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1200 Patients Treated with Intraoperative Radiation Therapy (IORT): Analyzed by Different Lengths of Follow-up

Crystal Fancher, M.D.^{1,2}, Melinda S. Epstein, Ph.D.³, Sadia Khan, D.O.^{1,2}, Peter Chen, M.D.⁴, Brian Kim, M.D.⁴, Kevin Lin, M.D.⁴, Lincoln Snyder, M.D.¹, Colleen Coleman, M.D.¹, January Lopez, M.D.⁵, Lisa E. Guerra, M.D.¹,
Melvin J. Silverstein, M.D.^{1,2}

¹ Department of Surgery, Hoag Memorial Hospital Presbyterian, Newport Beach, CA 92663, ² Keck School of Medicine, University of Southern California, Los Angeles, CA 90033
³ Department of Research, Hoag Memorial Hospital Presbyterian, Newport Beach, CA 92663, ⁴ Department of Radiation Oncology, Hoag Memorial Hospital Presbyterian, Newport Beach, CA 92663
⁵ Department of Radiology, Hoag Memorial Hospital Presbyterian, Newport Beach, CA 92663

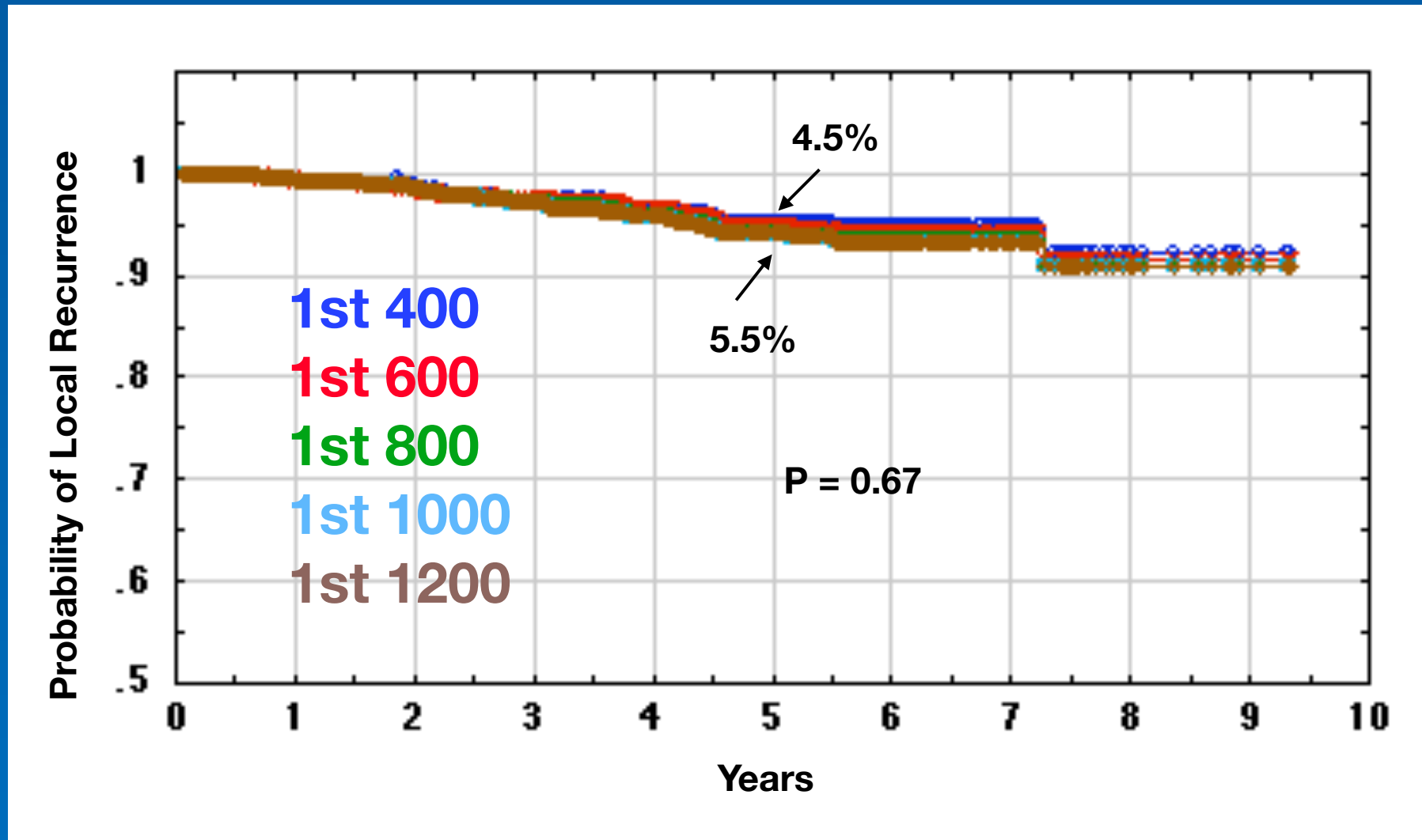
Correspondence: crystal.fancher@gmail.com



USC University of Southern California

Background

- Intraoperative radiotherapy (IORT) permits accurate delivery of radiation therapy directly to the tumor bed at the time of surgery, greatly simplifying breast conservation.
- Two prospective randomized trials have been published (ELIOT and TARGIT A), supporting IORT as a possible alternative to whole breast radiation therapy (WBRT).
- This report analyzes the probability of local recurrence among 1200 patients treated with IORT at the same facility, with a median follow-up of 48 months.
- To determine whether 48 months of follow-up yielded accurate results, we looked at smaller groups of earlier patients with longer follow-up.



Results

- The table shows the median follow-up, the number of recurrences, and the 4 and 5-yr probabilities of local recurrence for each group.
- As the groups get larger, recurrences increase and follow-up decreases.
- In spite of the decreasing length of follow-up, there is no statistical difference between any of the groups.
- When the 1st 400 is compared with all 1200, the difference is not significant (p = 0.45).

Methods

- IORT was delivered using the Xofig Axxent eBx™ System to 1200 consecutive patients from May 2010 to September 2019.
- Local recurrence was the endpoint of the study.
- All ipsilateral tumor events were included, both invasive and DCIS, regardless of location (same or different quadrant).
- The patients were analyzed by the 1st 400 vs the 1st 600 vs the 1st 800 vs 1st 1000 vs all 1200.
- Kaplan-Meier Analysis was used to calculate the probability of local recurrence for each group.
- Groups were compared using the log-rank test.

By Date Rx	Follow-Up Years (Months)	Number of Recurrences	4-Year Recurrence	5-Year Recurrence
1 st 400	6.0 years (72)	22	3.3%	4.5%
1 st 600	5.3 years (64)	30	2.8%	4.4%
1 st 800	5.0 years (60)	41	3.8%	5.4%
1 st 1000	4.3 years (52)	46	4.0%	5.5%
1 st 1200	4.0 years (48)	47	4.0%	5.5%

Conclusions

- The 5-year probability of local recurrence for 1200 patients treated with IORT was 5.5%. Statistical evaluation suggests this is accurate.
- When invasive recurrence is the endpoint, the probability of local invasive recurrence at 5-years drops to 4.0%.
- If any recurrence (invasive and DCIS) in the same quadrant is the endpoint, the 5-year probability drops to 3.2%.
- IORT appears to be a safe alternative to WBRT in properly selected patients.
- Longer follow-up is not likely to increase the 5-year probability of recurrence.