Università degli Studi di Torino

Azienda Ospedaliera San Giovanni Battista di Torino

Confronto clinico e dosimetrico tra IMRT e 3DCRT nell'approccio chemio-radioterapico per il trattamento neoadiuvante dell'adenocarcinoma del retto localmente avanzato

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OBIETTIVO DELLO STUDIO

Confrontare i risultati in termini clinici e dosimetrici in pazienti affetti da adenocarcinoma del retto in stadio localmente avanzato, trattati con tecnica 3DCRT ovvero IMRT concomitante a chemioterapia a scopo neoadiuvante

CARATTERISTICHE DEL CAMPIONE (1)

01/2009 ÷ 06/2011

49 pazienti

Adenocarcinoma del retto

	3DCRT *(24)*	**IMRT** *(25)*	**TOTALE**
Età			
Mediana	63	66	64
Range	38-83	41-75	38-83
Sesso			
Maschile	15	11	26
Femminile	9	14	23
Stadio clinico			
T2 N+	1	1	2
T3 N0	6	9	15
T3 N+	11	13	24
T4 N0	2	0	2
T4 N+	4	2	6

CARATTERISTICHE DEL CAMPIONE (2)

Diagnosi isto-patologica
Stadiazione

24 pazienti
3DCRT

+

25 pazienti
IMRT

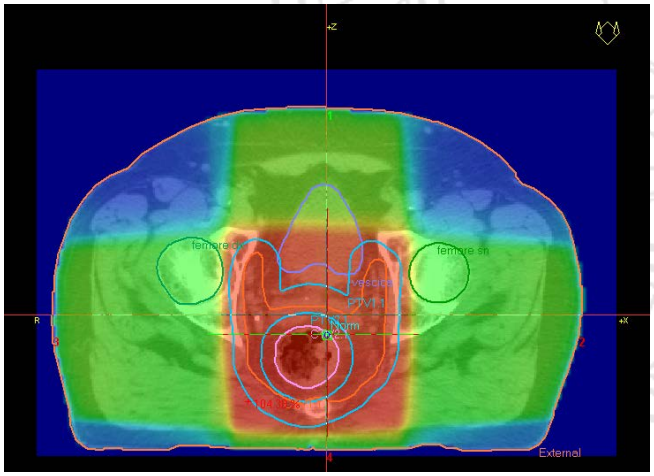
CT concomitante
Capecitabina 1000mg/m2 b.i.d. (gg. 1-14 e 22-35)

Intervento chirurgico entro 6-8
settimane dal termine della RT

TRATTAMENTO RADIOTERAPICO

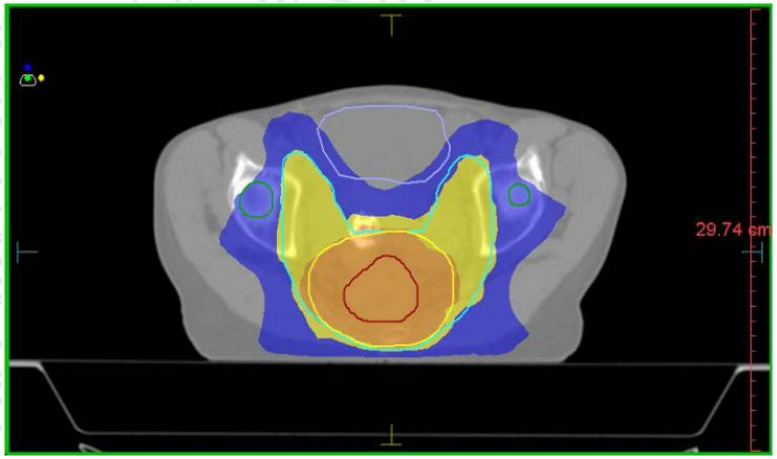
3DCRT

1.8 Gy, 5 giorni alla settimana per 6 settimane, dose totale 45 Gy + boost di 5.4 Gy



IMRT

1.8-2 Gy SIB, 5 giorni alla settimana per 5 settimane, dose totale 45 Gy al PTV1.1 e 50 Gy al PTV1.2



ANALISI DOSIMETRICA

	3DCRT			IMRT	
	Dmean	***Dmax***		***Dmean***	***Dmax***
Tenue	46 Gy	53 Gy		32 Gy	52 Gy
Vescica	50 Gy	54 Gy		43 Gy	49 Gy

TOSSICITÀ ACUTA (RTOG)

	3DCRT				IMRT		
Tipo	**G2**	**G3**	**G4**		**G2**	**G3**	**G4**
Astenia	3	0	0		1	0	0
Cute (perineo)	3	1	0		2	0	0
GI	4	3	0		4	1	0
GU	2	0	0		0	0	0

CONCLUSIONI E DISCUSSIONE (1)

- Riduzione significativa della dose media a vescica ed anse intestinali ottenibile con IMRT rispetto a 3D-CRT
- In termini di sola tossicità acuta, al momento è ottenibile un minimo guadagno, relativo ad una minore tossicità GI e GU

MA

- Campione di pazienti esiguo per poter eseguire una analisi statistica significativa

CONCLUSIONI E DISCUSSIONE (2)

"Intensity Modulated Radiation Therapy (IMRT) for Rectal Cancer Can Reduce Acute Toxicities of Chemoradiation".

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Purpose/Objective(s): The standard of care for locally advanced rectal cancer consists of preoperative chemoradiation as established by multiple clinical trials demonstrating a benefit in local control, reduction of acute and long-term toxicities, and survival benefit. Further reducing toxicities of therapy may allow incorporation of novel radiosensitizers or dose escalation to improve outcomes. IMRT has been shown in dosimetric studies to reduce doses of irradiated small bowel. The purpose of this study was to evaluate the toxicity profiles with IMRT versus 3-dimensional conformal radiotherapy (3DCRT) for rectal cancer.
Materials/Methods: Patients with locally advanced rectal cancer treated with 3DCRT or IMRT were retrospectively reviewed after IRB approval. Acute toxicity profiles using weekly on-treatment evaluation documentation were graded according to the CTCAE version 3.0. Acute toxicities were evaluated until the time of surgery. IMRT planning was designed using RTOG 0822 criteria and the RTOG contouring guide. Fisher's exact test was applied to test significantly different side effects. Logistic regression models were fitted as a dependent variable and diverting ostomy, tumor location and treatment were entered separately or at the same time as predictors.
Results: Patients received chemoradiation via 3DCRT (n=22) or IMRT (n=20), either preoperatively (3DCRT n=17, IMRT n=16) or postoperatively (3DCRT n= 4, IMRT n=5). Cases were treated to 2500 cGy (n=1), 5040 cGy (n=34), 5400 cGy (n=2), 5580 cGy (n=4) and 5940 cGy (n=1). Grade 0-2 diarrhea occurred more commonly with IMRT (n=20 v. n=19 for 3DCRT) and grade 3-4 diarrhea did not occur with IMRT but did occur with 3DCRT (n=3; p=0.23). When all side effects, including diarrhea, weight loss combined with anorexia, proctitis, pain, nausea and vomiting were combined there were fewer grade 2-4 toxicites with IMRT (3DCRT n=16, IMRT n=9; p=0.11). In a logistic regression model adjusting for diverting ostomy and distance from the anal verge, IMRT appeared to have fewer side effects (log odds ratio = -0.83; p =0.032).
Conclusions: This retrospective comparison shows IMRT has less severe toxicities than does 3DCRT. IMRT is a useful approach in patients anticipated to have more side effects of therapy. Correlation with bowel doses will also help elucidate the true benefit of IMRT.

Jabbour et al. – ASTRO 2010

CONCLUSIONI E DISCUSSIONE (3)

- ✓ Necessario eseguire una analisi più approfondita, con un campione di pazienti tale da consentire una valutazione statistica significativa

- ✓ Valutazione delle eventuali differenze in termini di tossicità tardiva, con follow-up più lungo

Grazie per l'attenzione!