

Representation of Women in Lung Cancer Randomized Trials – A Systematic Review

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Objective: To perform a systematic review of randomized trials examining non-small cell lung cancer to better understand the equity afforded to women in the study of lung cancer.

Methods: An electronic search was conducted for all non-small cell lung cancer randomized trials published between 2010 and 2020 with included words "carcinoma, non-small cell lung" and "non-small cell lung cancer". Studies from PubMed, Cochrane and SCOPUS were included, and 2049 studies were initially uploaded into Covidence to assist with systematic review. A two-person screening of all studies was performed, and 269 articles were identified as eligible for this study. All articles were reviewed for data regarding location, study type, cancer stage, field of study of the research team and number of males and females included in analysis. A two-sample T-test comparing the overall means of males and females was calculated.

Results: Across all studies, 38.7% of patients were female. Compared to studies from 2010-2015, those from 2016-2020 had an increase in the representation of females from 36.7% to 41.4% ($p=0.0081$). Published studies from non-surgical groups enrolled 38.1% female patients compared to their surgical counterparts at 43.1% ($p=0.0005$). RCTs and clinical trials had similar breakdowns of sex with 37.4% and 39.1% of females, respectively. When stratified by geographical location, all regions had a higher percentage of male patients enrolled except for South America, which only had two studies included. Trials from the United States had the least difference between sexes with 46.7% females. Studies examining stage I-IIIa patients enrolled 37.6% females and studies examining stage IIIB-IV enrolled 37.6% females. Comparing the overall representation of female to males patients enrolled in these trials yielded a significant difference ($p<0.0001$).

Conclusions: There is a difference in representation between males and females in randomized trials. Future trials should include more females as they currently do not reflect the high incidence of lung cancer in women, which in 2022 was approximately 50.2%.

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