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### 1041 Gender Differences in NSCLC Outcomes

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**Purpose/Objective(s):** To compare pre-treatment characteristics and clinical outcomes between male and female patients with non-small cell lung cancer (NSCLC) treated at a single institution.

**Materials/Methods:** A total of 831 patients (n = 319 female, n = 512 male) with stage I, II, or III NSCLC diagnosed from March 1985 to November 2003 and treated with at least 45 Gy of external beam radiation were retrospectively analyzed.

**Results:** Women were more likely to present with earlier stage disease, to have smoked for less than 50 pack-years, and to have adenocarcinoma or large cell carcinoma instead of squamous cell carcinoma (all  $p < 0.001$ ). Overall survival (OS) (median, 26.0 vs. 18.0 months, 5-year rate 28.6% vs. 16.1%,  $p < 0.001$ ), disease-free survival (DFS) (median, 16.0 vs. 13.0 months, 5-year rate 31.2% vs. 20.1%,  $p = 0.016$ ), and distant metastasis-free survival (DMFS) (median, 60.0 vs. 26.0 months, 5-year rate 50.3% vs. 38.7%,  $p = 0.024$ ) were significantly improved in women compared to men. In patients with squamous cell carcinoma, there was no difference in stage distribution, OS, DFS, or DMFS between men (n = 216) and women (n = 99). Among cases of adenocarcinoma or large cell carcinoma, women were more likely to have earlier stage disease than men ( $p < 0.001$ ) and OS (median, 33.0 vs. 19.0 months, 5-year rate 30.8% vs. 18.2%,  $p < 0.01$ ), DFS (median, 19.0 vs. 13.0 months, 5-year rate 34.4% vs. 20.9%,  $p < 0.01$ ), and DMFS (median, 60.0 vs. 24.0 months, 5-year rate 50.9% vs. 35.4%,  $p < 0.005$ ) were significantly improved in women (n = 220) compared to men (n = 296). Among all women, local-regional control (LRC) was significantly improved in adenocarcinoma or large cell carcinoma compared to squamous cell carcinoma (median, 138.0 vs. 20.0 months, 5-year rate 55.5% vs. 38.0%,  $p = 0.024$ ), although there was no difference in OS, DFS, or DMFS. Among all men, DMFS was significantly improved in squamous cell carcinoma compared to adenocarcinoma or large cell carcinoma (median, 33.0 vs. 24.0 months, 5-year rate 43.8% vs. 35.4%,  $p = 0.016$ ), although there was no difference in OS, DFS, or LRC. On multivariate analysis, male gender, weight loss, age, sequential chemoradiation, local failure, and distant failure predicted for decreased overall survival (all  $p \leq 0.03$ ).

**Conclusions:** Retrospective analysis suggests that women with adenocarcinoma or large cell carcinoma of the lung are more likely to have earlier stage disease and to have improved overall survival, disease-free survival, and distant-metastasis-free survival compared to men. Multivariate analysis shows that male gender, weight loss, age, sequential chemoradiation, local failure, and distant failure predicted for a reduction in overall survival in NSCLC. Potential hormonal or other predictive markers for NSCLC need to be investigated to explore the underlying mechanism of these differences.

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### 1042 Assessing the Impact of Technological Advancement on Outcome for Patients With Unresectable Locally Advanced Non-Small Cell Lung Cancer (NSCLC) Receiving Concomitant Chemoradiotherapy

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**Purpose/Objective(s):** In July 2004, new technology consisting of 4-dimensional computerized tomography (4DCT) simulation and intensity modulated radiation (IMRT) was implemented clinically for thoracic tumors at our institution. Lung cancer patients underwent 4DCT simulation and IMRT subsequently (IMRT/4DCT). The purpose of this study is to evaluate the impact of this change in technology on toxicity and disease outcome, when compared with standard CT simulation and 3-dimensional conformal radiation without 4DCT (3DCRT).

**Materials/Methods:** Patients (n = 338) with unresectable NSCLC were treated between 1999–2006 with concomitant chemotherapy and radiation. Among them 283 were treated with 3DCRT with median and range of radiation dose 63 Gy and 50–73 Gy, and