Title

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Journal

Journal of Clinical Oncology, 25(18_suppl)

ISSN

0732-183X

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Publication Date

2007-06-20

DOI

10.1200/jco.2007.25.18_suppl.7558

Journal of Clinical Oncology > List of Issues > Volume 25, Issue 18_suppl >
Meeting Abstract | 2007 ASCO Annual Meeting

DOI: 10.1200/jco.2007.25.18_suppl.7558 Journal of Clinical Oncology - published online before print June 20, 2007

Mortality risk for stage I NSCLC with poor histologic grade, tumor size ≥4 cm, and non-upper lobe tumor location: An epidemiologic study of 19,702 patients in the California Cancer Registry from 1989 to 2003

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Abstract 7558

Background: Platinum-based adjuvant chemotherapy in randomized trials has failed to provide a survival benefit in stage I non-small-cell lung cancer (NSCLC). Using data from California Cancer Registry (CCR), we explored factors that have detrimental effect on survival in stage I NSCLC to identify a subset of patients at high risk for relapse and subsequent mortality. Methods: 19,702 stage I NSCLC cases in the CCR from 1989 to 2003 were identified and subgrouped into stage IA & IB disease. Patient demographic factors, tumor characteristics and treatment delivered were examined. Kaplan-Meier survival curves were calculated to estimate survival rates. Cox proportional hazards ratios were used to identify independent prognostic factors for survival. Results: Advanced age at diagnosis, male sex, low socioeconomic status (SES), non-surgical treatment & poorly-differentiated histologic grade (stage IA: hazard ratio [HR] = 1.14; 95% confidence interval [CI]: 1.08–1.19 & stage IB: HR = 1.11; 95% CI: 1.07–1.16) were factors identified with increased mortality risk on multivariate analysis. Non-upper lobe tumor location (RML/RLL/LLL) and tumor size ≥ 4 cm (vs < 4 cm; HR = 1.22; 95% CI: 1.15–1.30) were additional factors with increased mortality risk among stage IB patients. Conversely, bronchioloalveolar carcinoma (BAC)(vs adenocarcinoma: stage IA: HR = 0.81; 95% CI: 0.72–0.91 & stage IB: HR = 0.87, 95% CI: 0.77–0.98) & Asian ethnicity (vs Caucasian: stage IA: HR = 0.81, 95% CI: 0.70–0.94 & stage IB: HR = 0.80, 95% CI: 0.72–0.90) were associated with decreased mortality risk in stage I NSCLC. Lobectomy had the lowest HRs for death among all surgical techniques for both stage IA & IB NSCLC in the Cox proportional hazards model. Conclusions: Poorly-differentiated stage IA & IB NSCLC and stage IB NSCLC located in non-upper lobes or tumor size ≥ 4 cm carried an increased mortality risk on adjusted analysis.

No significant financial relationships to disclose.

Table 1 of 1

Cox proportional hazards model for stage IA&IB NSCLC

	Stage IA (N=9157)	Stage IB (N=10545)	Hazard ratio (95% CI)	Hazard ratio (95% CI)
Tumor lobar location				
LLL RUL LUL RML RLL	1.00 0.935 (0.845–1.035) 0.996 (0.897–1.105) 1.125 (0.956–1.324) 1.027 (0.908–1.160)	1.00 0.846 (0.783–0.914) 0.831 (0.767–0.900) 0.935 (0.811–1.078) 0.940 (0.861–1.026)		
Histologic grade	1.135 (1.082–1.191)	1.112 (1.066–1.160)		
Tumor size (T2 only)				
Less than 4 cm 4 cm or greater size unknown		1.00 1.224 (1.153–1.300) 1.553 (1.330–1.814)		

Abbreviations: RUL (right upper lobe); LUL (left upper lobe); RML (right middle lobe); RLL (right lower lobe); LLL (left lower lobe); SES (socioeconomic status)Adjusted for age at diagnosis, sex, histology, ethnicity, SES, surgery, radiation & chemotherapy