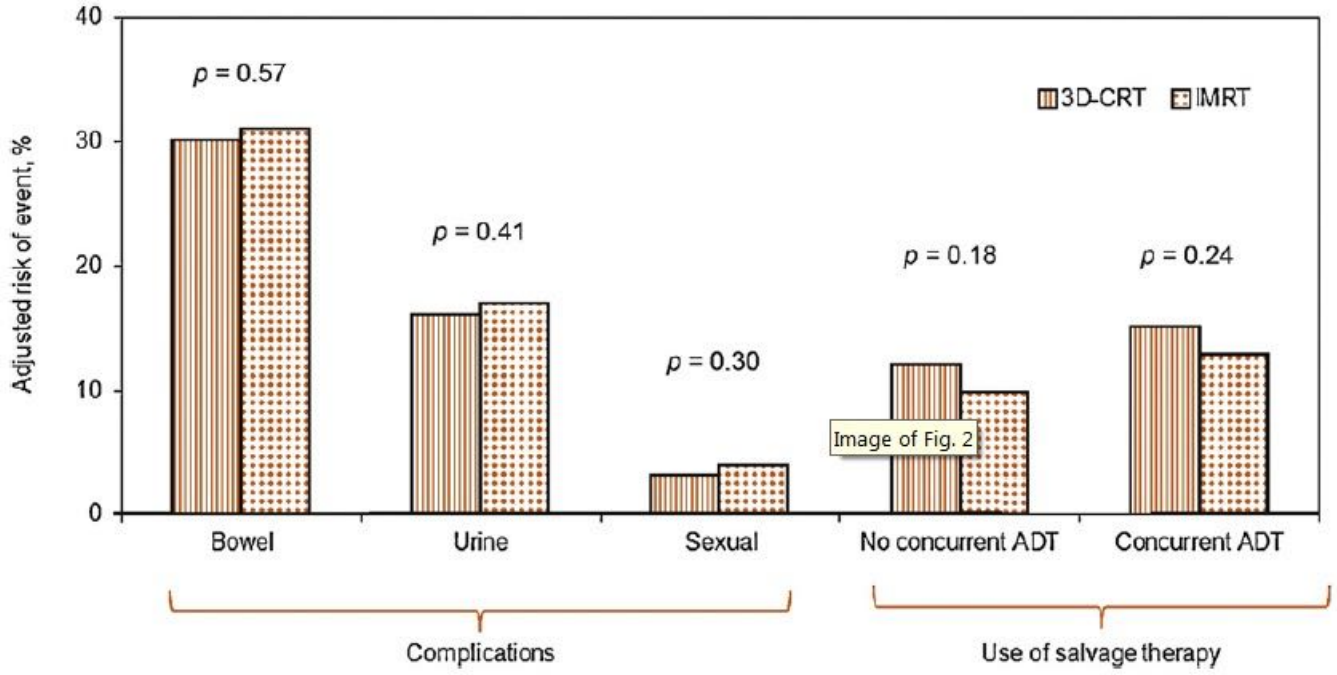
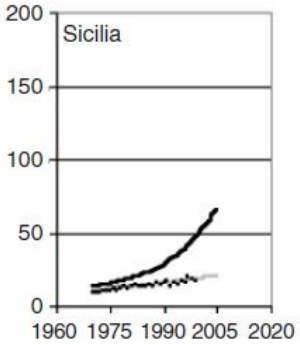


Fig. 2 – Five-year adjusted percentage of having a complication requiring a procedure and use of salvage androgen-deprivation therapy (ADT) among low-risk patients. For men with low-risk disease, the likelihood of having a complication requiring an intervention or needing salvage therapy was similar between the two approaches (all $p > 0.05$). Percentages are adjusted for age, comorbidity, socioeconomic status, race/ethnicity, tumor grade and stage, and year of treatment. 3D-CRT = three-dimensional conformal therapy; IMRT = intensity-modulated radiotherapy.

Regione Sicilia

DT 78Gy/39fr



Tecnica	Costi
3D-CRT	5987.33
IMRT	10223.95

Differenza **-4236.62**

ELSEVIER

Int. J. Radiation Oncology Biol. Phys., Vol. 82, No. 1, pp. 228–234, 2012

0360-3016/$ - see front matter

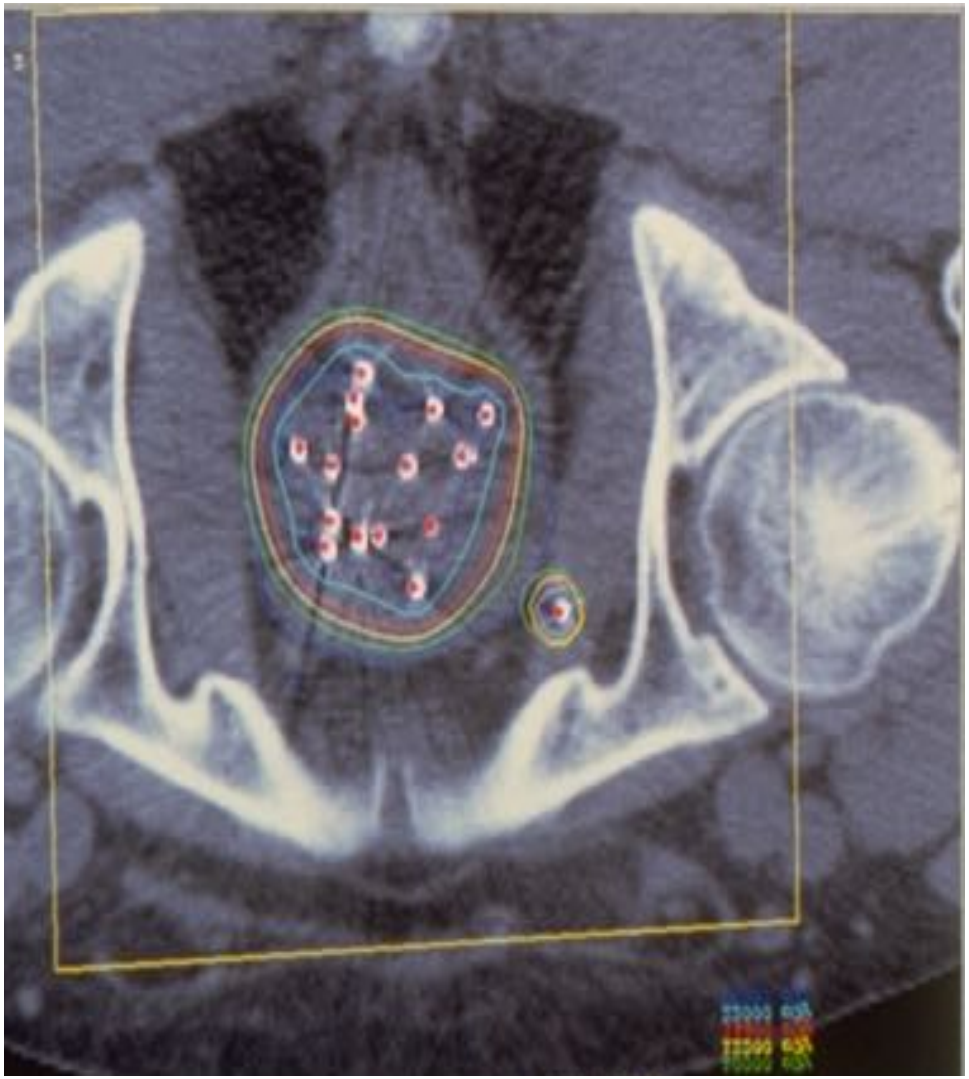
doi:10.1016/j.ijrobp.2010.10.026

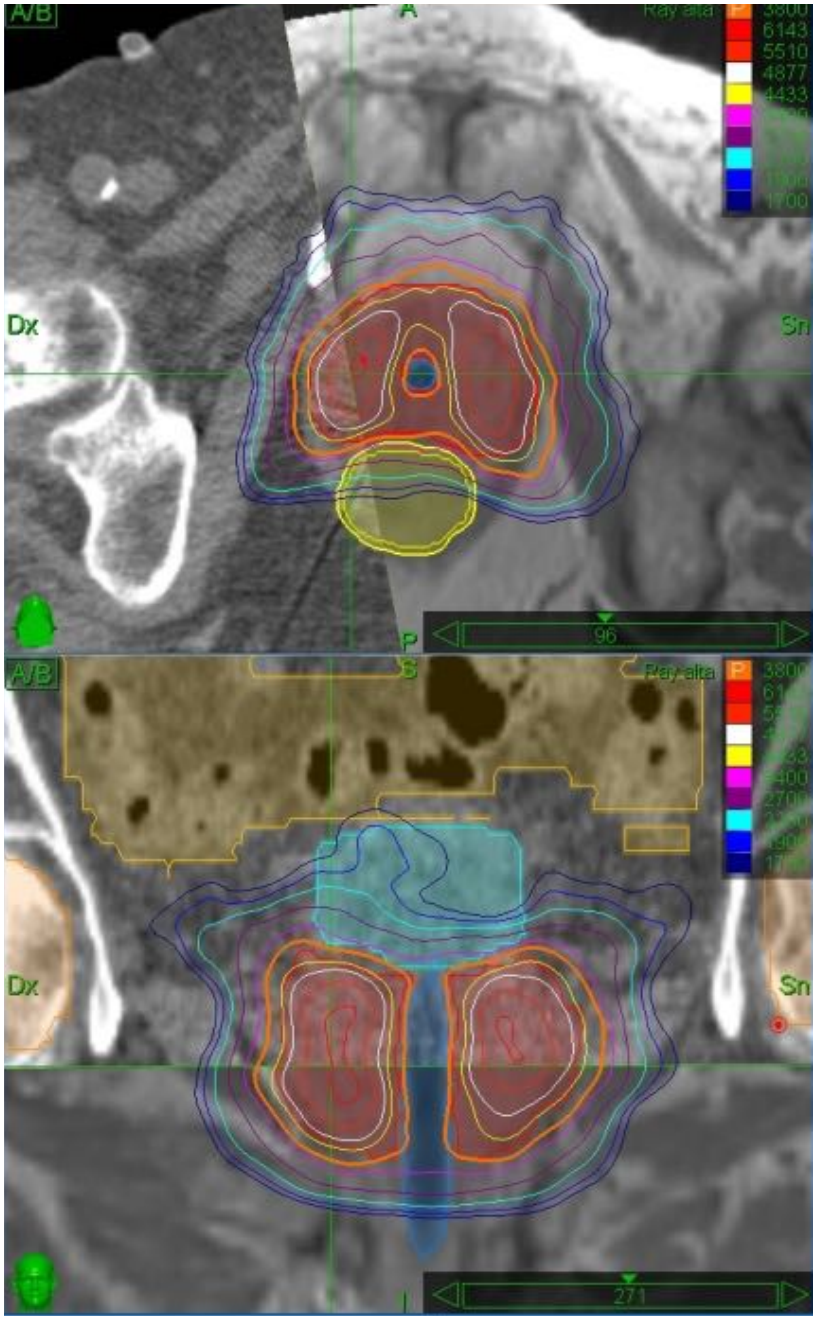
CLINICAL INVESTIGATION **Genitourinary Cancer**

STEREOTACTIC BODY RADIOTHERAPY AS MONOTHERAPY OR POST–EXTERNAL BEAM RADIOTHERAPY BOOST FOR PROSTATE CANCER: TECHNIQUE, EARLY TOXICITY, AND PSA RESPONSE

Siavash Jabbari, M.D.,* Vivian K. Weinberg, Ph.D.,‡ Tania Kaprealian, M.D.,* I-Chow Hsu, M.D.,* Lijun Ma, Ph.D.,* Cynthia Chuang, Ph.D.,* Martina Descovich, Ph.D.,* Stephen Shiao, M.D., Ph.D.,* Katsuto Shinohara, M.D.,† Mack Roach, III, M.D.,*† and Alexander R. Gottschalk, M.D.,Ph.D.*

Departments of *Radiation Oncology, †Urology, and ‡Biostatistics and Computational Biology Core, Helen Diller Family Comprehensive Cancer Center, University of California San Francisco, San Francisco, California




A/B
A
Ray alta
6143
5510
4877
4433
Dx
Sn
P
96
A/B
S
Ray alta
Dx
Sn
271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ORIGINAL CONTRIBUTION

Intensity-Modulated Radiation Therapy, Proton Therapy, or Conformal Radiation Therapy and Morbidity and Disease Control in Localized Prostate Cancer

Nathan C. Sheets, MD
Gregg H. Goldin, MD
Anne-Marie Meyer, PhD
Yang Wu, PhD
YunKyung Chang, PhD
Til Stürmer, MD, PhD
Jordan A. Holmes, BS
Bryce B. Reeve, PhD
Paul A. Godley, MD, PhD
William R. Carpenter, PhD
Ronald C. Chen, MD, MPH

Context There has been rapid adoption of newer radiation treatments such as intensity-modulated radiation therapy (IMRT) and proton therapy despite greater cost and limited demonstrated benefit compared with previous technologies.

Objective To determine the comparative morbidity and disease control of IMRT, proton therapy, and conformal radiation therapy for primary prostate cancer treatment.

Design, Setting, and Patients Population-based study using Surveillance, Epidemiology, and End Results–Medicare-linked data from 2000 through 2009 for patients with nonmetastatic prostate cancer.

Main Outcome Measures Rates of gastrointestinal and urinary morbidity, erectile dysfunction, hip fractures, and additional cancer therapy.

Results Use of IMRT vs conformal radiation therapy increased from 0.15% in 2000 to 95.9% in 2008. In propensity score–adjusted analyses (N=12 976), men who received IMRT vs conformal radiation therapy were less likely to receive a diagnosis of gastrointestinal morbidities (absolute risk, 13.4 vs 14.7 per 100 person-years; relative risk [RR], 0.91; 95% CI, 0.86-0.96) and hip fractures (absolute risk, 0.8 vs 1.0 per 100 person-years;

2012

Nessuna evidenza di minore tossicità erogando Protoni

Kessel *et al. Radiation Oncology* 2012, **7**:115
http://www.ro-journal.com/content/7/1/115

RADIATION ONCOLOGY

RESEARCH **Open Access**

Connection of European particle therapy centers and generation of a common particle database system within the European ULICE-framework

Kerstin A Kessel[1], Nina Bougatf[1,3], Christian Bohn[2], Daniel Habermehl[1], Dieter Oetzel[1], Rolf Bendl[3], Uwe Engelmann[2], Roberto Orecchia[4], Piero Fossati[4], Richard Pötter[5], Manjit Dosanjh[6], Jürgen Debus[1] and Stephanie E Combs[1*]

VOLUME 30 · NUMBER 25 · SEPTEMBER 1 2012

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Multidisciplinary Care and Pursuit of Active Surveillance in Low-Risk Prostate Cancer

Ayal A. Aizer, Jonathan J. Paly, Anthony L. Zietman, Paul L. Nguyen, Clair J. Beard, Sandhya K. Rao, Irving D. Kaplan, Andrzej Niemierko, Michelle S. Hirsch, Chin-Lee Wu, Aria F. Olumi, M. Dror Michaelson, Anthony V. D'Amico, and Jason A. Efstathiou

Ayal A. Aizer, Harvard Radiation Oncology Program; Jonathan J. Paly, Anthony L. Zietman, Sandhya K. Rao, Andrzej Niemierko, Chin-Lee Wu, Aria F. Olumi, M. Dror Michaelson, Jason A. Efstathiou, Massachusetts General Hospital; Paul L. Nguyen, Michelle S. Hirsch, Anthony V. D'Amico, Brigham and Women's Hospital; Paul L. Nguyen, Anthony V. D'Amico, Dana-Farber Cancer Institute; Irving D. Kaplan, Beth Israel Deaconess Medical Center, Boston, MA.

Submitted March 5, 2012; accepted May 30, 2012; published online ahead of print at www.jco.org on July 30, 2012.

Supported by the Department of Radiation Oncology at Massachusetts General Hospital.

Authors' disclosures of potential conflicts of interest and author contributions are found at the end of this article.

Corresponding author: Ayal Aizer, MD, MHS, Harvard Radiation Oncology Program, Massachusetts General Hospital, Department of Radiation Oncology, 100 Blossom St, Cox 3, Boston, MA 02114; e-mail: aaaizer@partners.org.

ABSTRACT

Purpose
Multidisciplinary clinics offer a unique approach to the management of patients with cancer. Yet, limited data exist to show that such clinics affect management. The purpose of this study was to determine whether consultation at a multidisciplinary clinic is associated with selection of active surveillance in patients with low-risk prostate cancer.

Patients and Methods
The study comprised 701 men with low-risk prostate cancer managed at three tertiary care centers in Boston, MA in 2009. Patients either obtained consultation at a multidisciplinary prostate cancer clinic, at which they were seen by a combination of urologic, radiation, and medical oncologists in a concurrent setting, or they were seen by individual practitioners in sequential settings. The primary outcome was selection of active surveillance.

Results
Crude rates of selection of active surveillance in patients seen at a multidisciplinary clinic were double that of patients seen by individual practitioners (43% *v* 22%), whereas the proportion of men treated with prostatectomy or radiation decreased by approximately 30% ($P < .001$). On multivariate logistic regression, older age (odds ratio [OR], 1.09; 95% CI, 1.05 to 1.12; $P < .001$), unmarried status (OR, 1.66; 95% CI, 1.01 to 2.72; $P = .04$), increased Charlson comorbidity index (OR, 1.37; 95% CI, 1.06 to 1.77; $P = .02$), fewer positive cores (OR, 0.92; 95% CI, 0.90 to 0.94; $P < .001$), and consultation at a multidisciplinary clinic (OR, 2.15; 95% CI, 1.13 to 4.10; $P = .02$) were significantly associated with pursuit of active surveillance.

Conclusion
Multidisciplinary care is associated with increased selection of active surveillance in men with low-risk prostate cancer. This finding may have an important clinical, social, and economic impact.

J Clin Oncol 30:3071-3076.

Vol. 299 No. 23, June 18, 2008
JAMA

The Perfect Storm of Overutilization

Ezekiel J. Emanuel, MD, PhD; Victor R. Fuchs, PhD

JAMA. 2008;299(23):2789-2791.

"A perfect storm" occurs when a confluence of many factors or events—no one of which alone is particularly devastating—creates a catastrophic force. Such confluence is rare and devastating. Over time and through disconnected events, US health care has evolved into a "perfect storm" that drives overutilization and increases the cost of health care.

Higher Costs in the United States


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