



EFFICACY OF TARGETED INTRAOPERATIVE RADIOOTHERAPY (TARGIT- IORT) AS ANTICIPATED BOOST IN HIGH-RISK BREAST CANCER

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Competing interest statement: nothing to declare



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Methods

Background

High risk breast cancer require a tumor bed boost dose. We reported clinical outcome of TARGIT-IORT as anticipated boost modality in a large single-institute population.

Treatment

TARGIT-IORT as anticipated boost modality during lumpectomy with a dose 20Gy + whole breast radiotherapy 50Gy/25 fractions or 40.05Gy/15 fractions

Inclusion criteria

Infiltrative breast carcinoma + at least one of the following criteria: age<50 years, grading, G3, pN1, LVI diffuse, DCIS>25%, lobular histology



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Endpoints

Primary endpoints: 5-years in-breast tumor relapse risk and survival without in breast tumor recurrence

Secondary endpoints: regional- and distant recurrence-free survival, mastectomy-free survival, overall survival and tumor-related survival. High grade toxicity incidence

Statistical analysis

Primary and secondary outcomes were estimated with Kaplan Meyer method.

High grade toxicity events were collected and scored according to Common Terminology Criteria of Adverse Events scale 5.0.



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Results

Population

N° patients: 439

Accrual period: 2002 – 2021

69 patients included in TARGIT-B were not included in this analysis

Median follow up: 7.4 years (range:0.5-20.4 years). 82% of patients had a 5-year complete FUP

| Risk factor | N°pts | % |
|---------------------------------|-------|-----|
| Lobular histology | 50 | 11% |
| Diffuse lymphovascular invasion | 171 | 39% |
| Positive nodes | 214 | 49% |
| Diffuse DCIS | 33 | 8% |
| Age<50 | 69 | 16% |
| Grading G3 | 152 | 35% |

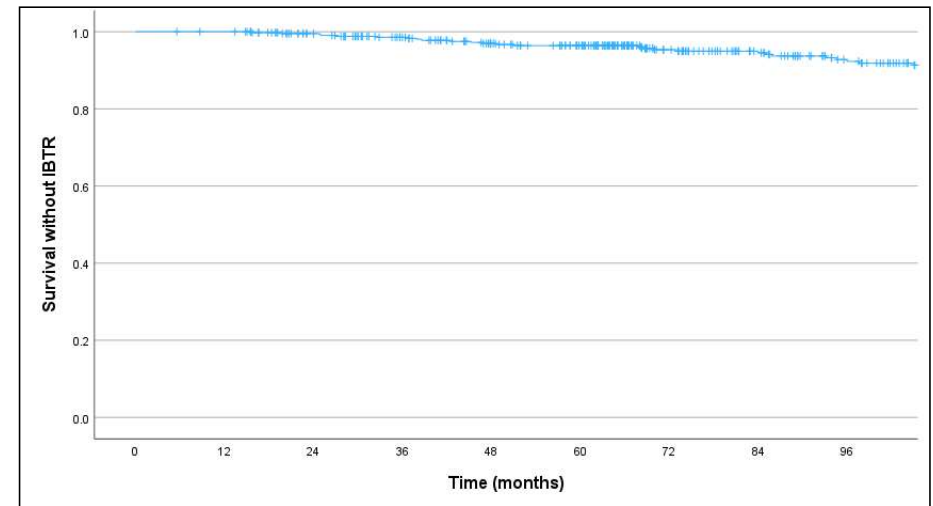
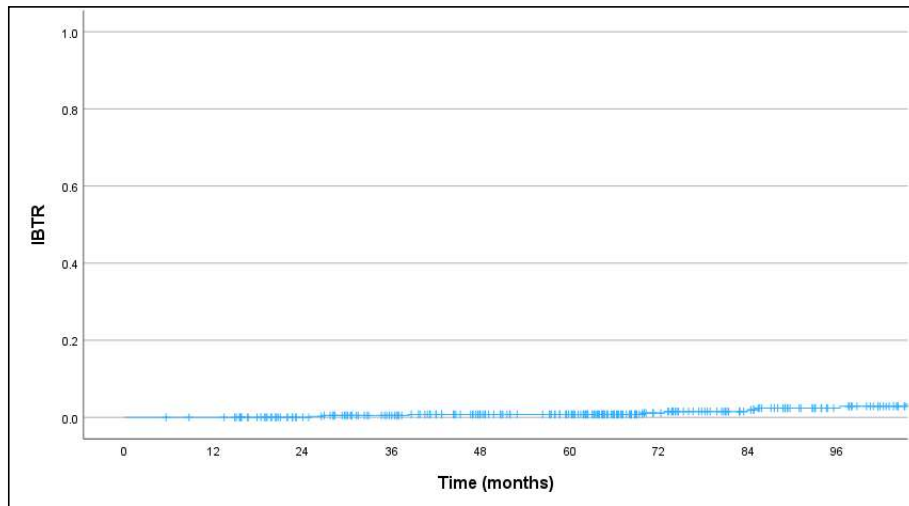
Results

Primary endpoint

5-years in-breast tumor recurrence (IBTR) = 0.8% (95%CI=0.4%-1.2%)

5-year survival without IBTR(event=death or local recurrence) = 96.4% (95% CI=95.5%-97.5%)

Only 5/23 (23%) local relapses were inside the previous index quadrant.



Secondary endpoints

| Outcomes | Kaplan-Meyer estimates (95%CI) |
|---|--------------------------------|
| 5 years regional recurrence free survival | 99.5 (99.2-99.8) |
| 5 years distant recurrence free survival | 97.5% (96.7-98.3) |
| 5 years mastectomy-free survival | 99.2 (98.8-99.6) |
| 5 years overall survival | 97.2% (96.6-97.8) |
| 5 years tumour related survival | 98.7% (98.1-99.3) |
| 5 year not tumour related survival | 98.5% (97.9-99.1) |

Toxicity:

Grade 3-4 toxicity incidence = 1.1%

1 case of skin fistula, 2 cases of severe fibrosis and 2 radiation induced angiosarcomas.

Conclusions

| Study | | 5y-IBTR |
|---------------------------------------|-------------------|-------------|
| START-B (Bentzen, Lancet) | EBRT-BOOST | 2.8% |
| EORTC (Bartelink, Lancet Oncol) | EBRT-BOOST | 4.3% |
| Targit-a (iort+ebrt) (Vaydia Lancet) | IORT BOOST | 1.7% |
| Germany group (Sarria, Front Oncol) | IORT BOOST | 2.3% |
| CRO AVIANO | IORT BOOST | 0.8% |

TARGIT-IORT was an effective modality to deliver an anticipated boost in high-risk breast cancer patients.

TARGIT-IORT is boost better than EBRT boost? We have to wait TARGIT-B results!



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