Older Adult in the 60’s with Lung Cancer

[Author]

[Institutional Affiliations]

Abstract

Lung cancer is the leading cause of deaths among older adults in United Sates and the most common type is non-small-cell lung cancer. Its incidence rate is significantly high among old age as age is a risk factor for many kinds of invasive cancers. However, the diagnosis is quite complicated in this age and the measure of predictable indicators for lung cancer become difficult to evaluate. With increasing age, the bodily functions and the tolerability towards extensive treatment reduces. There is little evidence based practice to follow up and fewer cases of non-small cell lung cancer in older patients have been reported yet. The clinical trials lack the in-depth knowledge about the treatment measurement and patient outcomes at late ages. There is a gap in literature and practice that is a complication for health service organizations to overcome and ensure population health and effective treatment for invasive cancers.

*Keywords:* Incidence, Prognosis, Non-small-cell Lung Cancer, Indicators, Mortality, Co-morbidity, Clinical Trials, Cancer Screening

**Introduction**

Older adults pose a greater probability to be at risk of cancer. About two-thirds of all types of cancers are primarily diagnosed among adults of age 60 or above. With the number of older adults increasing with time, the incidence rate of new cancer cases will increase too. This longevity trend provides opportunity for health specialists to shift the health care imperative towards older adults. Lung cancer is the second most common cancer type in males and females older than 60 years. The incidence rate of lung cancer in older males is 93,960 and in older females, it is 85,577 in the United States (White, Holman, Goodman, & Richardson, 2019). The National Cancer Institute has estimated that as age increases, the risk of diagnosis for invasive cancers also increases. Among lung cancer, the non-small-cell lung cancer (NSCLC) is the most prevalent type and account for around 85% of lung cancer related deaths. Majority of deaths are expected in the older adults and it is likely to increase up to 70% by 2023 (Gao et al., 2015a). Though the incidence rate is increasing significantly among elderly people, there is little clinical representation. It has been suggested by many trials that poor performance and comorbidities are more common in advanced age and leads to improper administration of treatment.

**Problem Statement**

Older adults have comparatively poor diagnosis and prognosis and the distinct clinicopathologic characteristics are not well constituted. When NSCLC is diagnosed in elderly patients, 60-70% of cancers have already metastasized or is unresectable. Lung cancer mainly affects people in their 60s and 70s, yet their cases are underrepresented and there is not sufficient data on management for stages III and IV of NSCLC in the elderly (Gao et al., 2015). Majority of patients suffering from lung cancer NSCLC are not provided with chemotherapies and the treatment mechanism is not so efficient either (Meoni, Cecere, Lucherini, & Di Costanzo, 2013). Only fewer current clinical trials are available that adhere to the standard treatment guidelines for these older adult lung cancer patients (Gridelli, 2012).

The purpose for selecting this particular problem is that lung cancer is so much common among elderly people, yet there is not enough data or treatment strategies available to deal with the disease. There are so many controversies over this issue but the current requirement is to search for advanced medical procedures for the diagnosis of the disease in its early stages and implementation of the appropriate treatment mechanism as per the standard guidelines. The health care organizations must devise intervention strategies for solving the problem of cancer screening in older patients. The common variables for lung cancer risk in older patients is smoking, familial history, previous or concurrent medical conditions and epigenetic factors. The appropriate selection of elderly patients with lung cancer for screening should be optimized based on validated risk-based targeting (Tammemägi et al., 2013).

**Stake holders and Organizations**

Health quality measurement is a keystone in assessing the high-value healthcare in any nation to achieve the highest patient outcomes while minimizing the budget. Different public and private stakeholders in the healthcare system determine the measures for improving the nation’s health and provides recommendations. These measures primarily state the effective ways of cancer screening; recommended treatment is either chemotherapy, radiotherapy or surgery. It also addresses the morbidity and mortality rate of the disease (Institute of Medicine (US), 2013). National Committee for Quality Assurance (NCQA) has developed an effective tool for measuring the performance of health plans in important healthcare domains. It has established measures for screening, accountable care organizations and physician measurement. It has developed the use of Evidence-Based Systemic Therapy for older patients with NSCLC that has already metastasized (Valuck et al., 2017). National Quality Forum (NQF) also manages to maintain its quality positioning system for delivering healthcare system with tools to standardize treatment procedures and measurement of process, perceptions and patient outcome. It uses Donabedian framework for assessing outcome of a health indicator; tobacco abuse in adult population and screening older people in 60s for NSCLC (National Quality Forum, 2018). Healthy People 2018 has used the tobacco model for identifying the potential indicator of lung cancer and other pulmonary diseases. It also includes the incidence and mortality of the disease by keeping tobacco as a potential contributor and its association with NSCLSC (Davis, Lavender, Bayakly, Ray, & Moon, 2013).

**Background Information**

With the advent of recent diagnostic techniques, lung cancer screening has proved to significantly reduce the mortality rate among high-risk cancer patients. The low-dose computed tomography is a novel and efficient methodology that is associated typically with lung cancer. However, most of the lung cancer patients are older adults in the early 60s and are already subject to multiple age related and smoking co-morbidities. Thus, the cancer screening becomes a complex deal and requires careful consideration regarding patient’s risk factors and life expectancy. The issue of false and over-diagnosis is quite common among older patients and it leads to lower patient outcomes (Fabrikant, Wisnivesky, Marron, Taioli, & Veluswamy, 2018). It is imperative for the health professionals to see to the patient tolerability towards surgical procedures, chemo and radiotherapies.

In patients older than 60 years, NSCLC is suggested to be inoperable as the adenocarcinoma, squamous carcinoma and various histologies become complicated for early diagnosis. If the tumor is detected in the early stages, it can be operated by standard surgeries but for metastatic tumors in stages IIIA, IIIB and IV, surgery becomes impossible as the tumors grow very extensive or become unfit for resection. In such patients, only radiation therapy can be used along with chemotherapy (Rosenzweig & Greco, 2008). However, this practice is not well standardized and exercised in older patients and the medical neglect makes the treatment not favorable for them. Moreover, the old age co-morbidity is also a factor for poor treatment outcome. Their ability to undergo complicated surgeries and chemotherapies is significantly reduced due to decreased functional reserve. Various studies have suggested that if the inclusion criteria and screening procedures are more accurate, older age patients can benefit from such treatments.

**Narrative summary**

Based on the literature review and previous clinical trials, guidelines have recommended that lung cancer screening should be considered in older patients based on their smoking history. People in the late 50s till their 80s should be subject to clinical trials and regular observations who are at high risk for developing the disease. It should also be made mandatory that the selection of candidates for the suggested treatments be identified based on the ability to tolerate the consequences and also the benefits they will attain from the procedure. There is a dire need for a comprehensive geriatric assessment for the accomplishment of positive outcomes and reducing the NSCLC mortality rate in adults (VanderWalde, Pal, & Reckamp, 2011). There is also not enough literature available on the trials conducted on the older patients diagnosed with NSCLC and their reviews have not been given enough consideration for wider studies. There is a gap in the diagnosis and prognosis of the disease in older patients though it is the most common cause of deaths in United States (Gao et al., 2015b).

**Conclusion**

Age is one of the most important risk factors for NSCLC and it is most prevalent among older adults in United States. The determination of the disease and the outcome of treatment is a complicated matter as the risk of death from the later stages of cancer, treatment methodologies, histology, older age morbidities have significant effects. It is important for the healthcare organizations to assess the patient’s characteristics, prognosis, toxicities and other important factors for selection and treatment. It is also important to identify the health indicators in older population to reduce the incidence rate and improve the population health. The risk factor for NSCLC should be kept under observation and the older populations should be tested against those indicators. The public and private healthcare organizations should introduce programs for assessing the health quality and conducting evidence based research for improving the patient outcome by timely diagnosis and efficient treatment procedures.

**References**

Davis, V. N., Lavender, A., Bayakly, R., Ray, K., & Moon, T. (2013). Peer Reviewed: Using Current Smoking Prevalence to Project Lung Cancer Morbidity and Mortality in Georgia by 2020. *Preventing Chronic Disease*, *10*.

Fabrikant, M. S., Wisnivesky, J. P., Marron, T., Taioli, E., & Veluswamy, R. R. (2018). Benefits and challenges of lung cancer screening in older adults. *Clinical Therapeutics*, *40*(4), 526–534.

Gao, Y., Gao, F., Ma, J., Zhang, X., Li, Y., Song, L., & Zhao, D. (2015a). Analysis of the characteristics and prognosis of advanced non-small-cell lung cancer in older patients. *Patient Preference and Adherence*, *9*, 1189–1194. https://doi.org/10.2147/PPA.S87069

Gao, Y., Gao, F., Ma, J., Zhang, X., Li, Y., Song, L., & Zhao, D. (2015b). Analysis of the characteristics and prognosis of advanced non-small-cell lung cancer in older patients. *Patient Preference and Adherence*, *9*, 1189.

Gridelli, C. (2012). Lung cancer: Locally advanced NCSLC in the elderly: Which treatment? *Nature Reviews Clinical Oncology*, *9*(8), 434.

Institute of Medicine (US). (2013). *Toward quality measures for population health and the leading health indicators*. Committee on Quality Measures for the Healthy People Leading Health Indicators: National Academies Press.

Meoni, G., Cecere, F. L., Lucherini, E., & Di Costanzo, F. (2013). Medical treatment of advanced non-small cell lung cancer in elderly patients: A review of the role of chemotherapy and targeted agents. *Journal of Geriatric Oncology*, *4*(3), 282–290.

National Quality Forum. (2018). *NQF Report on 2017 Activities to Congress and the Secretary of the Department of Health and Human Services*. U.S. Department of Health and Human Services.

Rosenzweig, K., & Greco, C. (2008). Non-small cell lung cancer. *PET-CT in Radiotherapy Treatment Planning E-Book*, 140.

Tammemägi, M. C., Katki, H. A., Hocking, W. G., Church, T. R., Caporaso, N., Kvale, P. A., … Commins, J. (2013). Selection criteria for lung-cancer screening. *New England Journal of Medicine*, *368*(8), 728–736.

Valuck, T., Blaisdell, D., Dugan, D. P., Westrich, K., Dubois, R. W., Miller, R. S., & McClellan, M. (2017). Improving oncology quality measurement in accountable care: Filling gaps with cross-cutting measures. *Journal of Managed Care & Specialty Pharmacy*, *23*(2), 174–181.

VanderWalde, A., Pal, S. K., & Reckamp, K. L. (2011). Management of non-small-cell lung cancer in the older adult. *Maturitas*, *68*(4), 311–321.

White, M. C., Holman, D. M., Goodman, R. A., & Richardson, L. C. (2019). Cancer Risk Among Older Adults: Time for Cancer Prevention to Go Silver. *The Gerontologist*, *59*(Supplement\_1), S1–S6. https://doi.org/10.1093/geront/gnz038