

Dosimetria degli OAR nel trattamento di pazienti con linfomi: vantaggi dell'impiego di un piano inclinato per ridurre i rischi di irradiazione di cuore, mammella e polmone.

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Introduzione e scopo

Ottimizzare piano di trattamento in pazienti giovani affetti da linfoma (Stadio II-III).

Riduzione della dose agli organi a rischio: mammelle (pz di sesso femminile), cuore e polmoni.

Background

IS INTENSITY-MODULATED RADIOTHERAPY BETTER THAN CONVENTIONAL RADIATION TREATMENT AND THREE-DIMENSIONAL CONFORMAL RADIOTHERAPY FOR MEDIASTINAL MASSES IN PATIENTS WITH HODGKIN'S DISEASE, AND IS THERE A ROLE FOR BEAM ORIENTATION OPTIMIZATION AND DOSE CONSTRAINTS ASSIGNED TO VIRTUAL VOLUMES?

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Second Malignant Neoplasms Among Long-Term Survivors of Hodgkin's Disease: A Population-Based Evaluation Over 25 Years

By Graça M. Dores, Catherine Metayer, Rochelle E. Curtis, Charles F. Lynch, E. Aileen Clarke, Bengt Glimelius, Hans Storm, Eero Pukkala, Flora E. van Leeuwen, Eric J. Holowaty, Michael Andersson, Tom Wiklund, Timo Joensuu, Mars B. van't Veer, Marilyn Stovall, Mary Gospodarowicz, and Lois B. Travis



blood

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Risk of multiple primary malignancies following treatment of Hodgkin lymphoma

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	Age at HD Diagnosis					
	< 21 Years	21-30 Years	31-40 Years	41-50 Years	51-60 Years	≥ 61 Years
Female breast**						
Obs	52	67	29	33	21	32
O/E	14.2*	3.7*	1.2	1.7*	1.0	1.1†
AER	18.6	12.9	2.6	13.0	0.3	1.7†

Background II

Cancer Survivorship: Cardiotoxic Therapy in the Adult Cancer Patient; Cardiac Outcomes With Recommendations for Patient Management

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Cardiac risk after mediastinal irradiation for Hodgkin's disease

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Background III

CLINICAL INVESTIGATION

Lymphoma

RADIATION FOR HODGKIN'S LYMPHOMA IN YOUNG FEMALE PATIENTS: A NEW TECHNIQUE TO AVOID THE BREASTS AND DECREASE THE DOSE TO THE HEART

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PATRECIA HORACE, R.N., AND MOHAMMAD R. SALEHPOUR, PH.D.

Table 1. Detailed comparison of mean V30 and V5 in the IB and conventional flat positioning techniques

Result	R breast V5	R breast V30	L breast V5	L breast V30	Heart V5	Heart V30
IB	2	0	8	0.4	29	5
Without IB	6	3	13	3	36	13
Reduction using IB	66	100	39	87	20	62

Abbreviations: V30 = mean volume that received a maximum dose of 30 Gy; V5 = mean volume that received a minimum dose of 5 Gy; IB = inclined board; R = right; L = left.
Values are percentages.

Materiali e metodi I

Caratteristiche pazienti

Gender	
Female	15
Male	4
Pathology	
HL	14
NHL	5
Stage	
Remissione completa post CHT (ABVD/CHOP/R-CHOP)	
III	4
Treated node area	
Mediastinum	7
Mediastinum + svcl	12
Total dose	
30 Gy	14
36 Gy	5

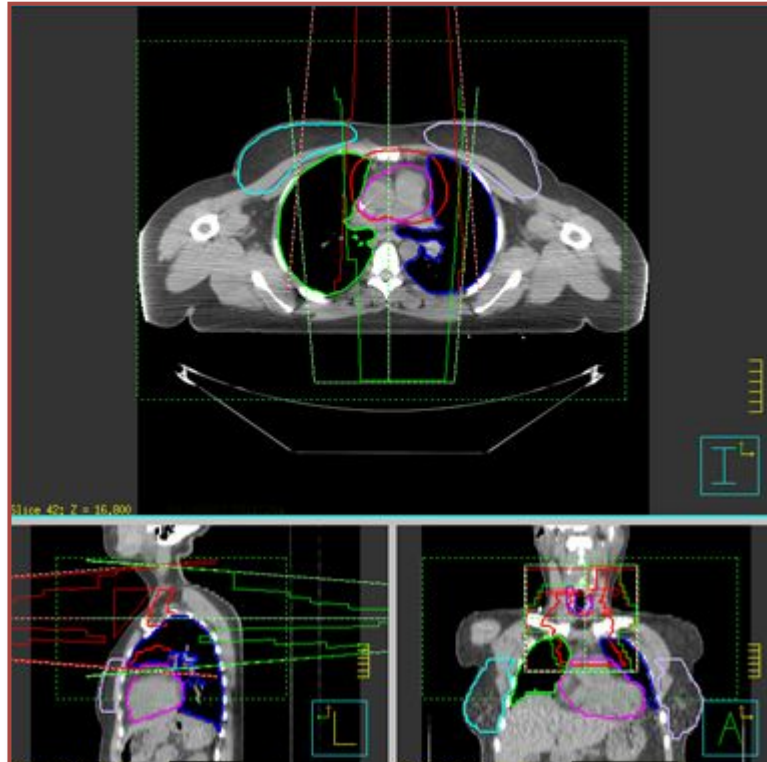
Materiali e metodi II



Due TC di centraggio:

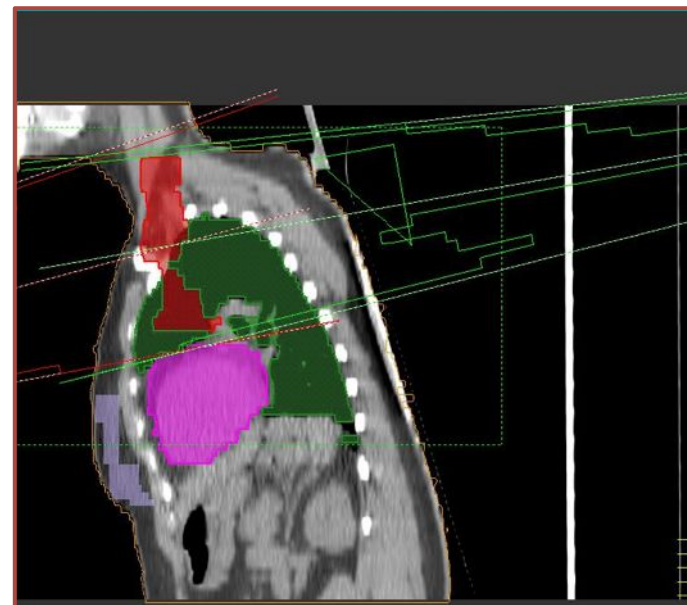
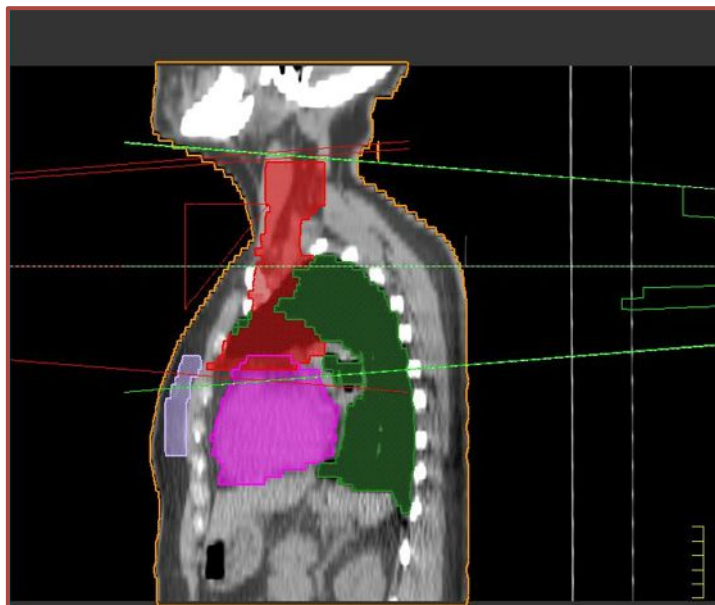
- posizione supina standard
- piano inclinato a 15°

Materiali e metodi III



- OAR (cuore, mammelle, somma polmoni)
- PTV (ICRU 62), limiti anatomici PET pre e post-CHT
- Stesso operatore

Materiali e metodi IV



- Elaborazione dei due piani (in posizione supina standard e con IB)
- AP/PA
- Confronto dei rispettivi DVH (V5, V10, V20, V30)
- Trattamento effettuato in posizione standard

Risultati – mammella

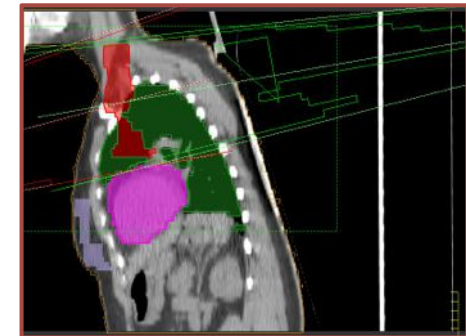
OAR	V5 cc	Percentage reduction %	V20 cc	Percentage reduction %	V30 cc	Percentage reduction %
Right breast						
Standard position	28.5	17.8% (p 0.025)	14.9	26.6% (p 0.0025)	8.2	31.7 % (p 0.0025)
IB position	23.4		10.9		5.6	
Left Breast						
Standard position	44.1	34% (p 0.001)	28.1	45% (p 0.005)	20.3	44% (p 0.005)
IB position	29.15		15.4		11.3	

Risultati II – cuore e polmone

OAR	V5 cc	Percentage reduction %	V10 cc	Percentage reduction %	V20cc	Percentage reduction %	V30 cc	Percentage reduction %
Heart								
Standard position	152.8	8% (p 0.005)	136.7	9.8 % (p 0.025)				
IB position	140.5		123.2					
Lung (somma polmoni)								
Standard position			581.6	Non vantaggio (p 0.40)	426.6	Non vantaggio (p 0.53)	176.9	Non vantaggio (p 0.47)
IB position			607.2		459.4		193.6	

Piano inclinato

- tecnica semplice, non costosa, riproducibile
- risparmio considerevole di dose alle ghiandole mammarie
- risparmio sul volume cardiaco (possibile risparmio dell'origine delle arterie coronarie)
- nessun vantaggio per la dose al polmone



Grazie per l'attenzione

