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Multimorbidity and its impact in older united states veterans newly treated for advanced non-small cell lung cancer

Abstract:

U.S. veterans with cancer often have multiple comorbidities, or multimorbidity, but the nature of these comorbidities is poorly understood. Here we define patterns of multimorbidity and their impact in older United States veterans with non-small cell lung cancer (NSCLC). Latent class analysis (LCA) was applied to identify patterns among 63 chronic conditions in 10,160 veterans aged 65 years and older newly treated for stage IIIB or higher NSCLC in the national Veterans Affairs health-care system from 2002 to 2020. Five patterns emerged, with metabolic diseases (24.7% of all patients; HR [95% CI], 1.10 [1.04 -1.16]), psychiatric and substance use disorders (16.0%; HR [95% CI], 1.17 [1.10-1.24]), cardiovascular disease (14.4%; HR [95% CI], 1.22 [1.15-1.30]), and multisystem impairment (10.7%; HR [95% CI], 1.36 [1.26 -1.46]) having a higher hazard of death compared to veterans with minimal comorbidity beyond their NSCLC (34.2%, reference), controlling for age, gender, race, days between diagnosis and treatment, date of diagnosis, and NSCLC stage and histology. Associations held after adjusting for the count-based Charlson Comorbidity Index. Multimorbidity patterns were also independently associated with emergency department visits and unplanned hospitalizations. These findings demonstrate the need to move beyond count-based measures of comorbidity, which are unlikely to capture the complexity of multimorbidity in older adults with lung cancer, and to consider cancer in the context of multiple chronic conditions.

Biography

Joseph Larsen, Ph.D. is a post-doctoral research fellow at the Veterans Affairs (VA) Boston Healthcare System in the Big Data Scientist Training Enhancement Program (BD-STEP) with an appointment at Harvard Medical School and the Division of Aging at Brigham and Women's Hospital in Boston, Massachusetts. His research focuses include modeling human evolution and the progression of diseases (e.g., cancer and COVID-19) as well as his current work on the impact of multimorbidity patterns in patients with non-small cell lung cancer. His research background during his education at UCLA and USC to now his postdoctoral work at the VA Boston and Harvard Medical School has garnered him skills in mathematical modeling, statistical analyses, large database acumen, electronic health records (EHR) utilization, survival analysis, and machine learning, which he uses to study disease progression and its impact on patient outcomes and care utilization