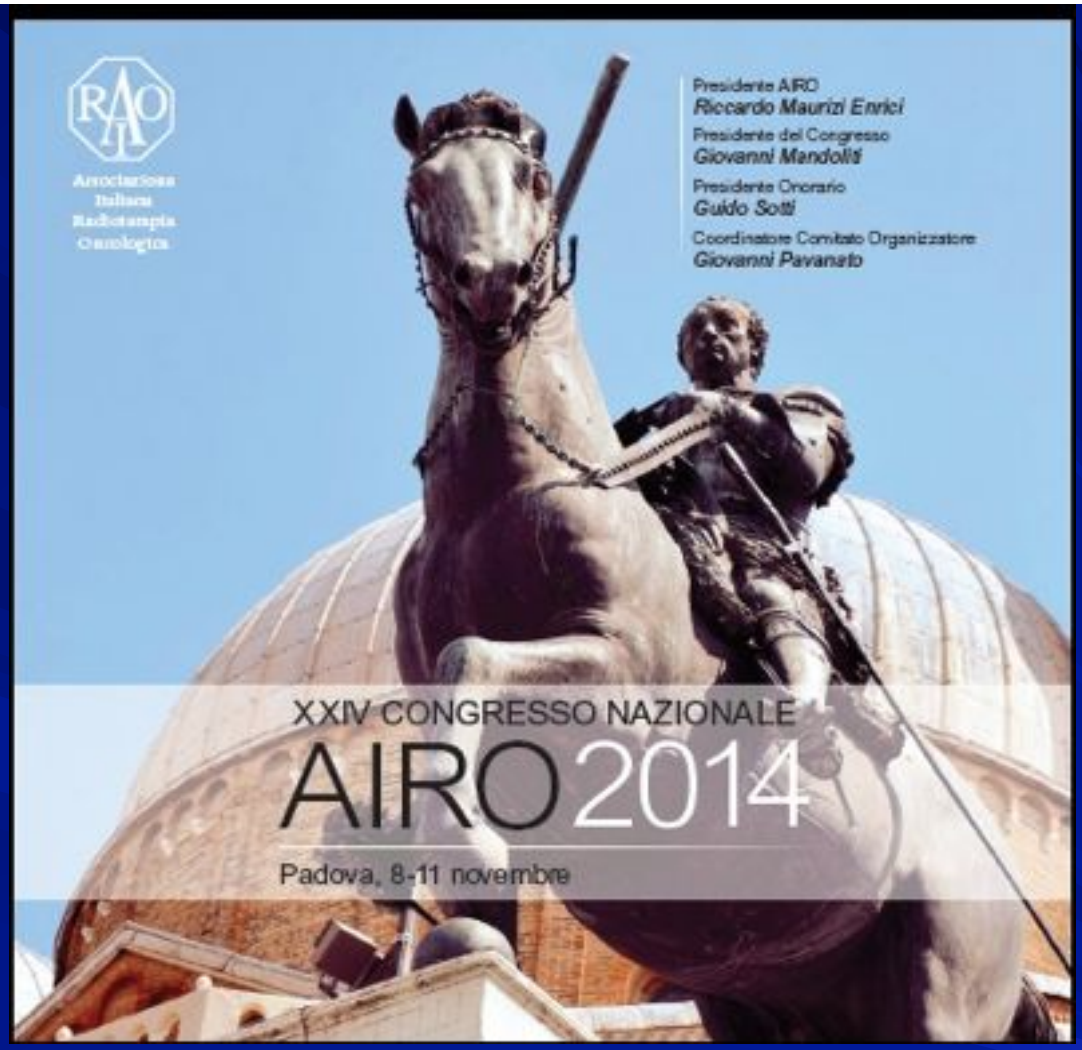


Carcinoma del rinofaringe: analisi dei fattori prognostici in una casistica di 149 pazienti consecutivi trattati con tecniche di radioterapia ad intensità modulata e chemioterapia

Ester Orlandi, S.C. Radioterapia 2,
Fondazione IRCCS INT, Milano

VOLUME 25 · NUMBER 31 · NOVEMBER 1 2007

JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Prospective Randomized Study of Intensity-Modulated Radiotherapy on Salivary Gland Function in Early-Stage Nasopharyngeal Carcinoma Patients

Michael K.M. Kam, Sing-Fai Leung, Benny Zee, Ricky M.C. Chau, Joyce J.S. Suen, Frankie Mo, Maria Lai, Rosalie Ho, Kin-yin Cheung, Brian K.H. Yu, Samuel K.W. Chiu, Peter H.K. Choi, Peter M.L. Teo, Wing-hong Kwan, and Anthony T.C. Chan

...gy Biol. Phys., Vol. 66, No. 4, pp. 981–991, 2006

0360-3016/06/$–see front matter

CLINICAL INVESTIGATION **Head and Neck**

XEROSTOMIA AND QUALITY OF LIFE AFTER INTENSITY-MODULATED RADIOTHERAPY VS. CONVENTIONAL RADIOTHERAPY FOR EARLY-STAGE NASOPHARYNGEAL CARCINOMA: INITIAL REPORT ON A RANDOMIZED CONTROLLED CLINICAL TRIAL

EDMOND H. N. POW, M.D.S.,* DORA L. W. KWONG, M.B. B.S.,† ANNE S. MCMILLAN, PH.D.,* MAY C. M. WONG, PH.D.,‡ JONATHAN S. T. SHAM, M.D.,† LUCULLUS H. T. LEUNG, PH.D.,† AND W. KEUNG LEUNG, PH.D.‡

Contents lists available at SciVerse ScienceDirect

Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com

Phase III randomised trial

A prospective, randomized study comparing outcomes and toxicities of intensity-modulated radiotherapy vs. conventional two-dimensional radiotherapy for the treatment of nasopharyngeal carcinoma

Gang Peng, Tao Wang, Kun-yu Yang, Sheng Zhang, Tao Zhang, Qin Li, Jun Han, Gang Wu *

Cancer Center of Union Hospital, Wuhan, Hubei 430022, PR China

Contents lists available at ScienceDirect

Radiotherapy and Oncology

journal homepage: www.thegreenjournal.com

Review

Evolution of treatment for nasopharyngeal cancer – Success and setback in the intensity-modulated radiotherapy era

Anne W.M. Lee [a,*], Wai Tong Ng [b], Lucy L.K. Chan [b], Wai Man Hung [b], Connie C.C. Chan [b], Henry C.K. Sze [a], Oscar S.H. Chan [b], Amy T.Y. Chang [b], Rebecca M.W. Yeung [b]

[a] Clinical Oncology Center, University of Hong Kong-Shenzhen Hospital; and [b] Department of Clinical Oncology, Pamela Youde Nethersole Eastern Hospital, Hong Kong

JNPC Journal of Nasopharyngeal Carcinoma

Review

Emerging Prognostic Factors in Nasopharyngeal Carcinoma

N. A. Iacovelli[1,3], P. Bossi[2], C. Fallai[1], G. Gardani[3], E. Orlandi[1]

[1]Radiotherapy Unit 2, Fondazione IRCCS Istituto Nazionale Tumori, Via Venezian 1, 20133 Milan, Italy

[2]Head and Neck Cancer Medical Oncology Unit, Fondazione IRCCS Istituto Nazionale Tumori, Via Venezian 1, 20133 Milan, Italy

[3]University of Milano-Bicocca, Piazza dell'Ateneo Nuovo 1, 20126 Milan, Italy

Corresponding author: Ester Orlandi, Radiotherapy 2 Unit; Email: ester.orlandi@istitutotumori.mi.i

2014

RT of nasopharyngeal carcinoma

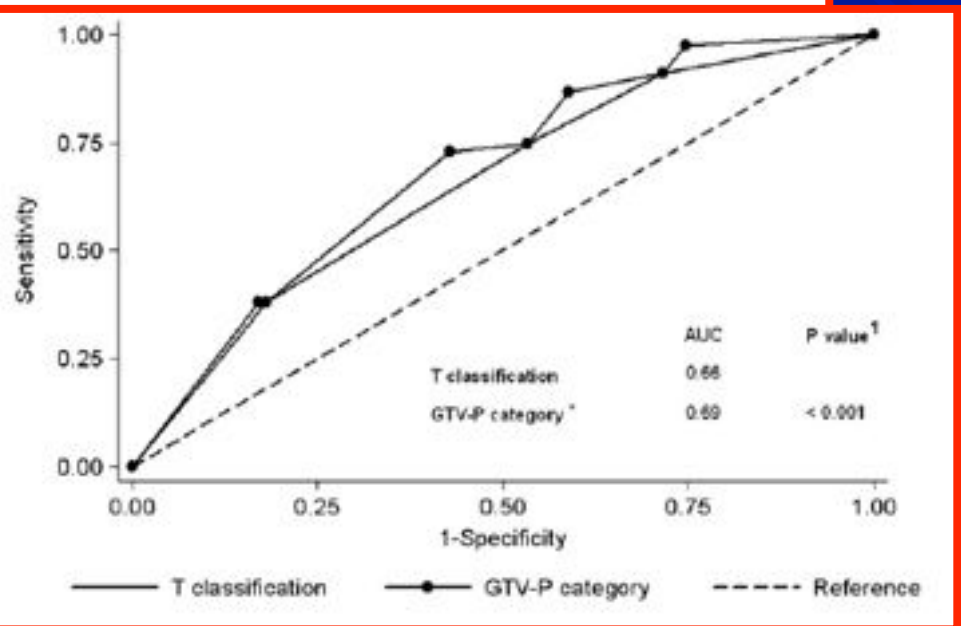
Is primary tumor volume still a prognostic factor in intensity modulated radiation therapy for nasopharyngeal carcinoma?

Multivariate analysis of prognostic factors in early and advanced T classification for all 694 nasopharyngeal carcinoma patients receiving IMRT.

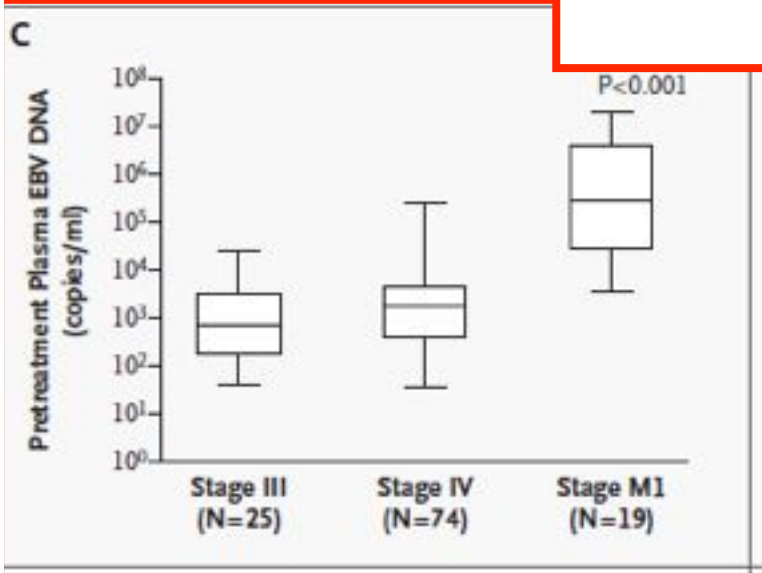
Endpoint	Variable	HR	HR (95% CI)	P-value
*Early T1-T2 patients**				
Disease-free survival	GTV-P (≥19 ml vs.<19 ml)	7.678	3.735–15.785	<0.001
	N classification* (N1–3 vs. N0)	2.562	0.884–7.429	0.083
Overall survival	GTV-P (≥19 ml vs.<19 ml)	8.714	3.613–21.016	<0.001
	N classification* (N1–3 vs. N0)	3.866	0.894–16.721	0.070
Local relapse-free survival	GTV-P (≥19 ml vs.<19 ml)	NS		
Distant metastasis-free survival	GTV-P (≥19 ml vs.<19 ml)	9.636	4.071–22.812	<0.001
*Advanced T3-T4 patients**				
Disease-free survival	GTV-P (≥19 ml vs.<19 ml)	7.256	2.284–23.057	0.001
	Age (≥45 vs.<45 years)	1.613	1.118–2.328	0.011
	N classification* (N1–3 vs. N0)	1.877	1.049–3.359	0.034
Overall survival	GTV-P (≥19 ml vs.<19 ml)	5.725	1.804–18.172	0.003
	Age (≥45 vs.<45 years)	2.146	1.378–3.342	0.001
Local relapse-free survival	GTV-P (≥19 ml vs.<19 ml)	NS		
Distant metastasis-free survival	GTV-P (≥19 ml vs.<19 ml)	6.961	1.692–28.634	0.007
	N classification* (N1–3 vs. N0)	2.208	1.014–4.811	0.046

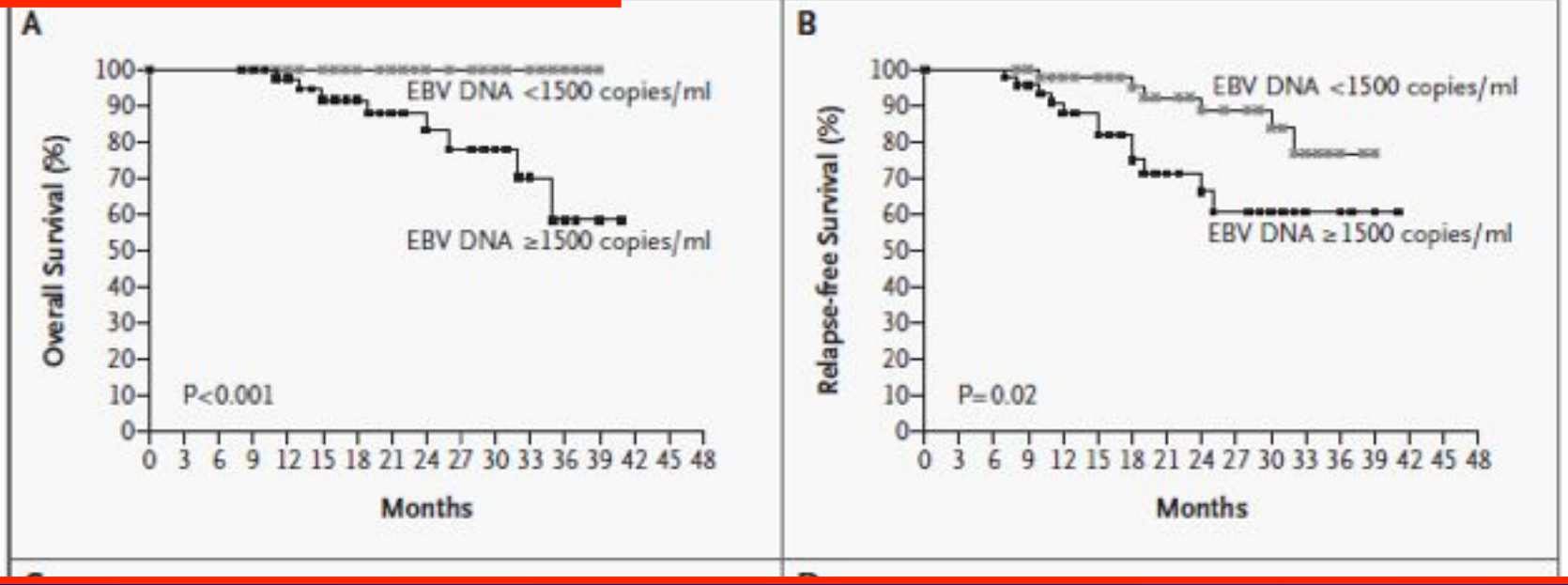
Abbreviation: NS, not significant; GTV-P, primary tumor volume.
*According to the 7th AJCC/UICC staging system. The following parameters were included in the Cox proportional hazards model by backward elimination: age (≥45 vs. <45 years), gender (female vs. male), World Health Organization (WHO) histological grade (Type II vs. Type I), T classification (T2 vs.T1; T4 vs.T3), N classification (N1–3 vs. N0), use of chemotherapy (with vs. without) and GTV-P (≥19 ml vs.<19 ml).

Guo R, Radiother Oncol, 2012



Quantification of Plasma Epstein–Barr Virus DNA in Patients with Advanced Nasopharyngeal Carcinoma





Lin JC, N Engl J Med, 2004

CLINICAL INVESTIGATION — Head and Neck

FURTHER IMPROVEMENT IN OUTCOMES OF NASOPHARYNGEAL CARCINOMA WITH OPTIMIZED RADIOTHERAPY AND INDUCTION PLUS CONCOMITANT CHEMOTHERAPY: AN UPDATE OF THE MILAN EXPERIENCE

MAURO PALAZZI, M.D.,* ESTER ORLANDI, M.D.,* PAOLO BOSSI, M.D.,† EMANUELE PIGNOLI, PH.D.,‡ PAOLO POTEPAN, M.D.,§ MARCO GUZZO, M.D.,‖ MARZIA FRANCESCHINI, M.D.,* GABRIELE SCARAMELLINI, M.D.,‖ GIULIO CANTÙ, M.D.,¶ LISA LICITRA, M.D.,† PATRIZIA OLMI, M.D.,* AND STEFANO TOMATIS, PH.D.‡

Units of *Radiotherapy, †Head and Neck Medical Oncology, ‡Medical Physics, §Radiology, ‖Otorhinolaryngology, and ¶Maxillo-Facial Surgery, Istituto Nazionale Tumori, Milan, Italy

Int J Rad Oncol Biol Phys, 2009

Critical analysis of locoregional failures following intensity-modulated radiotherapy for nasopharyngeal carcinoma

Ester Orlandi*[1], Stefano Tomatis[2], Paolo Potepan[3], Paolo Bossi[4], Valeria Mongioj[2], Mauro Carrara[2], Mauro Palazzi[5], Marzia Franceschini[6], Cristiana Bergamini[4], Laura Locati[4], Eva Iannacone[1], Marco Guzzo[7], Tullio Ibba[7], Flavio Crippa[8], Lisa Licitra[4], Emanuele Pignoli[2] & Carlo Fallai[1]

[1]Radiotherapy 2, Fondazione IRCCS Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy
[2]Medical Physics, Fondazione IRCCS Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy
[3]Radiology, Fondazione IRCCS Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy
[4]Head & Neck Medical Oncology, Fondazione IRCCS Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy
[5]Radiotherapy Unit, Niguarda Ca' Granda Hospital, Milan, Italy
[6]Radiotherapy 1, Fondazione IRCCS Istituto Nazionale dei Tumori, Via Venezian 1, 20133 Milan, Italy
[7]Otolaryngology Head & Neck surgery, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy
[8]Nuclear Medicine, Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy
*Author for correspondence: Tel.: +39 02 2390 3265 = Fax: +39 02 2390 2472 = ester.orlandi@istitutotumori.mi.it

Future Oncology, 2013

SCOPO

Analizzare l'outcome clinico e i fattori prognostici in una serie consecutiva di 156 pazienti (pz) affetti da carcinoma del rinofaringe trattati con finalità curativa con tecniche di radioterapia (RT) ad intensità modulata (IMRT, Intensity Modulated Radiation Therapy o VMAT, Volumetric Modulated Arc Therapy) tra il 2004 e il 2013

Caratteristiche dei pazienti (N=156)

Sesso, M:F	107 : 49(69%: 31%)
Età mediana (*range*)	49 (18 - 92)
Istologia	
Indifferenziato (WHO type 3)	129 (83%)
Scarsamente differenziato (WHO type 2)	15 (9%)
Cheratinizzante (WHO type 1)	12 (8%)
Valore basale plasmatico di EBV-DNA , copie/ml (98 pts, pos in 66)	544.5 (0-162.021)
Stadi I	2 (2%)
IIA	1 (1%)
IIB	27 (17%)
III	45 (29%)
IV A	31 (19%)
IV B	50 (32%)
Trattamento	
RT esclusiva	7 (4%)
concomitante RT-CT (platino basata)	30 (20%)
CT induzione (TPF) → RT-CT	119 (76%)

Radioterapia

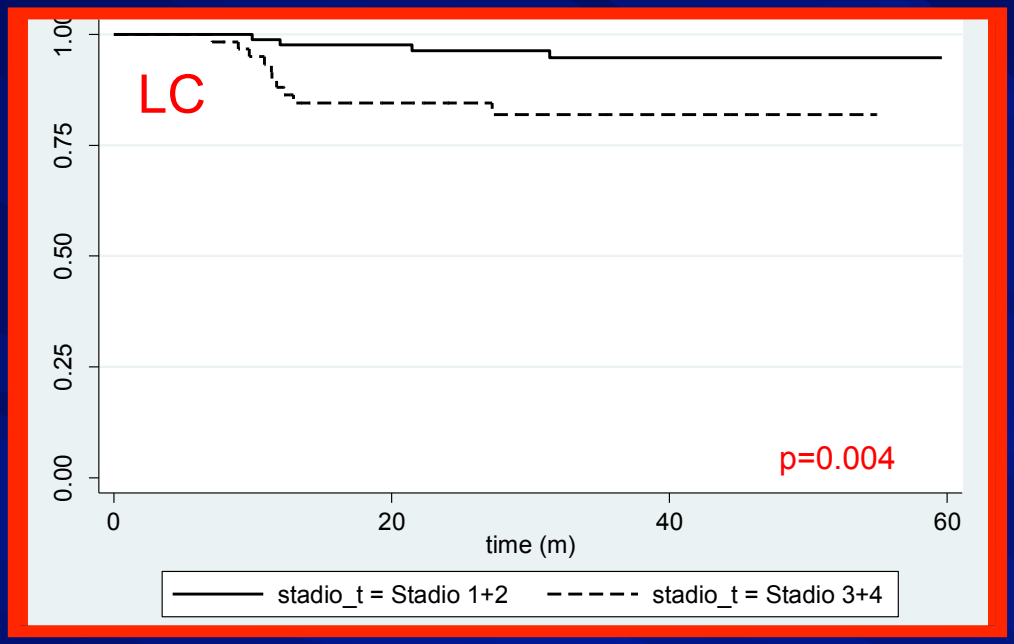
GTV (T+N), *range*	Volume mediana 53.1cc (3.56-423 cc)
Tecnica	
IMRT convenzionale	96 (61%)
VMAT	60 (39%)
Regime RT	
Convenzionale (70 Gy in 35 frs)	127 (18.6%)
Moderatamente accelerato (70 Gy in 33 fractions)	29 (81.4%)
Tempo globale di trattamento	52 gg (range, 45-60)

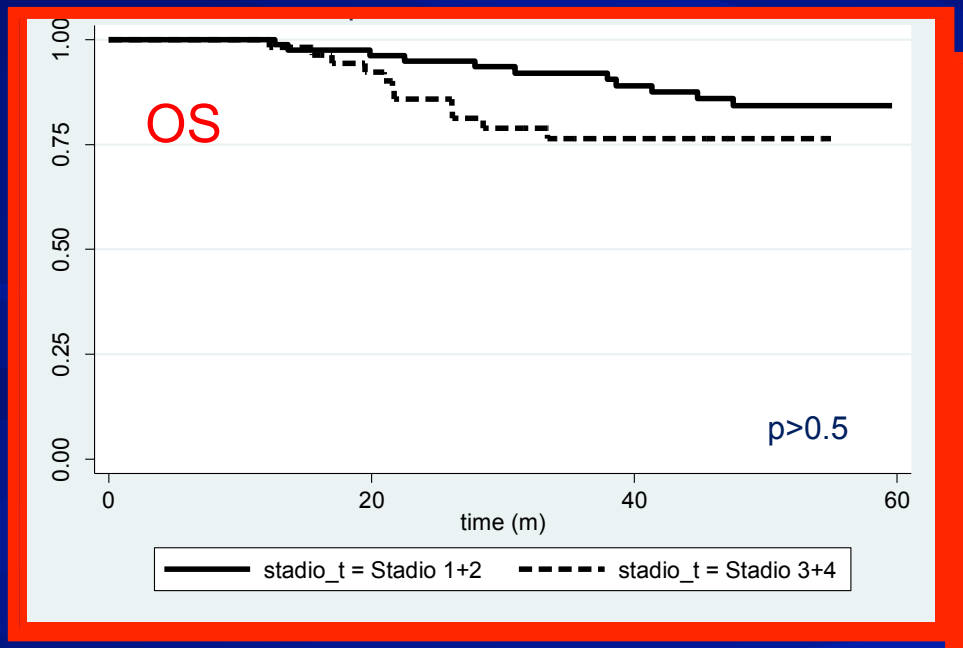
Outcome

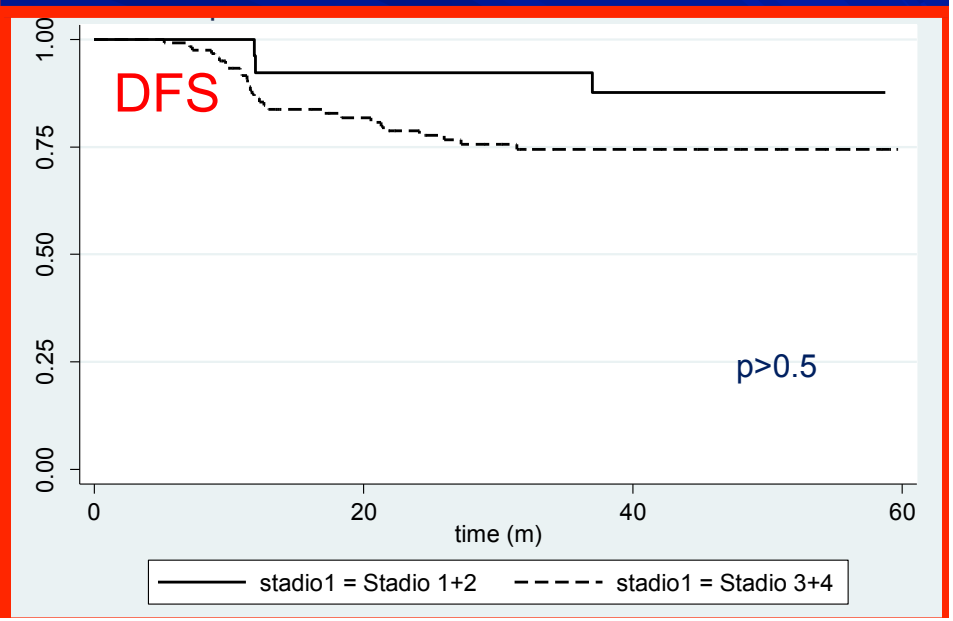
Follow-up mediano 49.5 mesi (range 5.7-112.4 mesi)

Endpoint	**2-anni**	**5-anni**
Sopravvivenza globale (OS)	91.4%	81.1%
Sopravvivenza libera da malattia (DFS)	81.3%	76.9%
Controllo locale (LC)	91.4%	89.6%
Controllo locoregionale (LRC)	90%	87.1%
Controllo a distanza (MC)	90.2%	88.3%

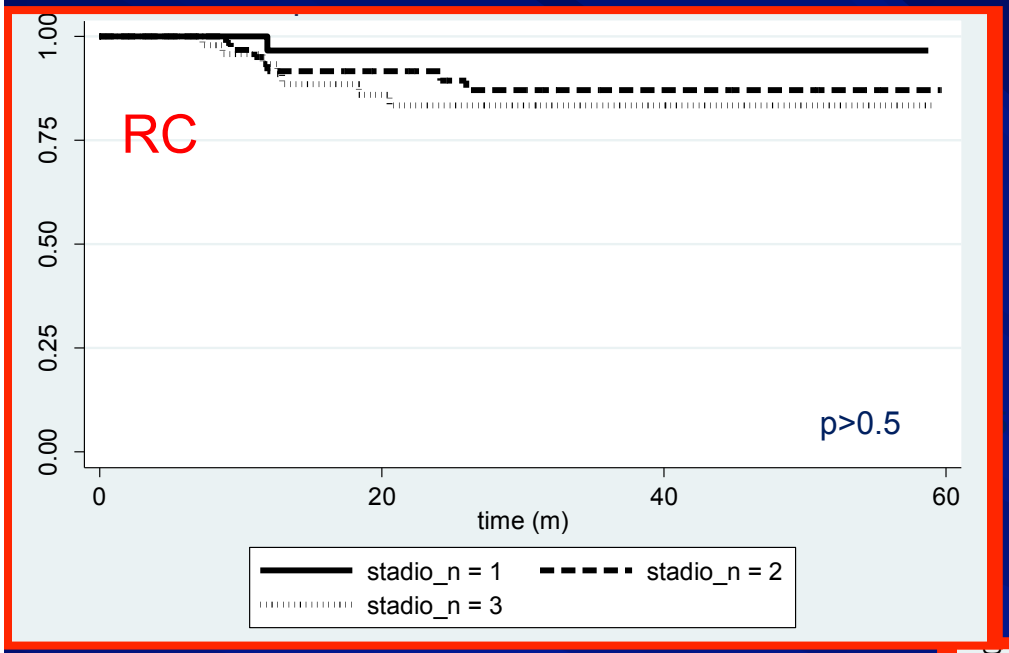
Impatto stadio T

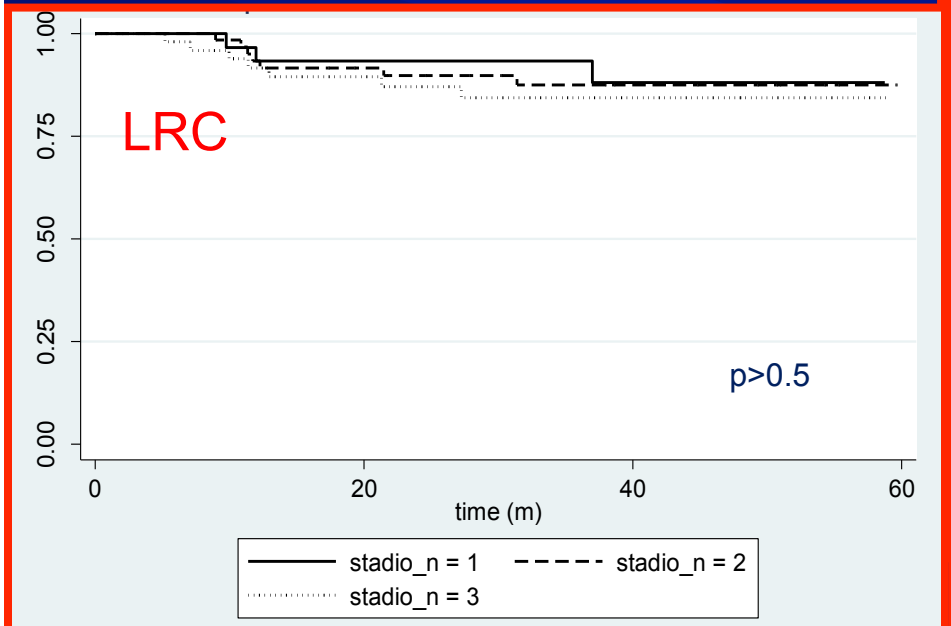


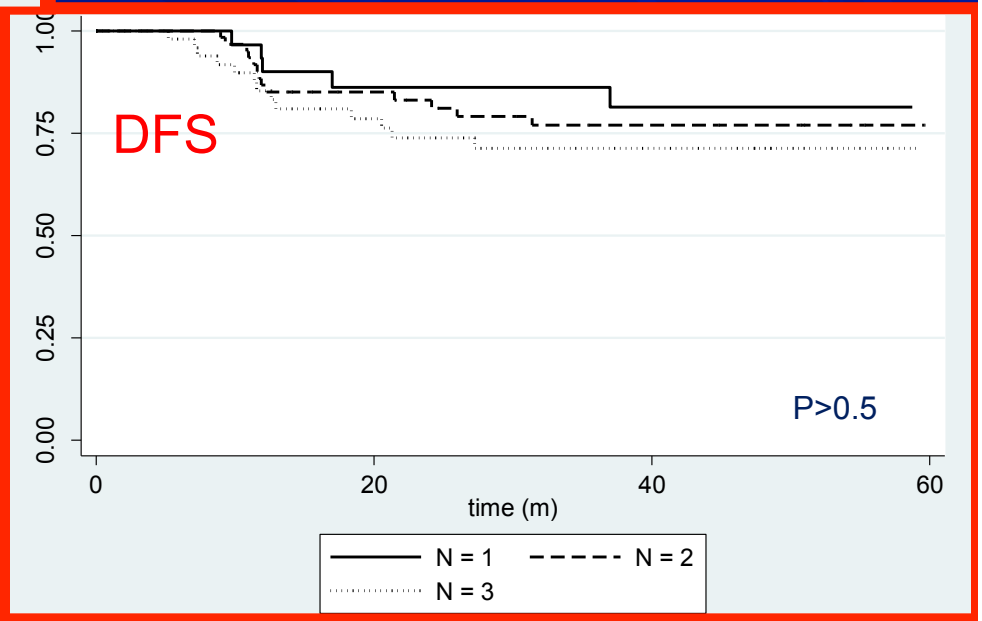




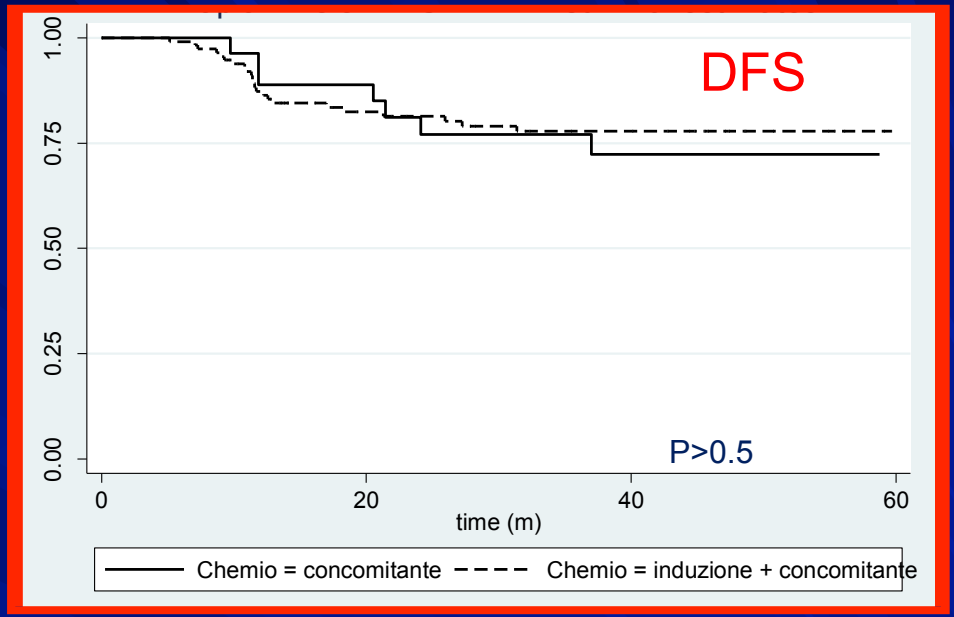
Impatto stadio N

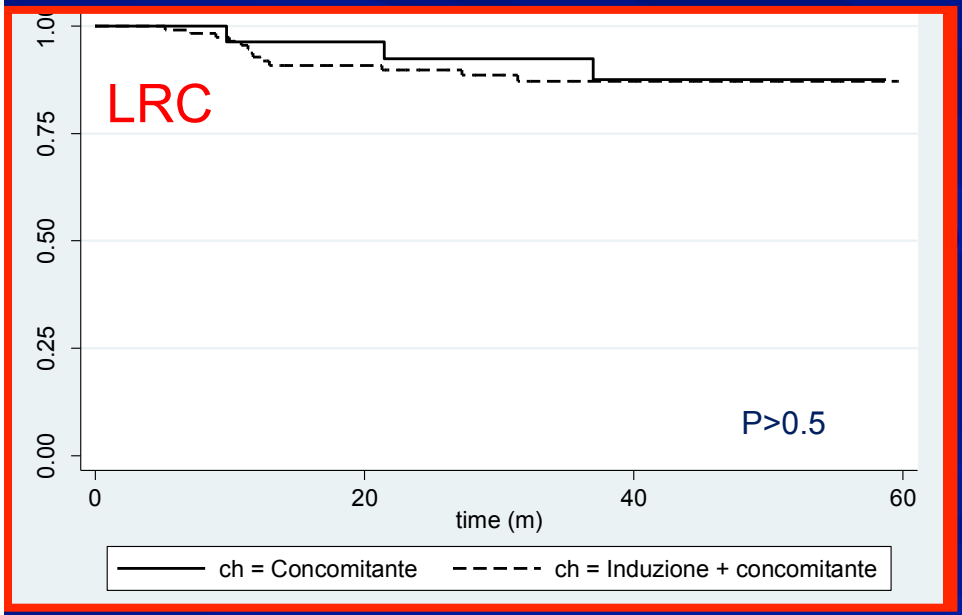


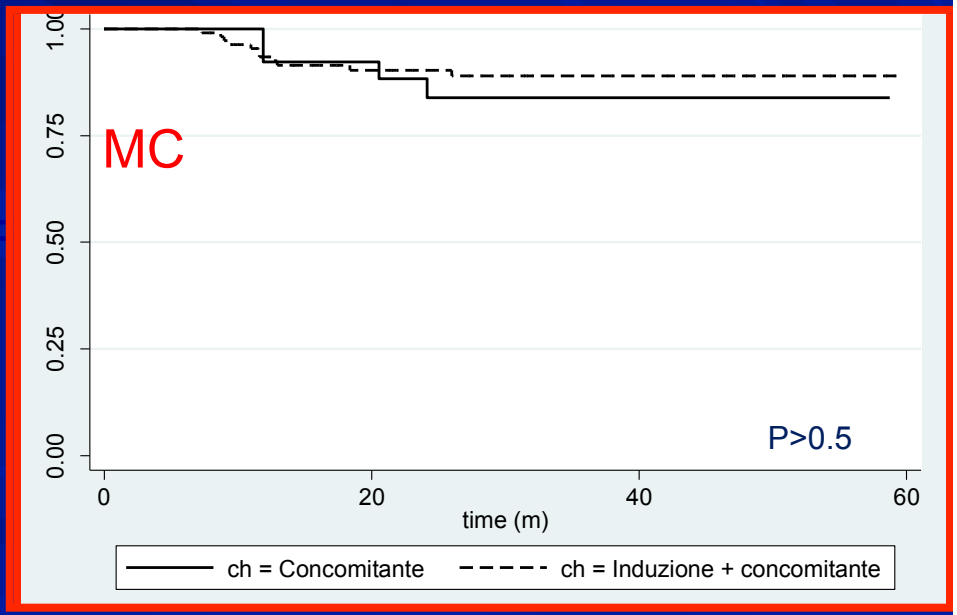




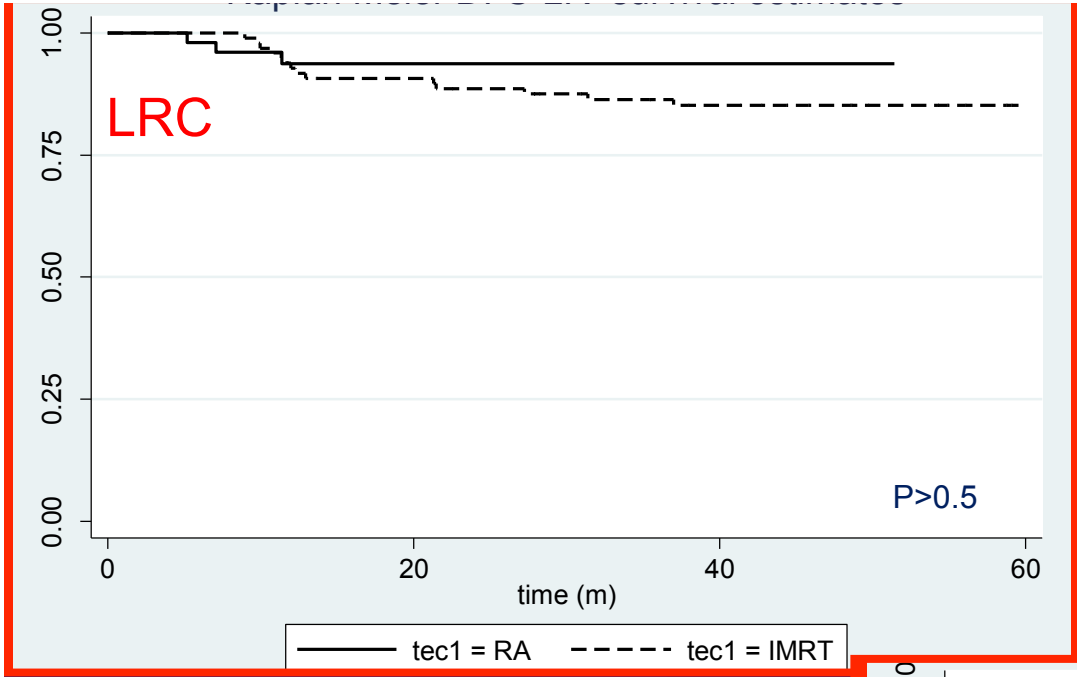
Impatto regime CT

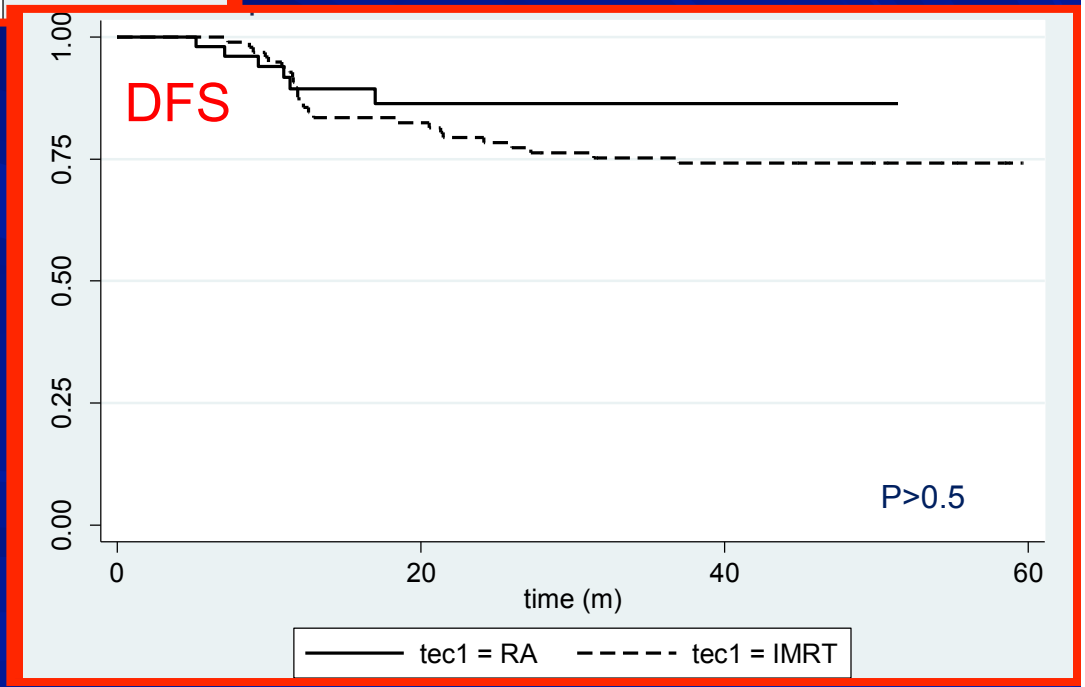




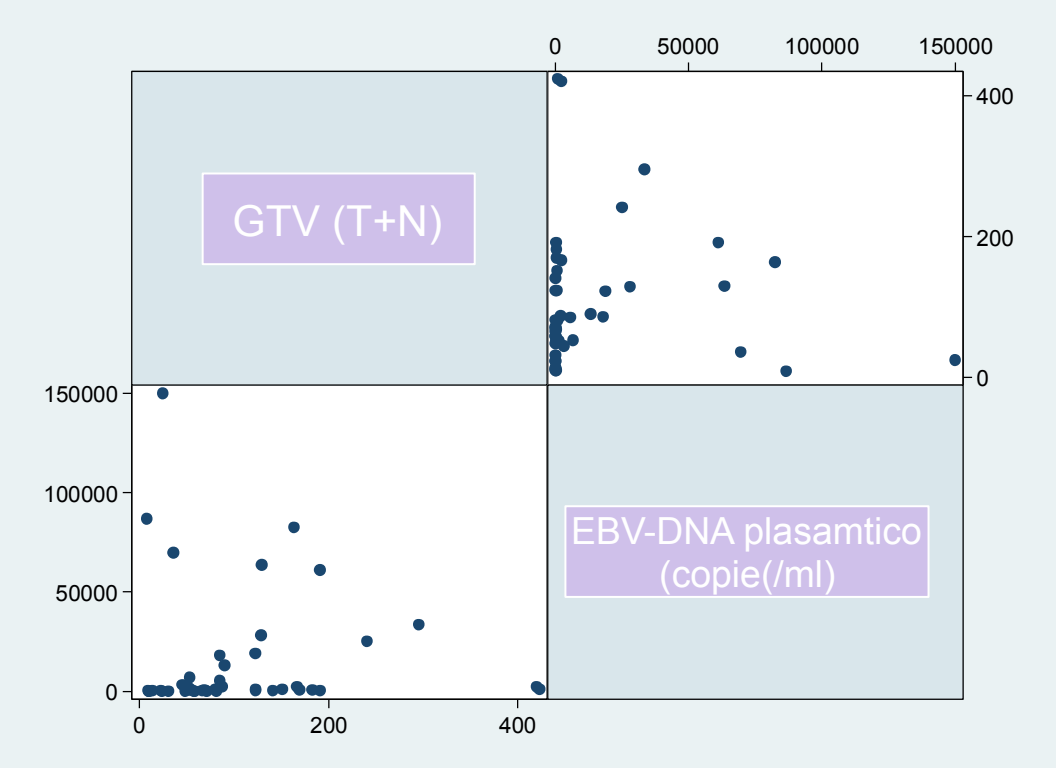


Impatto tecnica



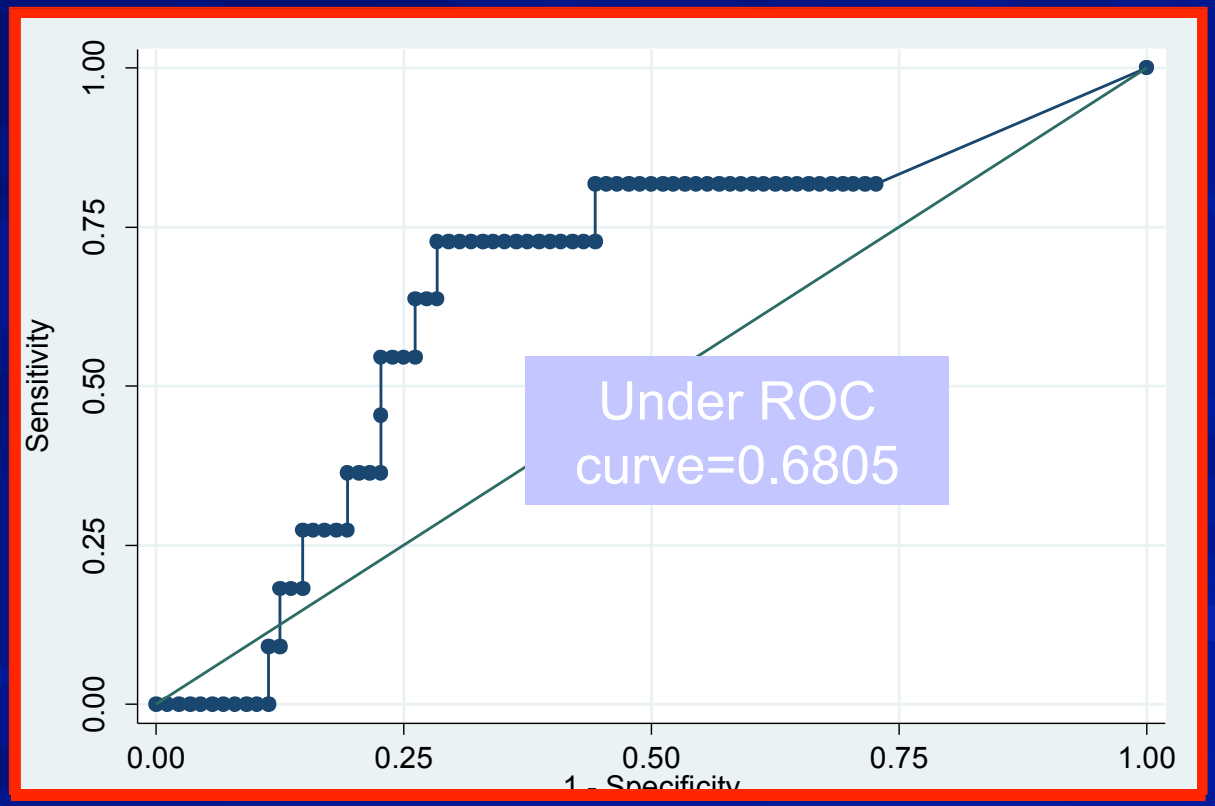


Dosaggio EBV-DNA plasmatico



	T1+2	T3+T4	p-value
EBV-DNA (copie/ml)	636 ± 1743	12802 ± 25972	0.053 t-Student's test

CURVA ROC PER EBV_DNA E RECIDIVA A DISTANZA



1500 copie

Analisi multivariata

	OS		DFS		LC		RC		MC	
	OR	p-value	OR	p-value	OR	p-value	OR	p-value	OR	p-value
Stadio T	1.32	0.666	2.32	0.151	27.8	0.023	1.92	0.266	1.42	0.663
Stadio N	0.84	0.693	1.73	0.190	2.36	0.202	1.57	0.487	2.32	0.171
EBV DNA (cut off 1500)	1.49	0.540	1.16	0.803	0.28	0.192	0.30	0.294	3.18	0.141
Tecnica	1.41	0.576	1.61	0.367	2.86	0.268	0.95	0.949	1.95	0.329
CT	1.37	0.744	0.30	0.114	0.22	0.313	0.93	0.957	0.16	0.156

Analisi univarata:

1. tecnica fattore prognostico significativo per LC,RC.
2. dosaggio EBV-DNA fattore prognostico significativo per sopravvivenza libera da M.

CONCLUSIONI

1. Il trattamento intensificato di IMRT/VMAT e CHT consente di ottenere eccellenti outcomes clinici.

2. La paucità dei tradizionali fattori prognostici trovati può sottendere la necessità di indagarne di nuovi, come una possibile ‘signature’ genetica di radioresistenza.

3. Potenziale esistenza di un valore soglia di EBV-DNA prognostico di controllo a distanza anche in aeree geografiche non endemiche.

Massive thanks to

Anna Cavallo,
SS Fisica Medica
INT, Milano

Elena Deponti,
UO Fisica Sanitaria,
San Gerardo, Monza

Alessandro Iacovelli,
SC Radioterapia 2
INT, Milano