Presentation Abstracts

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Development of a Nomogram for Predicting Survival in Early-Stage Non-Small Cell Lung Cancer: Insights from the Brazilian Lung Cancer Registry

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Introduction: The prognostic evaluation of early-stage non-small cell lung cancer (NSCLC) remains critical for optimizing treatment strategies and improving patient outcomes.[1-3]

Objective: This study aims to delineate the pivotal predictors affecting survival rates among early-stage NSCLC patients, leveraging data from the Brazilian Lung Cancer Registry.

Methods: This study retrospectively analyzed data from the Brazilian Lung Cancer Registry, encompassing 2,045 patients who underwent surgical treatment for lung cancer across 14 institutions in five Brazilian states. The registry is prospectively maintained, ensuring comprehensive and up-to-date data capture. Inclusion criteria focused on patients with stage I and II NSCLC with completed pivot variables, narrowing the cohort to 736 eligible subjects. Kaplan-Meier survival analysis, along with univariate and multivariate Cox regression models, were employed to assess the impact of various demographic and clinical variables on survival. These variables included age, gender, tumor type, grade, stage, tumor size, nodal status, and received treatments.

Results: Survival analysis revealed significant differences across demographic and tumor-related variables. Patients younger than 50 years displayed notably superior survival rates compared to those over 70 ($p<0.0001$). The type of tumor also significantly influenced outcomes, with adenocarcinoma showing better survival than squamous cell carcinoma ($p<0.0001$). Large tumors (≥30mm) were associated with a higher mortality risk compared to smaller tumors (≤9 mm) ($p<0.0001$) (Figure 1). Multivariate analysis identified age, tumor type, grade, stage, nodal involvement, and tumor size as independent prognostic factors. The developed nomogram (Table 1), based on these findings, achieved a C-index of 0.76, demonstrating good predictive accuracy for 1, 3, and 5-year survival, supported by AUC values of 0.79, 0.79, and 0.76, respectively.

Conclusion: This analysis underscores the significance of specific prognostic factors in determining the survival of patients with early-stage NSCLC in the Brazilian context. The derived nomogram offers a valuable tool for clinicians to predict survival outcomes, facilitating personalized treatment planning. The study highlights the utility of national cancer registries in enhancing our understanding of cancer prognosis and treatment effectiveness.

Keywords: Normogram; Survival early-stage non-small cell lung cancer; Non-small cell lung cancer

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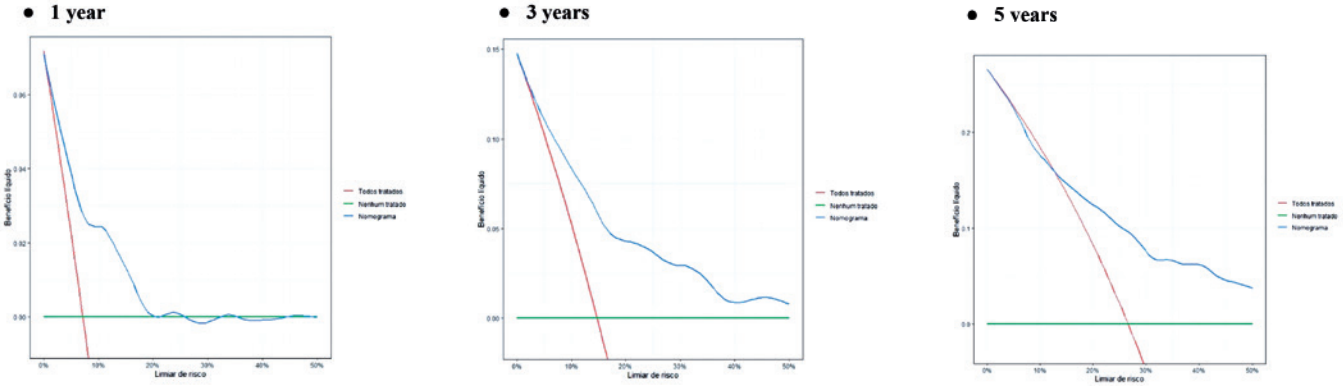
DECISION CURVE (DCA) FOR EVALUATING THE NOMOGRAM

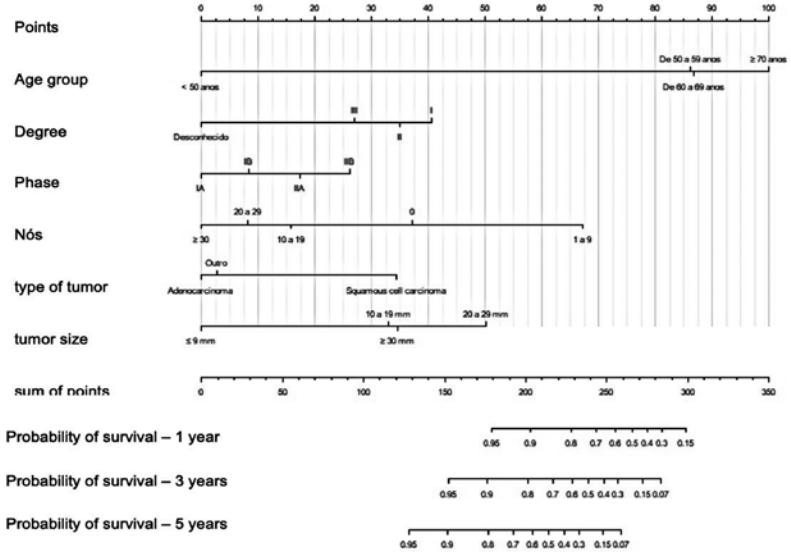


DATABASE: 736 patients overall.

Figure 1. Decision Curve Analysis (DCA) for 1-, 3-, and 5-year Overall Survival in the Study Cohort

FINAL COX MODEL NOMOGRAM

Table 1. Prognosis using the Nomogram for 1, 3 and 5 years



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