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Impact of Timing of Lung resection on Survival for Clinical Stage I and II Lung Cancer

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Background

Lung cancer is the second most common cancer in both men and women, and comprise 13% of all new cancers. It is by far the leading cause of cancer death among men and women. Each year, more people die of lung cancer than of colon, breast, and prostate cancers combined.(1,2) There is an increasing effort towards early-detection of lung cancer, since it is a curable cancer if diagnosis and treatment are performed in a timely manner.(3)

Surgical resection is the most effective treatment for lung cancer in early stages, providing greater long-term survival. Clinical guidelines on acceptable time frames between diagnosis and resection of early-stage lung cancer do not exist.

Objectives

This work aims to assess whether increasing time between diagnosis/first doctor visit and surgery for early stage non-small cell lung cancer (NSCLC) is associated with poorer survival.

Methods

We identified a retrospective cohort of incident lung cancer cases who had surgical treatment for lung cancer at our institution between January 2009 and December 2017, and no prior radiation or chemotherapy. We assessed overall survival (OS) and predictors included a) time from first contact to surgery; and b) time from diagnosis to surgery. The association between date of diagnosis and date of first contact of a health care provider to surgery, and survival for patients with early stage NSCLC was assessed using multivariable Cox proportional hazard. We investigated four cut-off points: surgery within 15 days, 30 days, 60 days and 90 days. We controlled for socio-demographic characteristics as well as clinical outcomes.

Results

Our cohort comprised 451 patients. The age average was 67 years, 61% female, 94.7% white, and 9% never smoked. Clinical Stage 1A and 1B corresponded to 86.5% of patients while in pathological stage it was 76%.

We did not find any significant association between OS and (a) the time from first visit to surgery for either, any provider or thoracic surgeon. The time from diagnosis to surgery (b) was associated with OS and the threshold time associated with statistically significant worse survival was 60 days after diagnosis.

5-year survival was 56.0%. Surgery occurred a median 40 days after the diagnosis and 43 days after the first visit and within 35 days if the first appointment was with a thoracic surgeon.

We found no significant association between OS and (a) the time from first visit to surgery for either, any provider or thoracic surgeon. The 5-year overall survival was 56.0%.

Conclusions

Greater intervals between diagnosis of early-stage NSCLC and surgery are associated with worse survival. Efforts to minimize delays, particularly factors that prolong the period from diagnosis to first contact with a lung cancer provider may improve survival.

References


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