

## Helping Patients with Lung Cancer Quit Smoking: An Attainable Goal

Sanderson Cox L, Patten CA, Ebbert JO, et al. Tobacco use outcomes among patients with lung cancer treated for nicotine dependence. *J Clin Oncol* 2002;20:3461–9.

### Study Overview

**Objective.** To examine baseline characteristics and the 6-month tobacco abstinence rate among patients with lung cancer treated for nicotine dependence as compared with matched controls.

**Design.** Matched case-control.

**Setting and participants.** 402 patients being treated at the Mayo Clinic Nicotine Dependence Center (NDC) were studied. Case patients ( $n = 201$ ) were smokers (previously diagnosed with lung cancer) selected from a medical/tumor registry cross-referenced with a NDC database. Control patients smoked but did not have a diagnosis of lung cancer ( $n = 201$ ). Smoking was defined as the use of tobacco during the 6-month period prior to participation in the NDC.

**Methods.** Lung cancer patients were stratified by intensity of treatment settings (ie, residential or nonresidential). The residential program was the most intensive treatment setting, consisting of 8 days of group- and individual-based interventions. Control patients were matched by setting and date of treatment (within 1 day of case patients). 6-month follow-up data for patients treated for nicotine dependence was available in the NDC database. Baseline characteristics and tobacco use history were obtained from a self-administered questionnaire and form completed by a NDC counselor. Precontemplation, contemplation, and action stages of change were assessed. A physician reviewed medical records for missing baseline data, and lung cancer stage and date of diagnosis were identified from the tumor registry. Treatment in the NDC was provided by a trained counselor and incorporated behavioral, addiction, pharmacologic, and relapse prevention approaches. Interventions were individualized, and medication, when needed, was prescribed at the discretion of the patient's physician. Intervention and adherence data were not recorded. Follow-up consisted of telephone interviews from counselors who were not previously involved in the patient's care and who offered encouragement and support and assessed self-reported tobacco use.

**Main outcome measures.** The primary endpoint was the 6-month self-reported point prevalence tobacco use status. Abstinence was defined as not using cigarettes, cigars, pipes, or smokeless tobacco in the 7 days before the telephone interview. Analysis was by intention-to-treat. Patients missing the 6-month tobacco use outcome for any reason were classified as using tobacco. Two-sample rank sum,  $\chi^2$ , and logistic regression analyses were used.

**Main results.** Baseline characteristics between the 2 groups were balanced in 15 of 25 categories. Most patients were white (97%), male (57%), smoked between 20 to 39 cigarettes per day over the previous 6 months, and had been smoking for 30 to 40 years. 20% of patients in each group had previously attempted to quit on at least 6 occasions. The patients with lung cancer were older (by ~11 years) and had a longer duration of tobacco use (10 years more). Additionally, these patients had fewer prior attempts at quitting, higher levels of motivation (65% versus 51%;  $P = 0.003$ ), and a greater proportion in the action stage (ie, had stopped smoking at the time of the intervention or within the previous 6 months;  $P = 0.002$ ). Most of these patients had non-small-cell lung cancer stage 3 or less.

At 6-month follow-up, 18 patients with lung cancer had died compared with none in the control group. The 7-day point prevalence tobacco abstinence rate at 6 months was 22% for patients with lung cancer and 14% for controls. By logistic regression, the patients with lung cancer were significantly more likely to achieve 6-month tobacco abstinence compared with controls (odds ratio, 1.89 [95% confidence interval, 1.09–3.30];  $P = 0.024$ ). Adjusting for age, sex, history of mean cigarettes per day, and stage of change, there was no difference in quitting rates between the groups. Patients who were diagnosed with lung cancer within 3 months of the NDC treatment were more likely to be abstinent compared with those diagnosed between 3 to 6 months or more than 6 months (27% versus 0% versus 7%;  $P = 0.10$ ).

**Conclusion.** The results suggest that nicotine dependence treatment is effective for patients with a diagnosis of lung

cancer. The majority of lung cancer patients were motivated to stop smoking.

### Commentary

There is little debate these days that cigarette smoking is the cause of at least 85% of all lung cancers [1]. Despite counseling, medical therapies, and increasing social pressures, most initial attempts to quit are not successful [2]. Physicians play an integral role in continuing to motivate their patients who desire to quit even after multiple attempts. Should physicians continue giving this message to patients who have already developed complications from smoking? Certainly, a mainstay of care in coronary artery disease and diabetes, particularly in patients with more advanced conditions, is smoking cessation. The same probably cannot be said for patients with advanced cancer, although limited data make this supposition anecdotal at best. Even if one overlooks the rare problem of second primary tumors (eg, in patients with small-cell lung cancer [3]), continued smoking in patients with lung cancer can adversely affect mortality, other medical conditions (eg, often associated obstructive lung disease), and morbidity associated with treatments (ie, surgery, radiation, and chemotherapy.)

Cox et al conducted an intriguing analysis of patients with lung cancer who were actively encouraged to stop smoking. The study's merits include its setting in a renowned cessation program (which has treated more than 24,000 patients in the last 14 years), use of a central database and registry supplemented with chart review, and focused endpoint. The combination of behavioral and medical interventions appears similar to recommendations endorsed by other cessation programs nationwide and society guidelines.

The 7-day abstinence rates at 6 months were 22% for patients with lung cancer and 14% for controls. Patients with lung cancer were significantly more likely to achieve 6-month tobacco abstinence compared with controls. Importantly, after adjusting for several variables (age, sex, extent of smoking, and readiness to quit), this difference was erased (actual rates are not provided). The analysis also suggests that patients recently diagnosed (< 3 months) with

lung cancer had the greatest chance of quitting. The authors' other conclusions are based on manipulations of the data and assumptions in abstinence rates among patients who died and thus become less persuasive. In fact, the analysis is fraught with many weaknesses, which the authors are quick to note. Potential referral bias makes it difficult to generalize these results to all patients with lung cancer, much less patients with other cancers. Additionally, the groups were unbalanced. More patients with lung cancer were motivated and ready to quit at time of selection, which makes comparisons unfair. When these and other variables are adjusted between the groups, the cessation rates are equivalent. Perhaps that is the take-home point: that patients with lung cancer can be motivated and helped to quit. Helping patients help themselves at a time in their lives when treatments are difficult and long-term survival is poor may be something worth remembering.

### Applications for Clinical Practice

Helping patients with cancer to quit smoking is a worthwhile endeavor. Physicians should not underestimate a patient's desire to quit nor assume the diagnosis is sufficient motivation. Evidenced-based approaches to cessation remain as important in this population.

*—Review by David R. Spigel, MD*

### References

1. A report of the Surgeon General: the health benefits of smoking cessation. Washington (DC): U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 1990. DHSS Pub. No. (CDC) 90-8416.
2. Jorenby DE, Leischow SJ, Nides MA, et al. A controlled trial of sustained-release bupropion, a nicotine patch, or both for smoking cessation. *N Engl J Med* 1999;340:685-91.
3. Richardson GE, Tucker MA, Venzon DJ, et al. Smoking cessation after successful treatment of small-cell lung cancer is associated with fewer smoking related second primary cancers. *Ann Intern Med* 1993;119:383-90.

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