Clinical analysis of early results of the implementation of intraoperative radiotherapy with the INTRABEAM device during breast-conserving surgery of early breast cancer in a private hospital

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ABSTRACT

- Intraoperative radiotherapy (IORT) during breast-conserving surgery (BCS) in early breast cancer have been reported previously by academic institutions with a dedicated in-house surgical team.
- At Assuta, a private hospital, we implemented IORT, a multidisciplinary procedure, in a setting where multiple private (individual) surgeons perform surgeries.
- For early-stage breast cancer patients, intraoperative radiotherapy after breast-conserving surgery in a private center with multiple surgeons, if done according to a peer reviewed protocol, is both safe and reliable and has resulted in very acceptable outcomes.

OBJECTIVES

- Results of TARGIT trials increased clinical interest in intraoperative radiotherapy (IORT) during breast-conserving surgery (BCS) in early breast cancer and thus we have evidenced an increase in its use.
- At Assuta Medical Centers we implemented this treatment in a private hospital setting where multiple surgeons use it.
- This report reviews surgical oncology guidelines, the protocol for the treatment as well as the outcomes for breast cancer patients who received IORT as their sole radiation treatment at our hospital.

METHODS

- Inclusion criteria (Israel)
  - In Israel we have established our criteria of patients eligible for IORT based on a combination of the ones made by different national societies (e.g., ESTRO and ASTRO and others), as follows:
    - >55 years old
    - Invasive ductal carcinoma/other favorable histology
    - T1 (≤2 cm), unifocal
    - N0
    - Positive estrogen hormone receptor status
    - M0

- Exclusion criteria
  - Multifocal disease
  - Presence of EIC
  - Presence of LVI
  - Neoadjuvant chemotherapy
  - N+ disease
  - HER2 positive
  - BRCA1/2

- Assuta approach
  - Multidisciplinary approach: patient is seen by the surgeon and the radiation oncologist.
  - X-rays are reviewed at tumor board.
  - Patients are enrolled in a tumor registry.
  - Close follow up by surgeon and radiation oncologist.

RESULTS

We analyzed the reasons for non-treatment in the 29% of referred patients. We found that 36% of these did not meet the eligibility criteria, 17% had positive SLN during surgery and IORT was aborted, 23% of the patients were eligible but the reason for non-treatment was economic due to insurance refusal to pay the cost, in 3% it was due to a technical problem in the Intrabeam machine and in 10% it was due to miscellaneous reasons mostly patient refusal due to media effect (Dr. Google).

CONCLUSIONS

- For early-stage breast cancer patients, intraoperative radiotherapy after breast-conserving surgery in a private based center, if done according to a peer reviewed protocol is both safe and reliable and has resulted in very acceptable outcomes.
- With the larger emerging experience patient selection for IORT should be less restrictive. Patient and physician education is needed in order to increase awareness of this modality. Insurers should be involved in the costs and benefits of this procedure.

REFERENCES