Disparities and Likelihood in the Time to Initiation of Surgical Treatment Among Females: 
Tennessee Cancer Registry Analysis

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Background: Lung cancer (LC) is the deadliest form of cancer disease in the United States. The earlier a patient diagnosed with LC receives treatment, the better the chances of survival, especially when receiving surgical treatment. This study assesses the likelihood and disparities in time to surgical treatment (TST) for invasive LC among females.

Methods: We obtained cancer registry data on 5,697 Tennessee residents diagnosed with invasive LC from Tennessee Cancer Registry from 2005 to 2015. We performed frequencies to assess individuals’ characteristics, ANOVA and t-test to determine the statistical variation in TRST, and multivariate Cox-Proportional Hazard (Cox-PH) models to estimate the relative risk and likelihood of TST beyond 2.7 weeks.

Results: We found Sociodemographic factors (age, race, marital status, and county of residence), type of insurance coverage, and stage of LC to be significantly associated with TST of invasive LC after 2.7 weeks, but not sex and surgical treatment. Females aged < 45 received surgical treatment before males < 45 (p = 0.029); however, males 75+ received surgical treatment earlier than females 75+ on average (p = 0.014). Black males also were more likely to receive surgical treatment earlier than black females (p = 0.020). Considering all analyzed factors, females were more at risk of delayed treatment than males.

Conclusion: We have shown the disparities in TST in LC and its associated factors in females. In addition, our study serves as a guide for developing health policy interventions on lung cancer treatment to address disparities between females and other groups as we seek to improve patients’ treatment and length of survival.

Keywords: Lung Cancer; Surgical Treatment; Cancer Disparities; Cancer Epidemiology