

Treatment Delay and Survival in Patients with Non-Small Cell Lung Cancer

Myrdal G, Lambe M, Hillerdal G, et al. Effect of delays on prognosis in patients with non-small cell lung cancer. Thorax 2004;59:45-9.

Study Overview

Objective. To assess the effects of delays in treatment on survival for patients with non-small cell lung cancer (NSCLC).

Design. Retrospective analysis.

Setting and participants. Between 1995 and 1999, 466 patients were diagnosed and treated for NSCLC at 2 institutions in Sweden. Patients were identified from a regional cancer registry that included data on tumor stage, pathology, and treatment. Additional clinical data were extracted from medical records at the 2 institutions including dates of initial symptom(s), consultation, and treatment (available for 76%, 89%, and 100% of the patients, respectively).

Main outcome measures. The effects of symptom-to-treatment delay and hospital delay on survival were compared in multivariate analyses. Symptom-to-treatment delay was defined as the length of time from symptom onset until the start of treatment. Hospital delay was defined as the length of time from the first hospital visit to the start of treatment. Delay times were not normally distributed. The Mann-Whitney test was used for comparisons of delay.

Main results. Treatment included surgery, and/or chemotherapy, and/or radiation. 35% of patients were treated within 4 weeks of the first hospital visit, and 52% were treated within 6 weeks. Median symptom-to-treatment delay was 4.6 months, and median hospital delay was 1.6 months. Patients with stage IV NSCLC had shorter delays (both symptom-to-treatment and hospital-to-treatment delays) than patients with earlier stages of disease. This also was true for patients who did not undergo surgical treatment compared with patients who did undergo surgery. There were no significant differences in treatment delays when stratified by sex, age, or histology. Age greater than 70 years, advanced stage, and nonsurgical treatment were independently associated with poor survival (median follow-up was 20.4 months). Symptom-to-treatment delay of less than 3 months was associated with a 3-year survival of 11%. A

delay of greater than 6 months was associated with a 3-year survival of 35%. On multivariate analysis only, decreased symptom-to-treatment delay was associated with a poor prognosis, an association which was most pronounced in patients with advanced NSCLC.

Conclusion. Short delay to treatment was associated with a poor prognosis in patients with NSCLC.

Commentary

NSCLC is the leading cause of cancer-related mortality for men and women. The majority of patients with NSCLC will not survive beyond 5 years from diagnosis. However, surgery, chemotherapy, and radiation still serve important potentially curative roles for patients diagnosed with early stage disease and are palliative for those with more advanced stages [1,2]. Finding disease early enough to affect cure remains an important focus of ongoing randomized computed tomography screening studies in patients at high-risk for developing NSCLC. Another important issue for all patients with NSCLC is whether delays in treatment affect survival.

Myrdal and colleagues attempt to address the issue of treatment delay in a retrospective analysis. The authors conclude that delays in treatment do not adversely influence survival for patients with NSCLC. Rather, the results suggest that reduced delays in treatment are associated with poorer survival. The study's strengths include the use of a regional cancer registry together with individual medical record review for data extraction. The study also is strengthened by the use of multivariate analyses. However, the study has some weaknesses that include its retrospective design and varied mix of patients and treatments. The authors correctly point out the potential selection bias of this analysis—that the sickest patients (stage IV, elderly, nonsurgical candidates) might be more likely to receive therapy sooner than other patients in the analysis. What is not clear is whether receiving treatment(s) earlier after diagnosis leads to an improved or decreased survival. Ideally this question would best be answered in a prospective randomized setting where

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patients with similar baseline characteristics are randomized to early versus delayed treatment.

Applications for Clinical Practice

The timing of treatment for NSCLC should be based on disease stage, patient performance status/comorbidities, goals of therapy, and patient preference.

—Review by David R. Spiegel, MD

References

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2. Chemotherapy in non-small cell lung cancer: a meta-analysis using updated data on individual patients from 52 randomized clinical trials. Non-small Cell Lung Cancer Collaborative Group. BMJ 1995;311:899-909.

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