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Role of post mastectomy radiotherapy in t1,t2 lesions with 1-3 positive axillary lymph nodes - A retrospective study of 101 cases

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Introduction: Post mastectomy radiotherapy (PMRT) reduces loco-regional recurrence (LRR) and improves overall survival. There is international consensus to recommend PMRT for patients with tumour size more than 5 cm (T3), tumour invasion of the skin, pectoral muscle or chest wall (T4) and patients with > 4 positive lymph nodes (LN). However, the role of PMRT for patients with T1, T2 disease with 1-3 positive LN is still controversial. The side effects of radiotherapy and its associated morbidity have to be considered in the risk benefit ratio, thus difficult to arrive at consensus in early breast cancer. In a developing country like India, factors such as patient education, level of awareness, financial aspect, long term follow up, limitation of resources have to be balanced and tailored according to the indication and need of the patient. Objectives of the study are 1) Empirically explore whether it is advisable to carry out radiation when there are 1-3 nodes. 2) Whether Perinodal extension in this subgroup is an important parameter to consider for radiotherapy.

Material & Methods: We collected data after approval from our institutional board review committee and analysed case files of patients who presented and were treated at our governmental tertiary referral centre from a period between 2012-2015. Of the 691 patients who underwent mastectomy, we shortlisted 101 cases for our study who fulfilled our basic inclusion criteria of T1, 2 N1 on final histopathology. The inclusion criteria for this analysis were: (1) Female patients with unilateral breast cancer and no distant metastasis at initial diagnosis who underwent mastectomy and axillary lymph node dissection; (2) postoperative pathology indicated T1-2 and 1-3 positive axillary lymph nodes (T1-2N1M0) disease, at least 10 lymph nodes removed by axillary dissection; (3) complete surgical resection of the tumor and negative margins; (4) complete estrogen receptor (ER), progesterone receptor (PR) and human epithelial growth factor receptor family 2 (Her2) status; (5) No neoadjuvant chemotherapy was administered before surgery and endocrine therapy was performed based on the hormone receptor status. In order to study the research questions, we formulated hypotheses as follows; first was radiotherapy does not have any impact on recurrence post mastectomy and second was there is no influence of Peri nodal extension on recurrence. The above hypotheses were tested using chi-square test.

Results: On applying chi square test we found out the observed and the expected value. Radiotherapy was given in 60 patients and 41 were not given. Recurrences were obtained in 9 amongst radiotherapy and without radiotherapy in 16. When chi square was applied with 1 degree of freedom, the value was highly significant at 0.006 with 99% CI. Hence our hypothesis was rejected. Also in case of PNE with recurrence and radiotherapy, 8 had PNE with radiotherapy and recurrence and 27 had no recurrence, on computation degree of freedom was 3 and p value was 0.013% hence highly significant.

Conclusions: Radiotherapy should be strongly considered in patients with 1-3 nodes post mastectomy as it decreases the chances of recurrence and also if PNE is present chances of recurrence are increased, hence radiotherapy be considered.

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