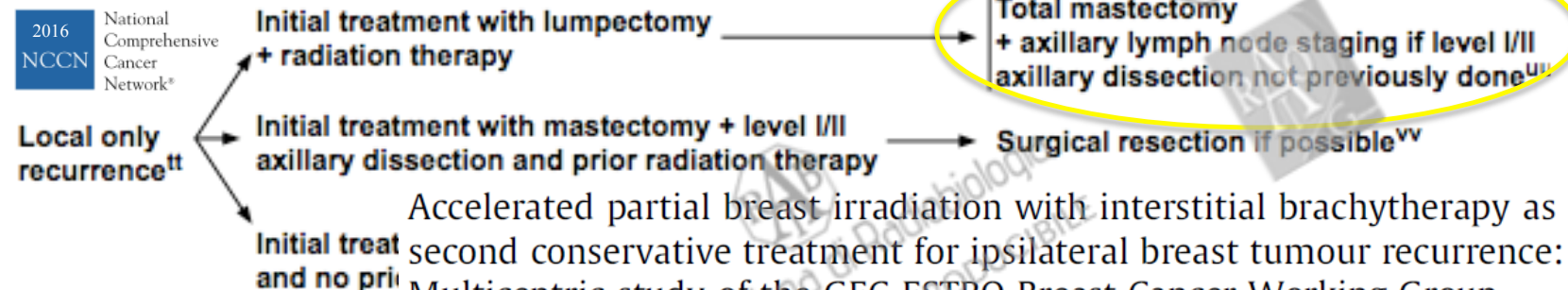


Partial breast re-irradiation using external beam radiotherapy for local recurrence after previous whole breast radiotherapy: experience of European Institute of Oncology

Dr. R. Spoto

BACKGROUND



Partial breast re-irradiation
Benefit and long term results

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Radiation Oncology (DEGRO)

of breast cancer
recurrences

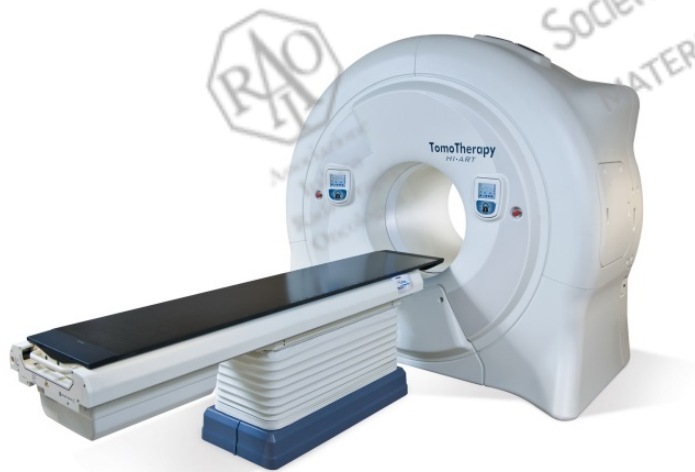
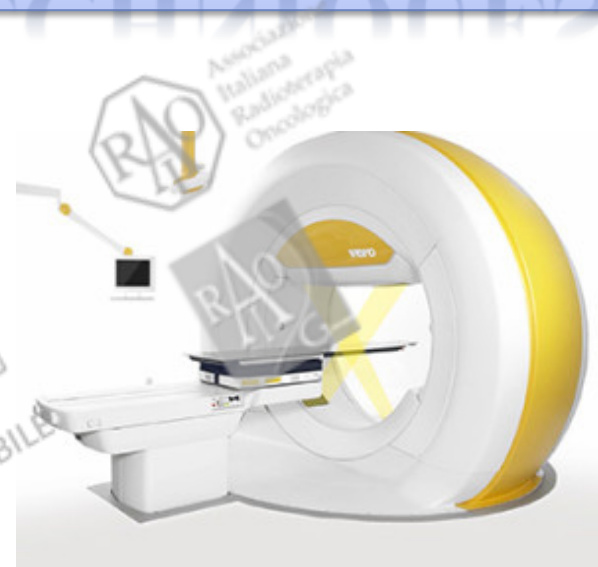


ELIGIBILITY CRITERIA

- locoregional tumor recurrence after WBRT ($pT \leq 2$; $pN \leq 1$)
- Unifocal disease
- Patient preference
- Second breast conservation is technically feasible

RADIOTHERAPY TECHNIQUES

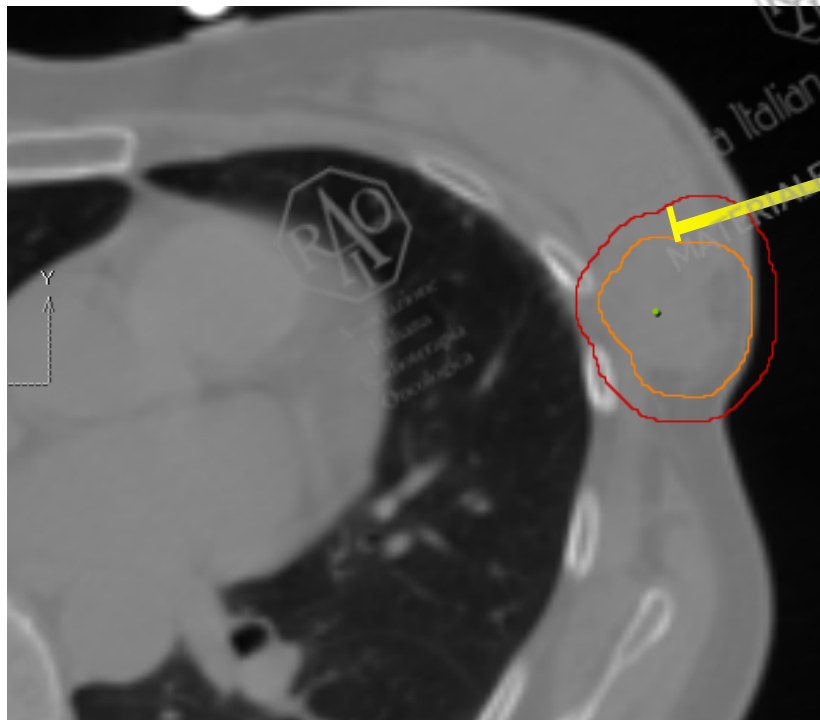
- BrainLab VERO: step-and-shoot IMRT



- Tomotherapy: helical IMRT modality

TREATMENT TECHNIQUE

- Dose delivered: 37.05 Gy in 13 fractions (2.85 Gy/fr)
- planning objectives: PTV: $V100\% \geq 95\%$, $V95\% \geq 98\%$, $D0.03cc \leq 110\%$



CTV → PTV 5 mm

TREATMENT DATA

| STRUCTURE | PLANNING OBJECTIVES | MEDIAN PLANNED | RANGE |
|--|---------------------|----------------|---------------|
| D _{max} | ≤ 110% | 107% | 103.7 – 111.7 |
| V _{100Gy} | ≥ 95% | 82.3% | 50 – 97.4 |
| V _{95Gy} | ≥ 98% | 97% | 87 – 100 |
| V _{90Gy} | ≥ 100% | 99.5% | 93.2 – 100 |
| D _{mean} Heart left breast | < 4Gy | 0.7 Gy | 0.18 – 4.1 |
| V _{20Gy} ipsi.lung | < 10% | 1.2 % | 0.1 – 7.9 |
| V _{25%} ipsi.breast | < 35% | 33.4% | 3.7 – 52 |
| V _{100%} ipsi.breast | < 10% | 0.7% | 0.005 – 4.4 |
| V _{2,5%} cont.Breast | < 0.02% | 0% | 0 – 47 |

RESULTS

- Between 06/2012 and 11/2015
- Number of patients: 48
- Median age at recurrence: 60.7 y (range: 37.5-88.7)
- Median time to recurrence: 137.3 m (range 25.6-319)
- Treated with VERO: 39
- Treated with TomoTherapy: 9



WHERE IS RECURRENCE?

17 patients has recurrence in the SAME quadrant

31 patients has recurrence in DIFFERENT quadrant



Associazione
Italiana
Radioterapia
Oncologica



IEO
Istituto Europeo
di Oncologia



ACUTE TOXICITY

Data available for all 48 patients

| GRADE | ERYTHEMA | EPITHELIOLYSIS | EDEMA |
|-------|----------|----------------|-------|
| 0 | 52.1% | 98% | 91.7% |
| 1 | 47.9% | 2% | 0 |
| 2 | 0 | 0 | 8.3% |

| INTENSITY | PAIN | ITCH | BURNING |
|-----------|-------|-------|---------|
| 0 | 89.5% | 89.5% | 93.8% |
| 1-3 | 6.3% | 10.5% | 6.2% |
| 4-7 | 4.2% | 0 | 0 |
| 8-10 | 0 | 0 | 0 |



OUTCOMES

Median follow up: 22.1 m (range 0.5 – 48.8)

- n° pts NED = 45
- n° pts AWD = 3
 - All developed distant metastasis
 - Median time to II recurrence: 12.1 m
 - Ki67 always >20%
 - Recurrence in the same quadrant



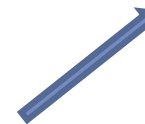
NO in field recurrence

LATE TOXICITY

Data available for 15 patients

| Collateral effect | Data IEO | Letterature (EBRT) |
|-------------------|-----------|--------------------|
| Fibrosis (G2) | 4 (26%) | 60% (G2-G3) |
| Dyschromia | 2 (13.3%) | 23-37.5% |
| Telangiectasia | 2 (13.3%) | 50% |
| Pain | 3 (20%) | 12.5% |
| Fibrosis G1 | 5 (33.3%) | |
| Oedema | 2 (13.3) | |
| Retraction | 9 (60%) | |

1 patient has G3 retraction



Harkenrider 2011
Deutsch 2002

CONCLUSION

- Second breast conservative therapy represents a feasible alternative to mastectomy
- This treatment is well tolerated
- Longer follow-up is needed

“ I think if you do something and it turns out pretty good, then you should go do something else wonderful, not dwell on it for too long. Just figure out what's next. ”

Steve Jobs



Società Italiana di Radiobiologia
MATERIALE NON RIPRODUCIBILE

Grazie per l'attenzione