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When to do, when not to do: Challenges for radiation oncologist in breast/chest wall radiotherapy in developing country

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Introduction: The role of PMRT for high-risk breast-cancer patient, defined as tumor size >5cm, positive nodes 4 or positive margins, in decreasing LRR has been well documented. Post-mastectomy radiotherapy (PMRT) can reduce the risk for local-regional recurrence (LRR) and improve survival in breast cancer patients with positive nodes. There is still some controversies exist among radiation oncologist for PMRT in low to intermediate risk breast cancer and for regional nodal radiotherapy after breast conserving surgery. One has to weigh risk vs. benefit, especially when overtreatment leads to financial burden on patient in developing country like Pakistan. It also has an impact on waiting list in radiotherapy departments.

Methods & Materials: Extensive literature search through Pub Med has been done for various queries raised regarding breast/chest wall radiotherapy. The queries include: role of post mastectomy radiotherapy in T1, T2, 1-3 positive LN, and regional radiotherapy in 1-3 positive LN after breast conserving surgery, indications and outcome of hypo fractionated radiotherapy and lumpectomy boost.

Results: Evidence based answers include (will be discussed in detail in Presentation)

Post Mastectomy Radiotherapy in T1, T2, 1-3 +ve LN

- Randomize data have demonstrated that the addition of post mastectomy radiotherapy for node positive patients improves the 15- year overall survival by approximately 10%.

Regional nodal radiotherapy after breast conservation surgery in 1-3 +ve LN

- reduced risk of loco regional recurrence, improve disease free survival, decreased subsequent distant metastasis and likely had an impact on overall survival.

High Risk Features for consideration of post mastectomy radiotherapy in T1, T2 tumors with 1-3 +ve LN or Regional Nodal RT after BCS are

- Age < 50 years, T2 tumor, Lymphovascular invasion, ER negative, GIII, 2 or 3 LN positive, perinodal extension and positive LN size > 5mm.

Lumpectomy Boost

- Decrease 10- Year actuarial rates of ipsilateral breast tumor recurrence.
- Patients 40 years old or younger or high grade disease benefited most with addition of boost.

Hypofractionation

- Lower total doses of radiotherapy delivered in fewer, larger doses (high dose per fraction) are at least as safe and effective as the historical standard regimen (50 Gy in 25 fractions) for women after primary surgery for early breast cancer.
- In a country like Pakistan, hypofractionation is very practical to reduce patients' financial burden and reducing the waiting list time in radiotherapy departments.

Conclusion: Post mastectomy radiotherapy and regional nodal radiotherapy should be considered in T1, T2 tumor with 1-3 positive lymph nodes. Lumpectomy boost should be considered in patient younger than 40 years and for Grade 3 disease. Hypo fractionation is safe and effective alternative of standard fractionation.

Biography

Quratulain Badar received her Medical degree from Liaquat University of Medical & Health Sciences, Sind, Pakistan in 2004. She completed her residency training in Radiation Oncology from Aga Khan University & Hospital in 2012. She obtained her Fellowship from College of Physician & Surgeon, Pakistan in the same year. She is the First Fellow in Radiotherapy from Sind. She is currently working as Assistant Professor & Consultant Radiation Oncologist at Ziauddin Medical University & Hospital, Karachi, Pakistan. She is a founder, an active member and moderator of tumor board meetings at her institute. She presented many research articles at national and international meetings. She is a current member of Pakistan Society of Clinical Oncology.