

Oncology of the chest

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Prognostic Impact of Extracapsular Lymph Node Invasion on Survival in non-Small-cell Lung Cancer: a Systematic Review of Medline and Meta-analysis

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Background: The extracapsular tumor extension (ECE) of nodal metastasis is known as an important prognostic factor in different types of malignancies. Currently, however, there is a lack of recent data regarding ECE in patients with Non-Small Cell Lung Cancer (NSCLC). In addition, the TNM staging system does not include it as a prognostic factor. This systematic review and meta-analysis has been conducted to summarize and pool the existing evidence to determine the prognostic role of ECE in patients with lymph node-positive NSCLC.

Material and Methods: Two authors performed an independent search in PubMed using a predefined keyword list, without language and time restrictions. Prospective studies reporting data on prognostic parameters in subjects with NSCLC with positive ECE or with only intra-capsular lymph node metastasis were eligible. Data was summarized using risk ratios (RRs) for the survival with 95% confidence intervals (CIs). The data has been analyzed using Mix 2.

Results: 2245 studies were reviewed. 4 studies including a total of 745 subjects met the inclusion criteria and were enrolled in the Meta-analysis. 38.1% patients (n=284) were categorized in ECE+ group, from which 17.9% (n=51) survived at the end of follow up (3 or 5 years). In ECE- group 50.5% patients (n=233) survived through the follow up. ECE+ status has been associated with a significantly decreased rate of survival. Pooled RR 0.44 (95% CI 0.31-0.61), $Q_{(3)}=3.8$, $P_{value}=0.28$, $I^2=21.2\%$ (95 CI 0.00-87.9%.)

Conclusion: ECE has a significant negative impact on survival in NSCLC patients and must be considered in diagnostic and therapeutic decisions as well as TNM staging. Postoperative radiotherapy may be an option in pN1 NSCLC patients with ECE+ status...