



ASSOCIAZIONE ITALIANA RADIOTERAPIA ONCOLOGICA
Piemonte Valle d'Aosta Liguria



Sanremo
13 dicembre 2014

V CONVEGNO
GRUPPO INTERREGIONALE AIRO

**TOSSICITA' ACUTA E SUBACUTA
MAMMARIA IN TRATTAMENTO
RADIANTE ADIUVANTE IPOFRAZIONATO IN
DIECI SEDUTE**



Radioterapia adiuvante mammella ipofrazionata:

- La suddivisione del ciclo di radioterapia in un numero minore di frazioni, studiata in molti centri di eccellenza in tutto il mondo, si è già dimostrata **ugualmente efficace** rispetto al programma effettuato con il ciclo standard, sia dal punto di vista del **controllo locale** di malattia che da quello degli **effetti collaterali**.
- **Qualità della vita**: minore impatto sulla vita sociale, familiare e lavorativa delle pazienti.
- Maggiore eleggibilità al trattamento per **pazienti anziane**.
- Riduzione dei **tempi d'attesa**.



Studi randomizzati sull'ipofrazionamento:

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REVIEW ARTICLE

Frontiers in Radiotherapy for Early-Stage Invasive Breast Cancer

Christine M. Fisher and Rachel Rabinovitch



	Week 1	Week 2	Week 3	Week 4	Week 5	Total dose	Fractionation
Standard fractionation						50 Gy	2 Gy × 25
RMH/GOC						39 Gy 42.9 Gy	3 Gy × 13 3.3 Gy × 13
START A						39 Gy 41.6	3 Gy × 13 3.2 Gy × 13
START B						40 Gy	2.67 Gy × 15
Canadian						42.5 Gy	2.66 Gy × 16



10-Year Event	RMH/GOC			START A			START B			Canadian		
	Arm (Gy)	Result (%)	P	Arm (Gy)	Result (%)	P	Arm (Gy)	Result (%)	P	Arm (Gy)	Result (%)	P
Ipsilateral breast tumor relapse	50	12.1	.027	50	6.7	NS	50	3.8	NS	50	7.4	NS
	42.9	9.6		41.6	5.6		40	5.2		42.5	7.5	
	39	14.8		39	8.1							
Distant relapse	NR			50	14.7	NS	50	16.0	.014	NR		
				41.6	16.8		40	12.3				
				39	18.0							
All-cause mortality	NR			50	19.8	NS	50	19.2	.042	50	15.6	NS
				41.6	18.4		40	15.9		42.5	15.4	
				39	20.3							
Cosmesis, selected end points					Telangiectasia					Excellent-Good		
	50	18.1	.065	50	7.2	—	50	5.8	.032	42.5	69.8	NS
	42.9	18.0		41.6	7.1		40	4.2		50	71.3	
39	12	39		3.0	.003							
					Breast Edema							
	50	13.8	.004	50	13.5	.24	50	9.0	.001			
	42.9	21.5		41.6	11.8		40	5.1				
	39	11.5		39	7.3		.001					

Fisher, 2014



Ipfrazionamenti presso il nostro centro:

ANTICANCER RESEARCH 30: 4749-4754 (2010)

Adjuvant Hypofractionated Radiotherapy with Weekly Concomitant Boost for Women with Early Breast Cancer: The Clinical Experience at Genoa University

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STEFANO AGOSTINELLI², FRANCESCA CAVAGNETTO², FLAVIO GIANNELLI¹,
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Week	1				2				3				4				5			
WBI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dose (Gy)	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
				†				†				†				†				†
W-CB				-				-				-				-				-
Dose (Gy)				1.2				1.2				1.2				1.2				1.2

- Totale 377 pz
- Istologicamente pT1-pT2
- DCI 83%, LCI 16%, altri 1%
- Margini negativi 86%
- Follow up mediano di 24 mesi

Morbidity score	Time of clinical assessment	Number of patients (%)
RTOG/EORTC Acute toxicity*		
	At last radiotherapy session	
0		119 (32%)
1		201 (53%)
2		47 (12%)
3		10 (3%)
Skin/subcutaneous late toxicity*		
	24-Months after radiotherapy completion	
0		349 (92%)
1		25 (7%)
2		3 (1%)
3		0
Cosmesis score*		
	24-Months after radiotherapy completion	
Excellent		323 (85%)
Good		37 (10%)
Fair		17 (5%)
Poor		0

Corvò, 2010



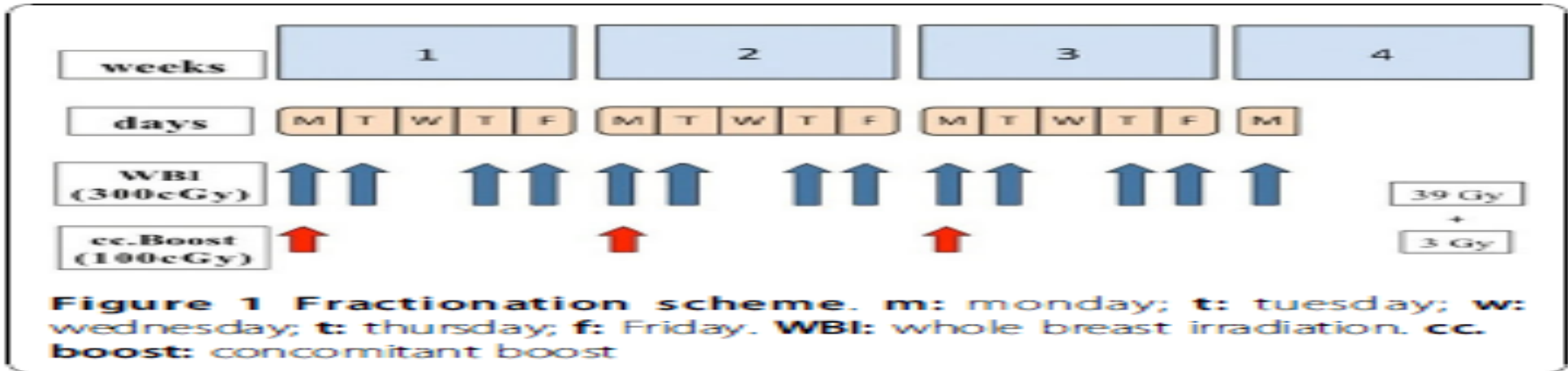
RESEARCH

Open Access

A biologically competitive 21 days hypofractionation scheme with weekly concomitant boost in breast cancer radiotherapy feasibility acute sub-acute and short term late effects

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- Totale pz 65
- Istologicamente pTis, pT1, pT2
- pN0-pN1
- Età mediana 69 aa
- Margini negativi 95%
- Follow up mediano 24 mesi

	G1	G2	G3	G4	N ^o of patients
At 6 months (subacute)					
<i>Hyperpigmentation</i>	22 (34%)	4 (6%)	0	0	65
At 12 months					
<i>Fibrosis</i>	28 (43%)	2 (3%)	0	0	65
<i>Hyperpigmentation</i>	3 (5%)	0	0	0	65
At 24 months*					
<i>Fibrosis</i>	25 (45%)	2 (3%)	0	0	56
<i>Hyperpigmentation</i>	0	0	0	0	56

Guenzi, 2010



La nostra esperienza

- Totale 175 pz sottoposti a chirurgia conservativa
- Età mediana 75aa(54-92)
- Stadio \leq pT2/pN1/pMx
- Istologia: DCIS 9%,DCI 68%, LCI 15%, altro 8%
- Luminal A 71%, Luminal B 10%, Basal-like 7%, Herb2-like 3%,DCIS 9%
- G1-G2 83% e G3 17%
- Margini negativi 83%
- CT adiuvante nel 13%, OT adiuvante nel 78%, Herceptin nel 7%
- Follow up mediano 6 mesi



$$BED = D \left(1 + \frac{d}{\alpha / \beta} \right)$$

$$\alpha / \beta = 4$$

Schema RT	BED tumor control
Standard 50 Gy/25 fx	75
Ipfraz. 35 Gy/10 fx	65,62



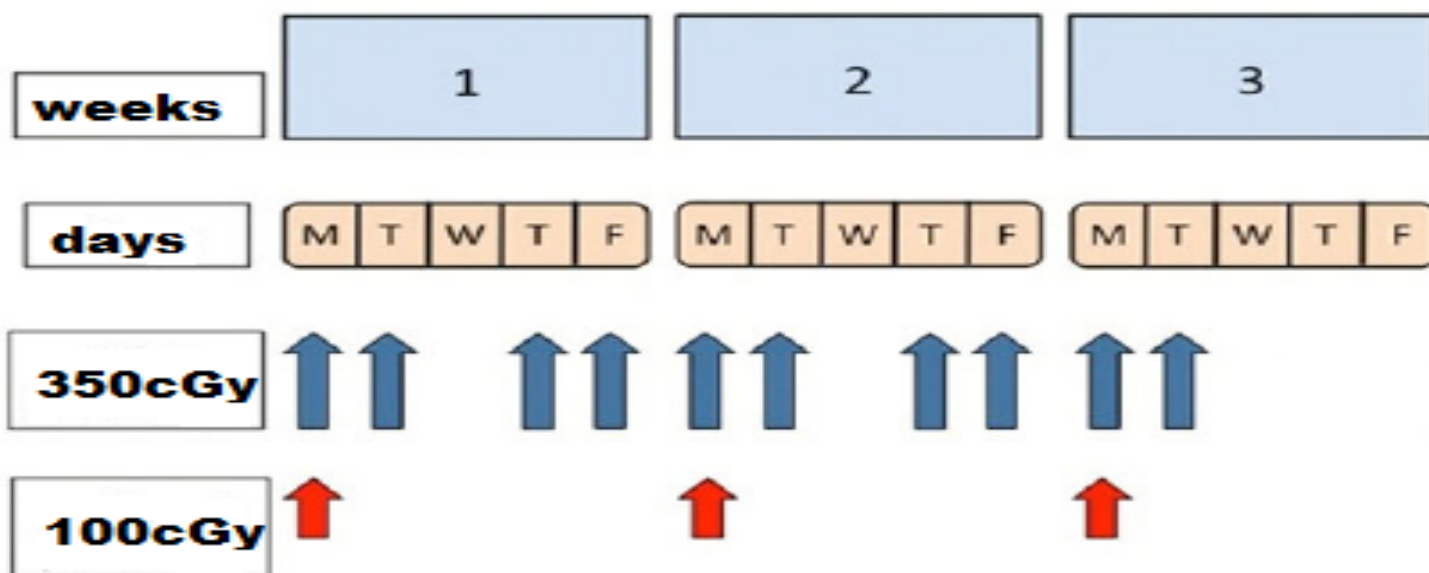


Figure 1 Fractionation scheme. m: monday; t: tuesday; w: wednesday; t: thursday; f: Friday. **WBI:** whole breast irradiation. **cc. boost:** concomitant boost



Risultati:

RTOG Acute Skin Score

Grade 0	No change over baseline
Grade 1	Follicular, faint or dull erythema/epilation/dry desquamation/decreased sweating
Grade 2	Tender or bright erythema, patchy moist desquamation/moderate edema
Grade 3	Confluent, moist desquamation other than skin folds, pitting edema
Grade 4	Ulceration, haemorrhage, necrosis

Grado	Mesi	Pazienti(%)
Tox Acuta	Al termine della RT	
0		79(42%)
1		87(49%)
2		14(8%)
3		2(1%)



Modified LENT SOMA Scale

	Grade 1	Grade 2	Grade 3	Grade 4
Fibrosis	Barely palpable increased density	Definite increased density and firmness	Very marked density, retraction and fixation	
Telangiectasia	< 1cm ²	1cm ² - 4cm ²	> 4cm ²	
Hyperpigmentation	Mild	Moderate	Severe	
Retraction/Atrophy	10 - 25%	> 25 - 40%	> 40 - 75%	Whole breast
Ulcer	Epidermal only, ≤ 1cm ²	Dermal, > 1cm ²	Subcutaneous	Bone exposed, necrosis



Grado	Mesi	Pazienti(%)
Tox subacuta 0 1 2 3	6 mesi	Totale 123 pz 77(64%) 39(31%) 7(5%) 0(0%)
Tox Tardiva 0 1 2 3	12 mesi	Totale 39 pz 24(64%) 13(34%) 2(4%) 0(0%)



Conclusioni:

La nostra esperienza, pur essendo basata esclusivamente su dati preliminari, dimostra che l'ipofrazionamento del Carcinoma mammario in 10 sedute non è complicato da tossicità acuta e subacuta.





Grazie per l'attenzione!!!!!!