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15 YEAR SURVIVAL AND LOCAL CONTROL UPDATE: EARLY-STAGE BREAST CANCER IOERT

8 of November, 2024

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AGENTS OF TIME

INTRODUCTION

Rationale

- Localized Treatment
- Time Efficient

Advantages

- Precision
- Reduced Radiation Exposure

Clinical Evidence

1. Kaiser J, Reitsamer R, Kopp P, Gaisberger C, Kopp M, Fischer T, Zehentmayr F, Sedlmayer F, Fastner G. Intraoperative Electron Radiotherapy (IOERT) in the Treatment of Primary Breast Cancer. Breast Care (Basel). 2018 Jul;13(3):162-167. doi: 10.1159/000489637. Epub 2018 May 30. PMID: 30069175; PMCID: PMC6062668.

RESEARCH

PubMed®

accelerated partial breast irradiation IOERT

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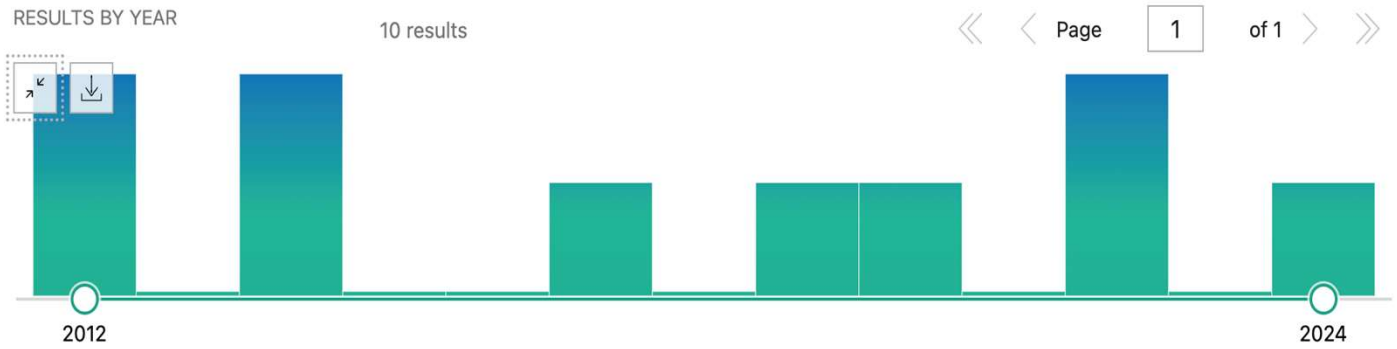

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Accelerated partial breast irradiation: executive summary for the update of an **ASTRO** evidence-based consensus statement
C Correa, EE Harris, MC Leonardi, BD Smith... - Practical **radiation** ..., 2017 - Elsevier
... **recommendations** will provide updated clinical guidance regarding use of **accelerated partial breast irradiation** for **radiation** ... **ASTRO guidelines** present scientific, health, and safety ...
☆ Guardar 99 Citar Citado por 609 Artículos relacionados Las 10 versiones

[PDF] llusurgonc.org

Outcomes after **accelerated partial breast irradiation** in patients with **ASTRO** consensus statement cautionary features
DR McHaffie, RR Patel, JB Adkison, RK Das... - ... Journal of **Radiation** ..., 2011 - Elsevier
... A total of 136 patients were identified who met the **ASTRO** cautionary **criteria**. Thirty-eight (27.9%) patients possessed multiple cautionary factors. All patients received 32 to 34 Gy in 8 to ...
☆ Guardar 99 Citar Citado por 64 Artículos relacionados Las 9 versiones

Accelerated partial breast irradiation via brachytherapy: a patterns-of-care analysis with **ASTRO** consensus statement groupings
ZA Husain, U Mahmood, A Hanlon, G Neuner, R Buras... - Brachytherapy, 2011 - Elsevier
... brachytherapy that have stratified patient outcomes based on **ASTRO guidelines**, none

[PDF] academia.edu

ACELERATED PARTIAL BREAST IRRADIATION

Review > Cancer Innov. 2024 Jan 22;3(1):e106. doi: 10.1002/cai2.106. eCollection 2024 Feb.

Accelerated partial breast irradiation: Current evidence and future developments

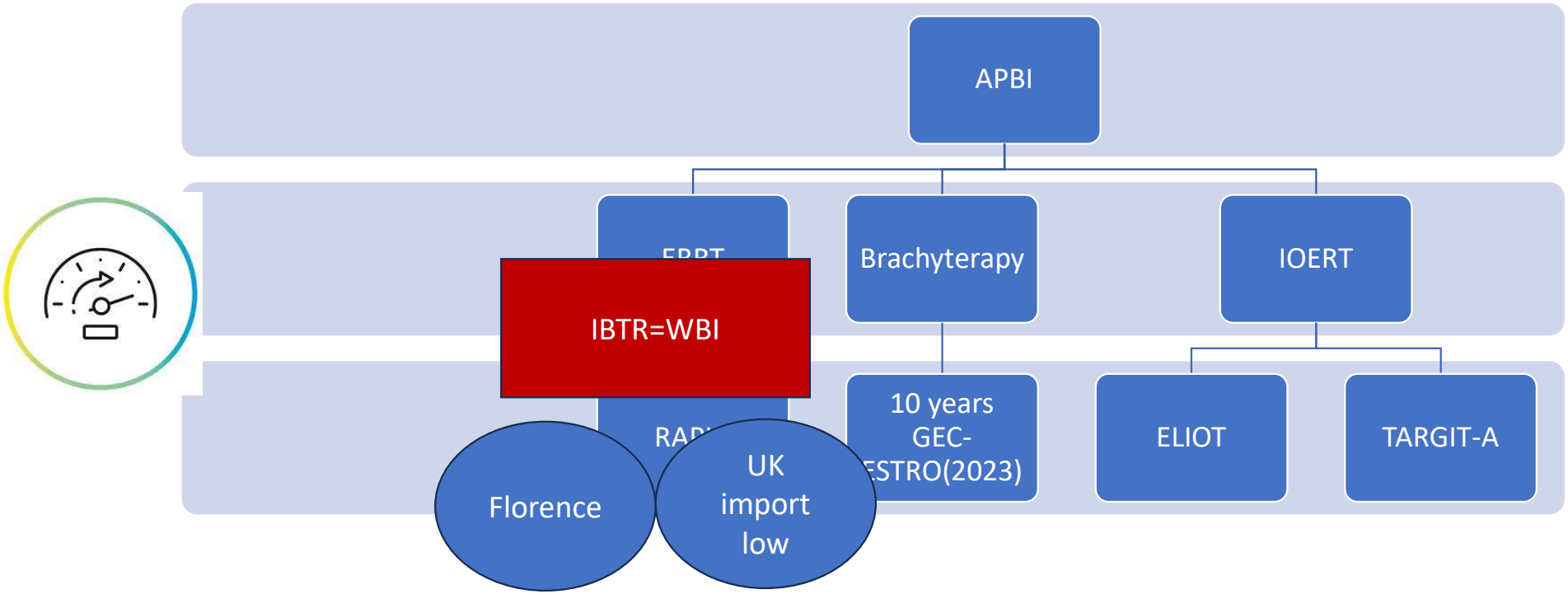
Dandan Song [1], Honghong Zhang [1], Chengbo Ren [2], Ning Zhan [1], Liangxi Xie [1], Wenjia Xie [1]

Affiliations + expand

PMID: 38948534 PMCID: PMC11212331 DOI: 10.1002/cai2.106

2. Song D, Zhang H, Ren C, Zhan N, Xie L, Xie W. Accelerated partial breast irradiation: Current evidence and future developments. Cancer Innov. 2024 Jan 22;3(1):e106. doi: 10.1002/cai2.106. PMID: 38948534; PMCID: PMC11212331.

ACELERATED PARTIAL BREAST IRRADIATION



2. Song D, Zhang H, Ren C, Zhan N, Xie L, Xie W. Accelerated partial breast irradiation: Current evidence and future developments. Cancer Innov. 2024 Jan 22;3(1):e106. doi: 10.1002/cai2.106. PMID: 38948534; PMCID: PMC11212331.
3. Strnad V, Polgár C, Ott OJ, Hildebrandt G, Kauer-Dorner D, Knauerhase H, et al. Accelerated partial breast irradiation using sole interstitial multicatheter brachytherapy compared with whole-breast irradiation with boost for early breast cancer: 10-year results of a GEC-ESTRO randomised, phase 3, non-inferiority trial. Lancet Oncol. 2023;24(3):262–72. https://doi.org/10.1016/S1470-2045(23)00018-9

INTRAOPERATIVE RADIOTHERAPY

ELIOT

Effectiveness and safety of **(IOERT)** as an alternative to conventional external beam radi

1305 women with early-stage breast cancer
<2,5 cm
2000-2007
Follow up 12,4 years

Local r

IOERT Group:21 Gy of Electron Radiation

WBI group:50 Gy of Radiation boost of 10 Gy

No dif

IORT was associated with fewer **skin complications**, less radiation exposure to surrounding organs (such as the heart and lungs), and shorter overall treatment duration.

Carefully Selected patients

TARGIT-A

Local control and **survival outcomes** compared to the ndard post-surgery (**EBRT)**.

y-stage breast

2

Local recurrence 3.3%1.3%

Intrabeam

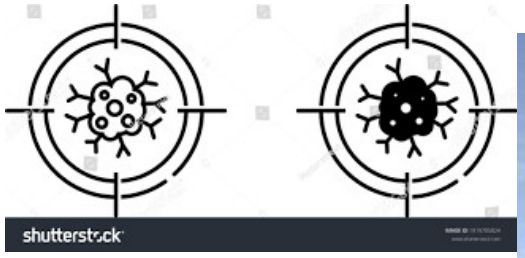
ard whole-
erapy (40-56 Gy)

No difference in survival rates

7.Orecchia R, Veronesi U, Maisonneuve P, Galimberti VE, Lazzari R, Veronesi P, et al. Intraoperative irradiation for early breast cancer (ELIOT): long-term recurrence and survival outcomes from a single-centre, randomised, phase 3 equivalence trial. Lancet Oncol. 2021;22(5):597–608. https://doi.org/ 10.1016/S1470-2045(21)00080-2
8. Vaidya JS, Bulsara M, Baum M, Wenz F, Massarut S, Pigorsch S, et al. Long term survival and local control outcomes from single dose targeted intraoperative radiotherapy during lumpectomy (TARGIT-IORT) for early breast cancer: TARGIT- a randomised clinical trial. BMJ. 2020;370:m2836. https://doi. org/10.1136/bmj.m2836

AIM

UPDATE THE EXPERIENCE IN OUR CENTER



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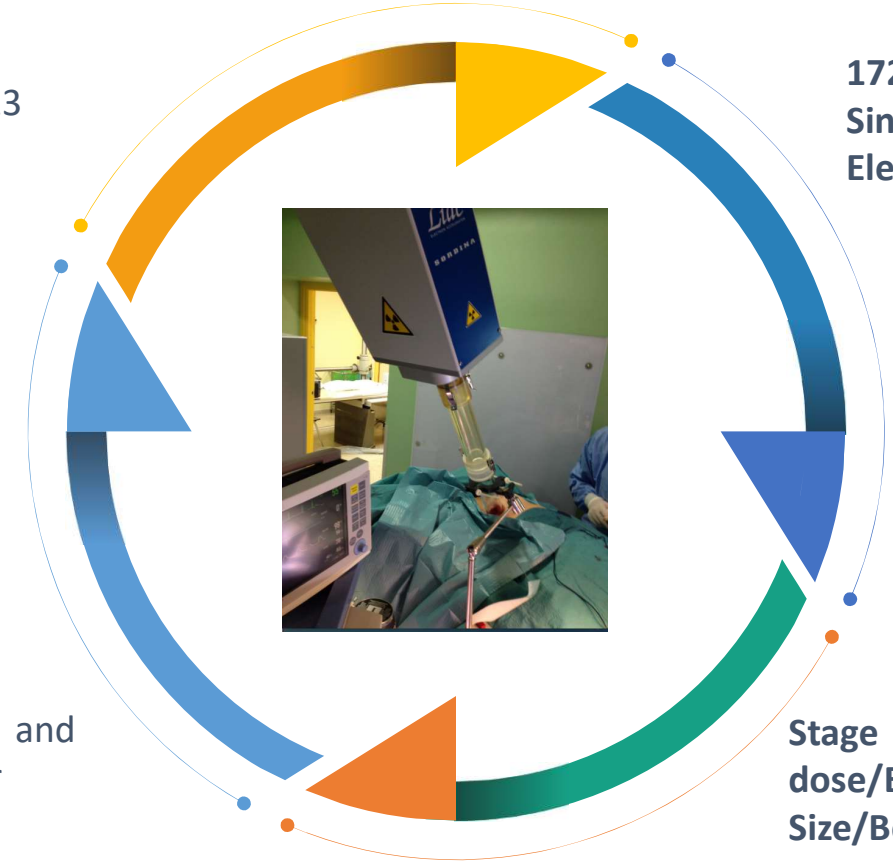
MATERIAL AND METHODS

Tipe of study

Retrospective. From 2009 to 2023



Patients

172 patients
Single dose : 2100 cGy(N0)
Electron boost:1000 cGy + EBRT

Statistics

SPSS 29: Descriptive Analysis and calculate de OS using Kaplan Meier

Variables

Stage / Subtype/ Risk Factors/IORT dose/Electron beam Energy/Cone Size/Bevel/ Complications/Recurrences

MATERIAL AND METHODS

Table 2 Current ASTRO guidelines for accelerated partial breast irradiation (63,64)

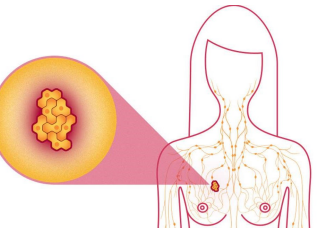
Consideration	Suitable	Cautionary	Unsuitable
Age	≥50 years of age	40–49 years of age if meet all other "suitable" criteria or ≥50 years of age with one or more other cautionary feature	<40 years of age or 40–49 years of age and not meeting all other criteria
Genetics	BRCA 1/2 negative	–	BRCA 1/2 positive
Margins	≥2 mm	<2 mm	Positive
DCIS	≤2.5 cm, screen-detected, low-intermediate grade, margins ≥3 mm	≤3.0 cm not meeting criteria for "suitable"	>3.0 cm
Size	≤2.0 cm	2.0–3.0 cm	>3.0 cm
LVSI	None	Limited/focal	Extensive
Hormone-receptor status	ER positive	ER negative	–
Histology	Invasive ductal	Invasive lobular	–
Extensive intraductal component	None	≤3 cm	>3 cm
Focality	Clinically unifocal	–	Clinically multifocal or microscopically multifocal with total size >3.0 cm
Centricity	Unicentric	–	Multicentric
Nodal status	pN0	–	pN+
Neoadjuvant therapy	None	–	Any

DCIS, ductal carcinoma in situ; LVSI, lymphovascular space invasion; pN0, pathologically node-negative; ER, estrogen receptor; pN+, pathologically node-positive.

9.Correa, C et al. (2017). Accelerated partial breast irradiation: executive summary for the update of an ASTRO evidence-based consensus statement. *Practical radiation oncology*, *7*(2), 73-79.

RESULTS

Age(years, range)	67,84(42-87)
Cardiovascular risk factors prevalence	
Hypertension	72(41%)
Diabetes Mellitus	24(13%)
Cardiopathy	13(7%)
Smoking	31(17%)
Hipercholesterolemia	61(35%)
Obesity	19(11%)



IORT dose

Unique dose(21 Gy) 110(64%)

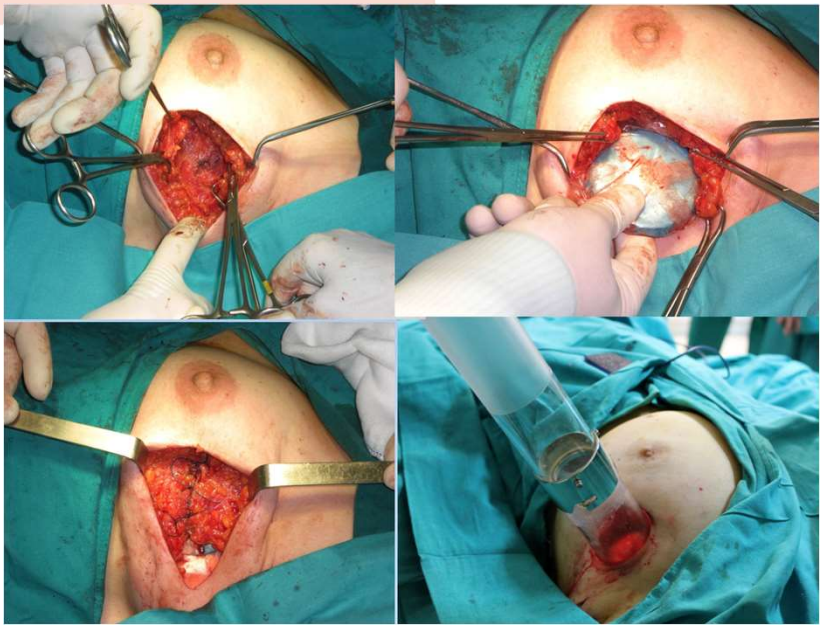
Boost(10 Gy) 62(35%)

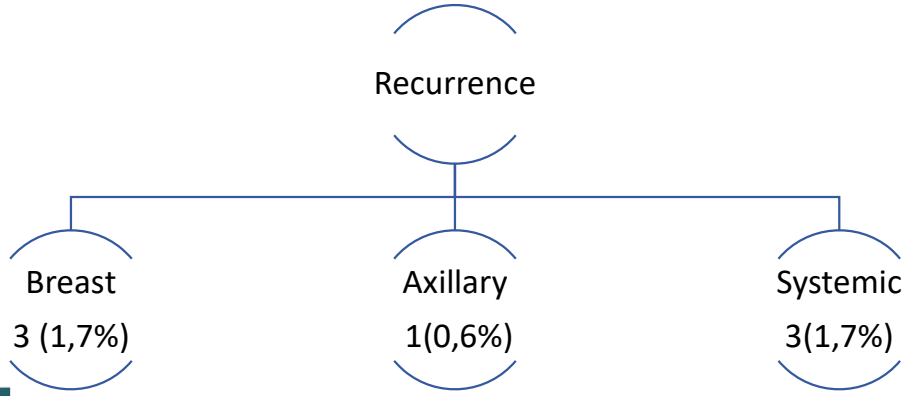
Tumor Characteristics	
Stage at diagnosis	
I	138(80,2%)
II	33(19,2%)
III	1(0,6%)
Hystology	
Ductal infiltrating	124(72,1%)
Lobular infiltrating	10(5,8%)
Others	38(22,1%)
Subtype	
Luminal A	147(85,5%)
Luminal B	23(13,4%)
Unknown	2(1,2%)
Treatment	
IORT dose	
Unique dose(21 Gy)	110(64%)
Boost(10 Gy)	62(36%)

RESULTS

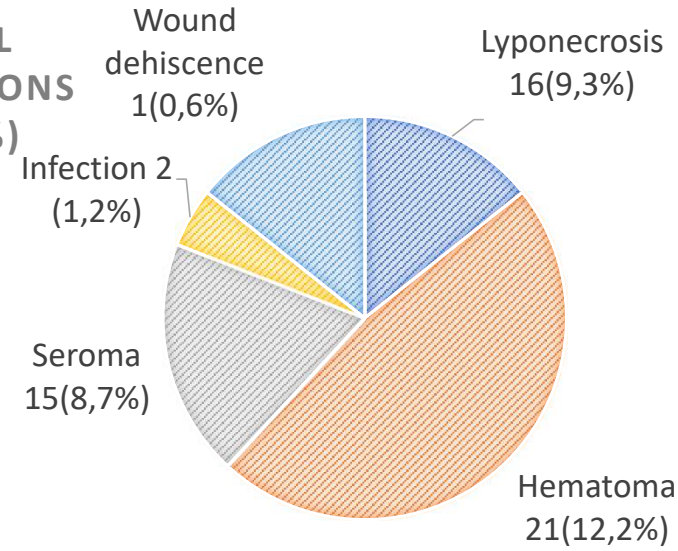
IOERT

- ***Electron beam 6 MeV 72(41%)***
- ***Cone Size 5 cm 110(64%)***
- ***Bevel Angle 0º 107(62,2 %)***
- ***Healing time <15 days 159(92,4%)***

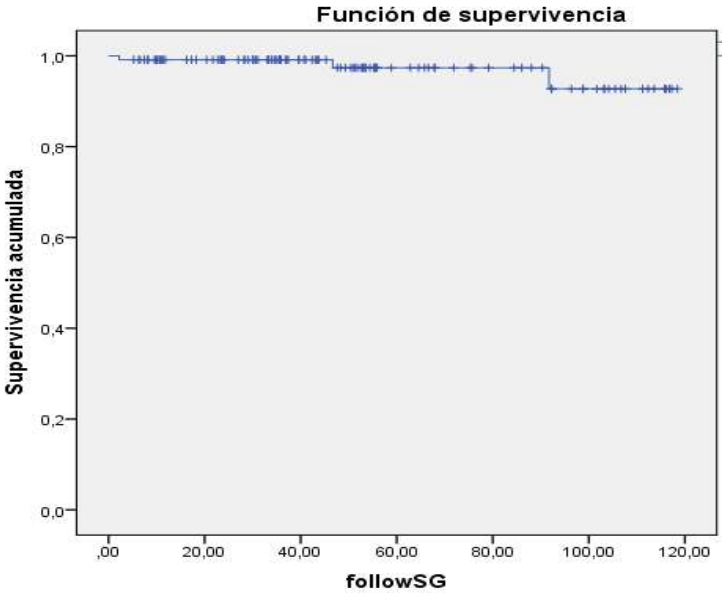




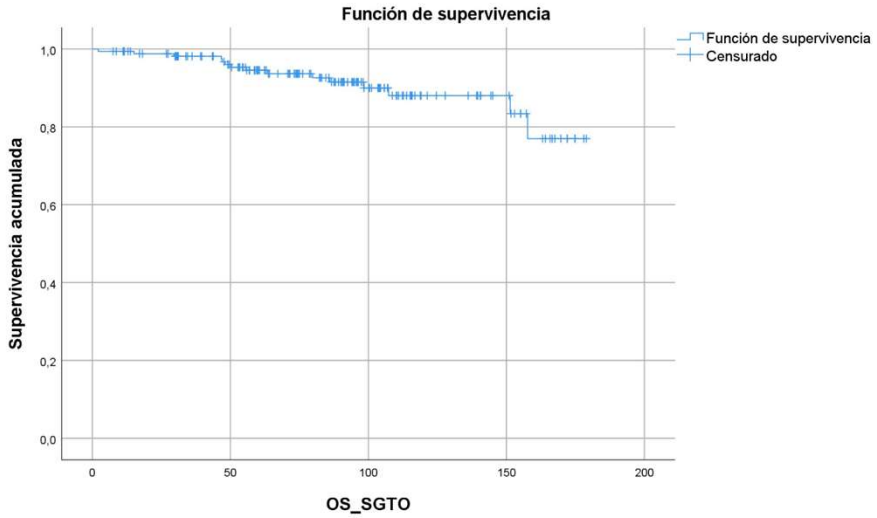
SURGICAL COMPLICATIONS 35(20,3 %)



RESULTS



+5 YEARS



MEDIAN FOLLOW-UP 84 MONTHS(1-168)

10-YEAR OS 88%(NON-CANCER RELATED DEATH)

RESULTS

After 15 years of institutional experience, IOERT in early-stage breast cancer has shown low toxicity, excellent local control and promising OS outcomes.

WELL SELECTED PATIENTS

TARGETED

INDIVIDUALIZED

ONLY DOSE

QUALITY OF LIFE

COST-EFFECTIVE

RESULTS

BOOST

AUTHORS & COLLABORATORS

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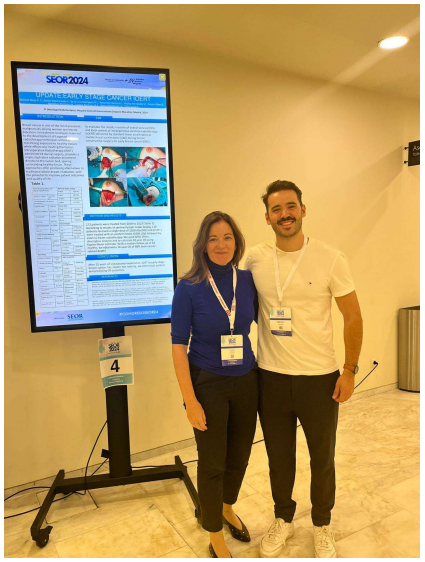


THANKS
FOR YOUR
ATTENTION

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