

<https://doi.org/10.29289/259453942025V36S11088>

1088 – Regional nodal irradiation versus omission in clinically node-positive breast cancer converted to complete axillary response: a systematic review and meta-analysis

João Victor Alves Alencar¹, Juarez Antônio de Sousa¹

¹Universidade Federal de Goiás – Goiânia (GO), Brazil.

Introduction: In clinically node-positive (cN+) breast cancer, neoadjuvant systemic therapy (NST) often results in a pathological node-negative status (ypN0). Whether regional nodal irradiation (RNI) remains mandatory post-conversion is a primary therapeutic dilemma, as clinicians must balance oncological control against morbidities, such as lymphedema.

Objective: To evaluate the safety of omitting RNI to guide safe treatment de-escalation in breast cancer.

Methods: Following PRISMA guidelines, a systematic review with meta-analysis was conducted and the databases PubMed, Cochrane, and Embase were searched for clinical trials and cohort studies comparing RNI omission (no radiotherapy or whole-breast irradiation alone) with RNI inclusion (nodal field irradiation) in cN+ patients converted to ypN0 after NST with ≥ 3 -year follow-up. Endpoints included overall survival (OS), locoregional recurrence-free survival (LRFS), disease-free survival (DFS), distant metastasis-free survival (DMFS), and breast cancer-specific survival (BCSS). Out of 3,708 initial records, 2,463 unique articles were screened. Of these, 2,454 articles were excluded due to pre-NST-era data, residual nodal disease (ypN+), male patients, or non-breast tumors, lack of radiotherapy comparators, upfront surgery, or missing hazard ratios (HR). The quantitative synthesis included nine studies. HRs and 95% confidence interval (CI) were pooled using random-effects models in R (version 4.5.3).

Results: Nine studies were included, encompassing 20,618 patients. No statistically significant differences were observed between RNI inclusion and omission across all endpoints. Pooled HRs comparing RNI inclusion to omission were: OS (HR 0.98; 95%CI 0.84–1.16; $p=0.84$; $I^2=21.7\%$), LRFS (HR 0.81; 95%CI 0.34–1.95; $p=0.642$; $I^2=55.5\%$), DFS (HR 0.85; 95%CI 0.59–1.24; $p=0.401$; $I^2=46\%$), DMFS (HR 0.68; 95%CI 0.23–1.95; $p=0.468$; $I^2=62.3\%$), and BCSS (HR 0.82; 95%CI 0.58–1.15; $p=0.243$; $I^2=0\%$).

Conclusion: Omitting RNI in cN+ patients achieving ypN0 does not appear to adversely affect survival or recurrence. These data support the feasibility of de-escalating radiotherapy in this population, potentially sparing patients from significant chronic morbidity without increasing oncological risk.

Ethics: Public data – Literature review.

Keywords: breast neoplasms; neoadjuvant therapy; lymphatic irradiation.