



#582005 Local Recurrence After Treatment for Ductal Carcinoma in Situ (DCIS): Comparing Four Different Treatment Modalities

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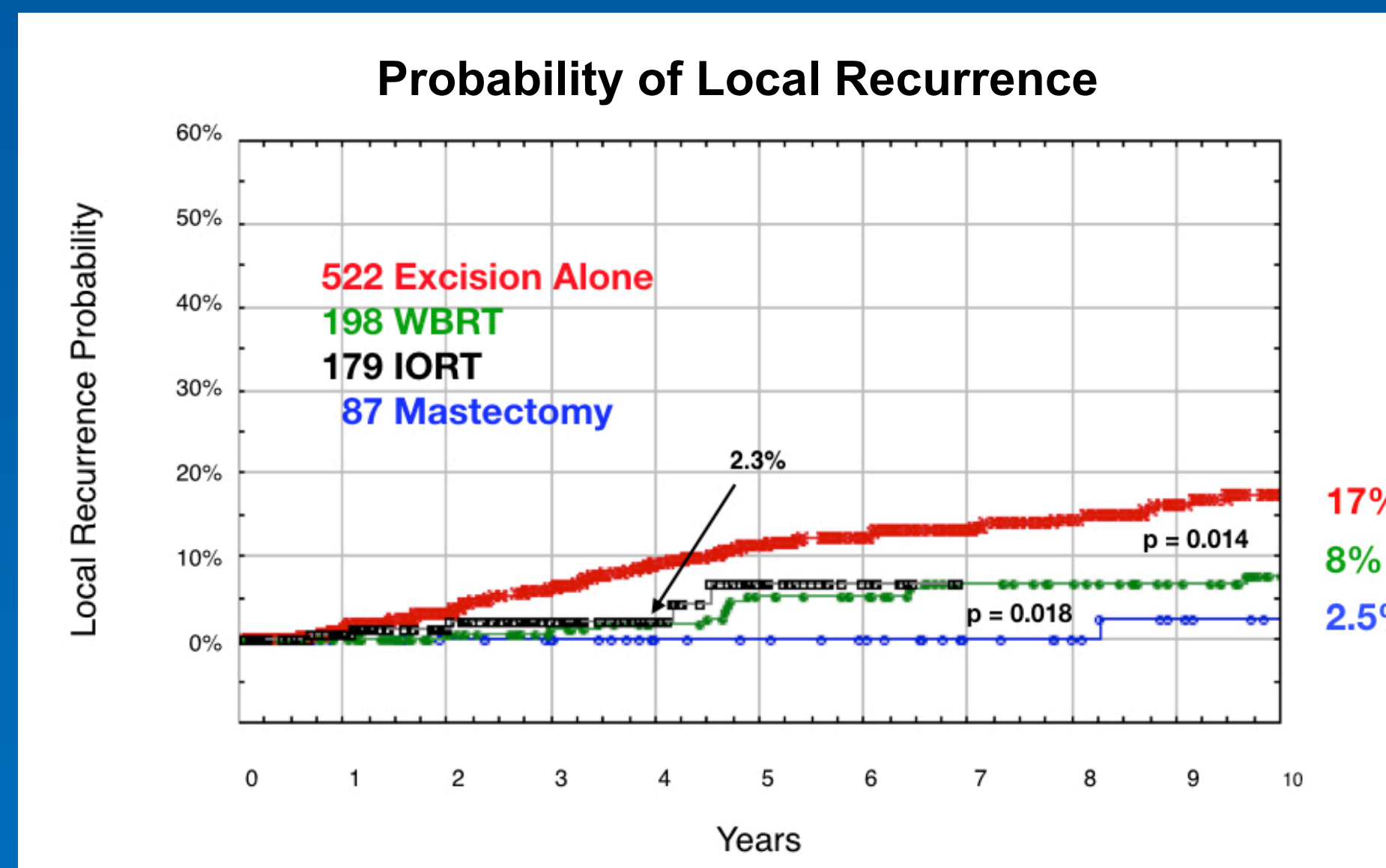
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Background

- In 2017, ASTRO published consensus guidelines in an effort to select breast cancer patients appropriate for intraoperative radiation therapy (IORT). These guidelines added low risk DCIS as suitable for DCIS which was previously not allowed.
- Previous studies have evaluated the local recurrence rate for low risk DCIS for patients undergoing local excision alone to whole breast radiation therapy (WBRT) after surgery.
- We studied the outcomes of patients with DCIS who meet IORT criteria (low risk patients) treated with mastectomy, excision plus WBRT, excision plus IORT, and excision alone.

Methods

- Patients with DCIS who met institutional criteria for IORT as a sole radiation treatment (tumor extent ≤ 30 mm; tumor margins ≥ 2 mm; negative nodes; and no extensive lymphovascular invasion) and were treated with the modalities of: mastectomy, excision plus WBRT, excision plus IORT, and excision alone.
- X-ray IORT (20Gy) was delivered using the Xofigo[®] Electronic Brachytherapy System.
- Kaplan-Meier analysis was used to calculate local recurrence rates for each modality individually. Groups were compared using the Log-Rank Test. Overall survival (OS) and breast cancer specific survival (BCSS) were also calculated.
- All local events, regardless of breast quadrant in which they occurred, were included.



	Excision alone	Excision + WBRT	Mastectomy	Excision + IORT
N	522	198	522	179
Average Age (yrs)	55	54	54	60
Median Size (mm)	11	15	14	13
ER Positive (%)	91%	90%	84%	93%
PR Positive (%)	84%	84%	66%	86%
Median follow-up (months)	88	120	102	36
10 year Local Recurrences	17.3%	7.8%	2.5%	2.3% (4yrs only)
10 year Invasive Recurrences	8.9%	5.5%	2.5%	0.7% (4yrs only)

Results

- Lowest 10 year local recurrence rate was seen following mastectomy (2.5%), followed by excision plus WBRT (7.8%) and excision alone (17.3%), p=0.00008.
- IORT recurrence curve is similar to WBRT (p = 0.65), however with accuracy to only 4-years due to shorter follow-up (2.3%).
- OS and BCSS at 10-years were statistically the same for all three major treatment groups (93.9% and 99.3% respectively). OS and BCSS were 98.6% and 100%, respectively, at 4-years for the IORT group.

Conclusions

- Local recurrence rates for low risk DCIS are expectedly lowest for patients undergoing mastectomy and highest for excision alone.
- IORT local recurrence rate for the first four years is similar to WBRT but may be expected to increase with longer follow-up although be lower than excision alone.
- Patients receiving IORT should be appropriately counseled and treated as part of prospective registry or clinical trial until additional follow-up available.