RE-IRRADIAZIONE MEDIANTE RADIOCHIRURGIA ROBOTICA DI RECIDIVE DI TUMORE TESTA-COLLO: ESPERIENZA MONOCENTRICA DELL'UNIVERSITA' DI FIRENZE

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Background

•*Despite aggressive treatment modalities, local recurrence or persistent disease is seen at rate as high as 3-50%. (Roh KW,IJROBP, 2009).*

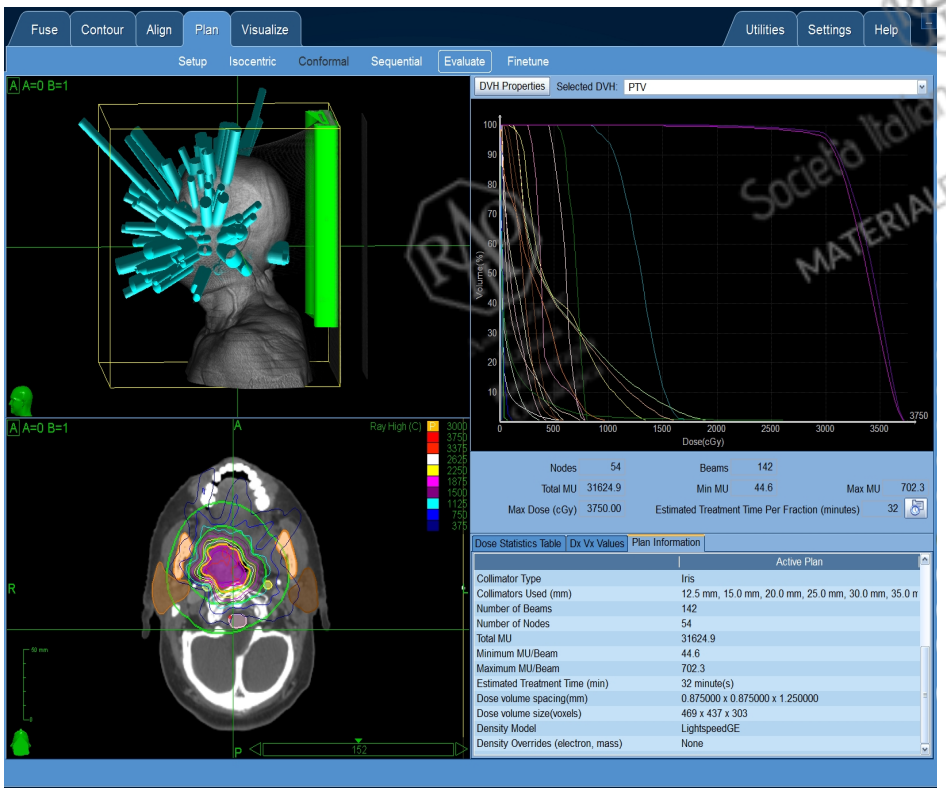
• *In current practice, most patients are offered chemotherapy with palliative intent, with a median survival of 10 months (Vermorken,2008)*

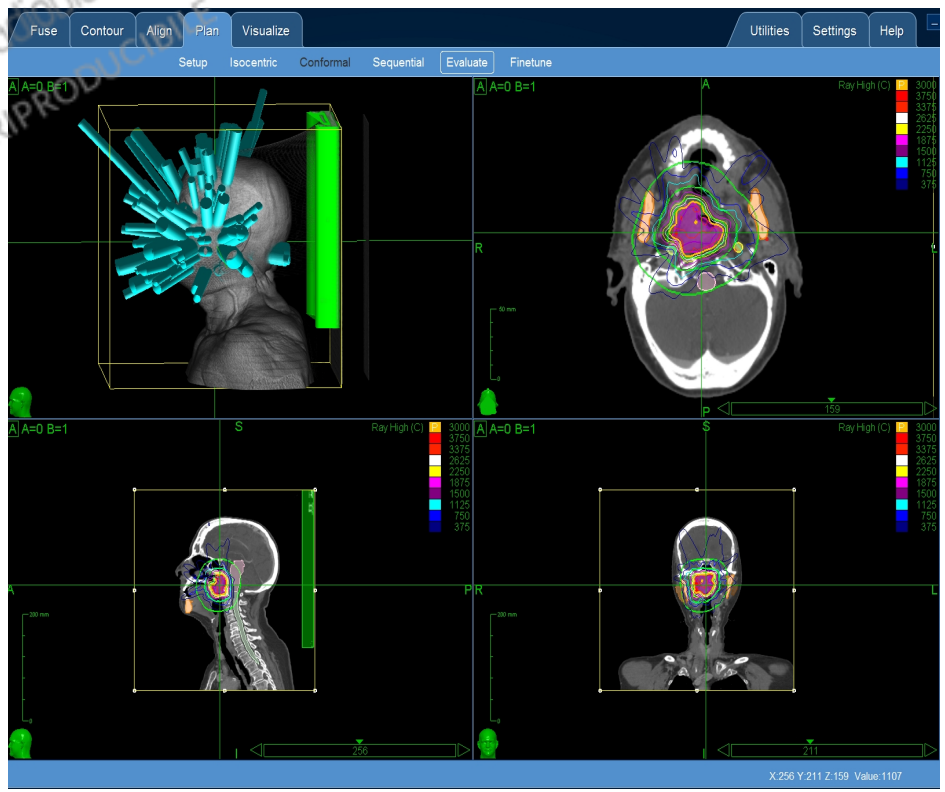
• *Surgery improves prognosis, although not feasible in the majority of cases (Temam S, H&N, 2005)*

What part does radiotherapy play in the treatment of local-regional recurrence?

Purpose

To report a 3-year update of our institutional experience with stereotactic body radiation therapy (SBRT) for re irradiation of locally recurrent head and neck cancer, focusing on ***toxicity and perliminary clinical outcome.***





Material and Methods

From **February 2012** to **November 2015:**

37 patients re-irradiated:

-Median previous RT dose: 66 Gy (range 40 – 70 Gy)

-Median SBRT dose of 30 Gy over 5 fx (range 25-35 Gy, 80% isodose)

-Tumor control and survival were calculated using the Kaplan-Meier method

-CTCAE v4.0

Material and Methods

- Non invasive immobilisation with thermoplastic masks;

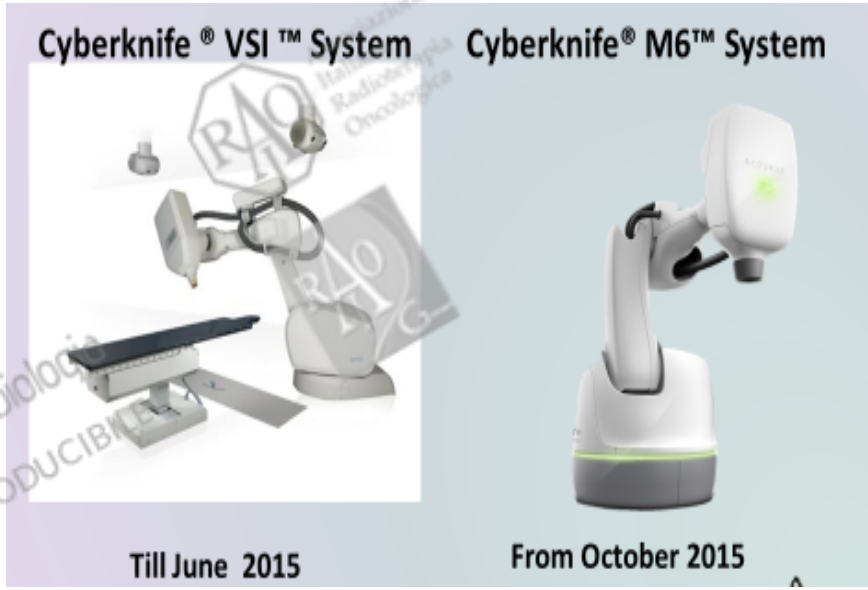
- A planning CT without contrast is acquired using multislice scanner (Lightspeed 16 GE Medical System, WI) at 1.25 mm slice thickness..

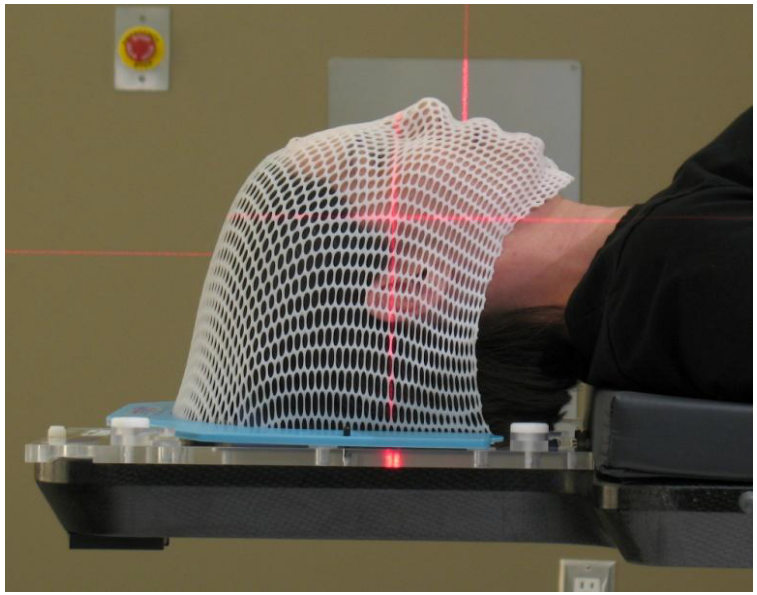
- A contrast-enhanced CT scan is also acquired.

- For all patients fusion with **MR** imaging studies is performed to help delineate the **GTV** and **OAR**.

- **GTV-PTV: 1 mm:** Plans are optimised with Multiplan® Treatment Planning System and dose is calculated by a ray tracing algorithm

- Till june 2015 we used CKVSI System, from october 2015 CK M6





Material and Methods

Characteristic		Value (%)
Age		
	Median	65
	Range	46-93
Sex		
	Male	28 (75,6%)
	Female	9 (24,4%)
Target of Re-RT		
	Neck lymph nodes	9 (24%)
	Paranasal sinuses	7 (19%)
	Nasopharynx	5 (13%)
	Oral cavity	5 (13%)
	Larynx	3 (8%)
	Parotid gland	2 (5%)
	Other sites	6 (16%)
KPS		
	100-90	24 (64,8%)
	80-70	13 (35,2%)

Median GTV 41 cc (8-211cc)

SBRT modality	N	%
Cyberknife	37	100%
Total dose (Gy)		
25	18	49%
30	16	43%
35	3	8%
Prior chemotherapy		
Yes	12	33%
No	25	67%
Primary site		
Nasopharynx	4	11%
Oropharynx	6	16%
Hypopharynx	2	5%
Larynx	7	19%
Oral cavity	8	22%
Nasal cavity	2	5%
Paranasal sinus	6	16%
Parotid gland	2	5%

Median time to retreatment 27 months (range 11-171 months)

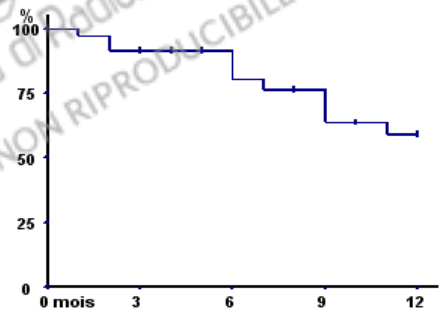
Results

We evaluate:

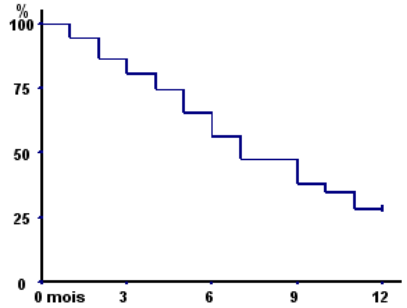
•***Outcome of patients with recurrent, unresectable HNC re-irradiation with SBRT***

✓37/37 patients were evaluable at the moment of the analysis
✓ All completed treatment
✓parameters of evaluation of the patients: age, time re-rt, KPS
✓ Median follow-up 12 months (range 1-45 months)

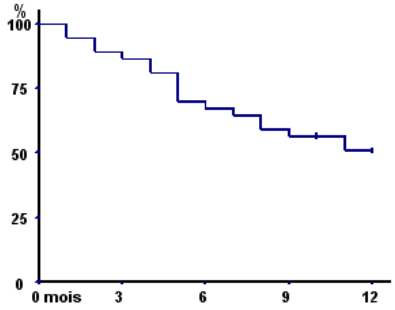
OUTCOME ENDPOINT	1year (%)	Months (Median)
LC	70,3 %	14
PFS	35,1%	7,2
OS	51,3%	13
CSS	63,2%	17



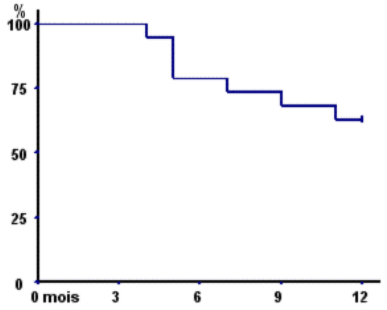
1-yr LC



1-yr PFS

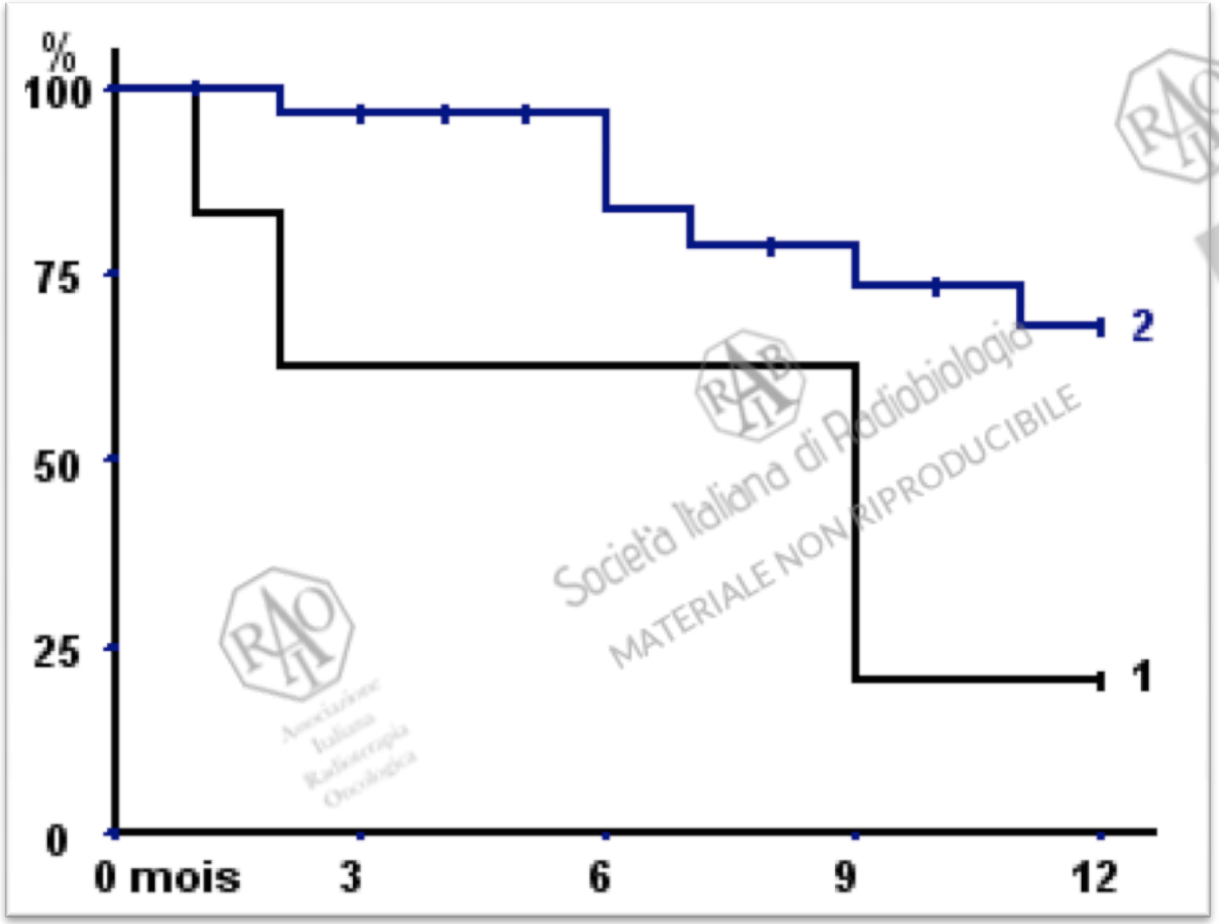


1-yr OS



1-yr CSS

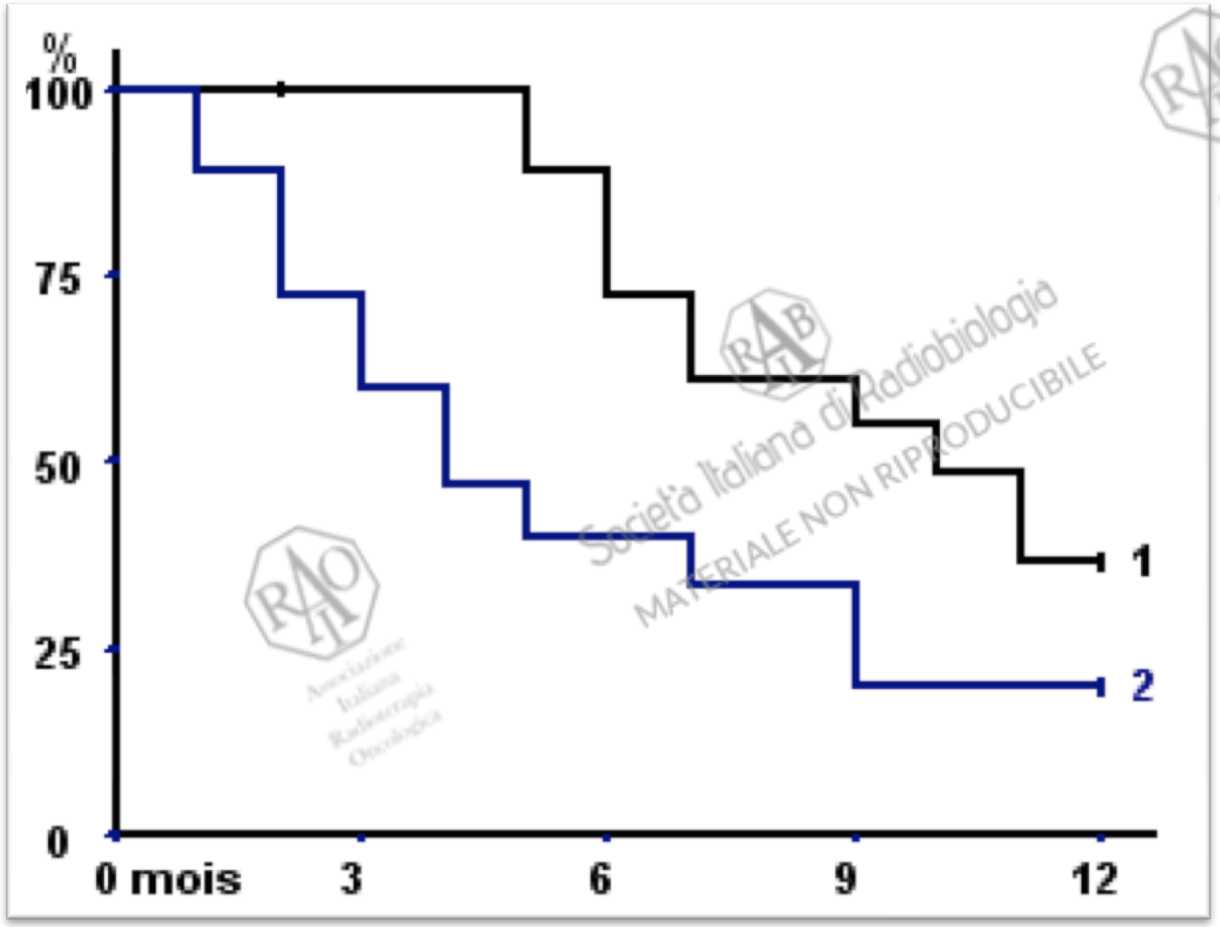
Results :***Local Control***



<u>LC ANALISYS</u> (log-rank)

UNIVARIATED: DELAY 1RT- REIRR <12 MONTHS IMPAIR OUTCOME (P=0.025)

Results: *Progression Free Survival*



< 65 y

> 65 y

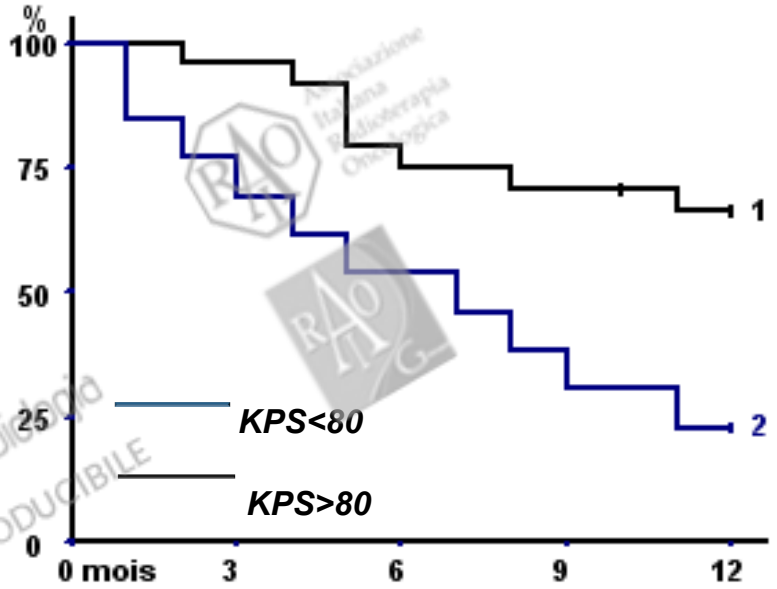
PFS ANALISYS (log-rank)

UNIVARIATED: age >65 IMPAIR OUTCOME (P=0.039)

Results: *Survival*

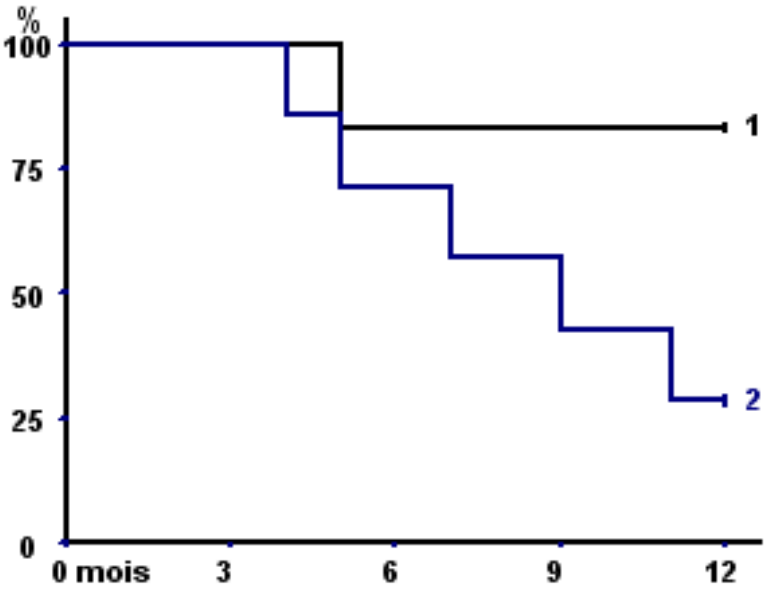
OS ANALISYS

UNIVARIATED (log-rank):
age > 65: **p=0.0032**
KPS<80: **p=0.0075**
CCI>5: **p=0.014**
MULTIVARIATE ANALISYS (CoxModel)
KPS<80: HR 3.04 (1.39-6.68)



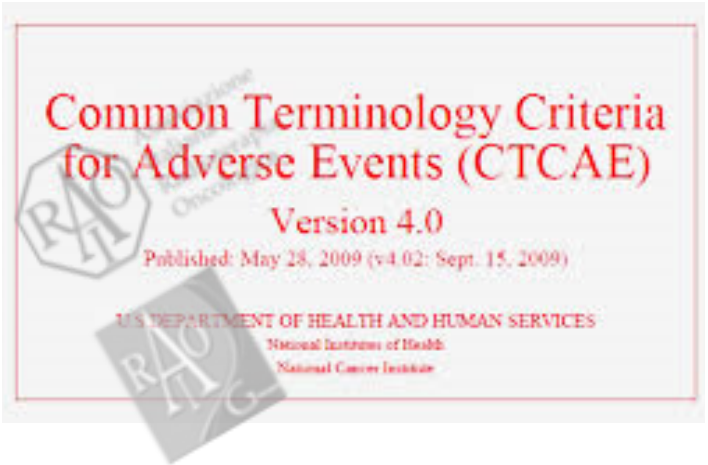
CSS ANALISYS

UNIVARIATE ANALISYS (log-rank test)
age > 65 : **p=0.045**
KPS<80 : **p=0.024**
MULTIVARIATE ANALISYS (CoxModel)
KPS<80: HR 3.28 (1.01-10.69)



Results : *Toxicity*

- ***Toxicity-correlation***



The majority of patients did not develop any acute side effect.

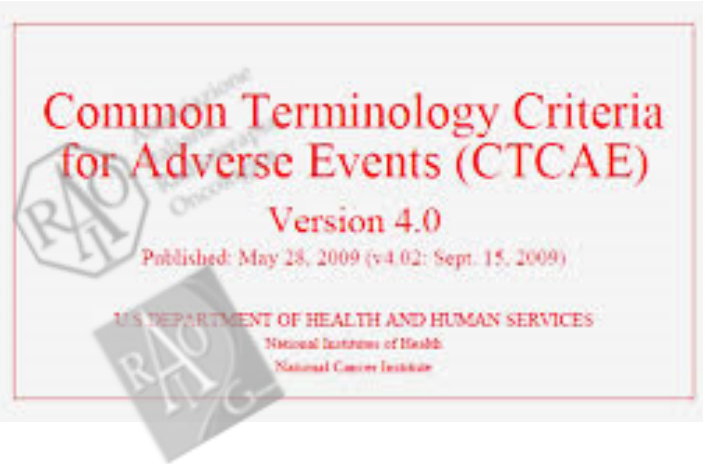
1 of patient developed <u>acute</u> grade 3 toxicity

ACUTE TOX	G1 N° (%)	G2 N° (%)	G3 N° (%)	G4 N° (%)
Salivary duct inflammation:	4 (11%)	5 (13%)	(0%)	(0%)
Mucositis oral	5 (13%)	5 (13%)	1 (3%)	(0%)
Dermatitis	5 (13%)	(0%)	(0%)	(0%)
Xerostomia	3 (8%)	3 (8%)	(0%)	(0%)
Dysphagia	6 (16%)	2 (5%)	(0%)	(0%)

Results: *Toxicity*

- ***Toxicity-correlation***

3 of patients developed late grade 3 toxicity



LATE TOX	G1 N° (%)	G2 N° (%)	G3 N° (%)	G4 N° (%)
Superficial soft tissue fibrosis	10 (27%)	2 (5%)	1 (3%)	(0%)
Trismus	2 (5%)	2 (5%)	(0%)	(0%)
Injury to carotid artery	(0%)	(0%)	1 (3%)	(0%)
Dysphagia	3 (8%)	2 (5%)	1 (3%)	(0%)

Conclusion

- ***Stereotactic re-irradiation is a feasible and well-tolerated option for local-regionally recurrent head and neck cancer***

- ***Prolunged local control in selected patients, despite the large median recurrent GTV volume treated***

- ***Low KPS at Re-RT should be considered a strong factor in predicting an unfavorable outcome***

- ***Re-irradiation time <12 months is negative predictor in LC analysis***

Grazie per l'attenzione!