

## Following Patients with Advanced Cancer: Satisfaction with Nurse-led Care

Moore S, Corner J, Haviland J, et al. Nurse led follow up and conventional medical follow up in management of patients with lung cancer: randomised trial. *BMJ* 2002;325:1145–51.

### Study Overview

**Objective.** To assess the effectiveness of nurse-led follow-up in the management of patients with lung cancer.

**Design.** Randomized controlled trial.

**Setting and participants.** Specialist cancer hospital and 3 cancer units in England. Participants were lung cancer patients who had completed their initial treatment, had good performance status, had an expected mortality of 3 months or more, and were not receiving cancer treatment or close medical supervision.

**Methods.** Patients were randomized either to conventional medical follow-up or nurse-led follow-up. Care for patients in the conventional group remained unchanged (ie, routine assessment and monitoring for disease progression), while the remaining patients were allocated to nurse specialists in lung cancer. Nurses assessed patients via telephone or at a nurse-led clinic using a protocol to identify disease progression, symptoms warranting intervention, or serious complications. Assessment occurred 2 weeks after baseline, then every 4 weeks, with same-day appointments available. No routine studies were performed. Patients had open access to nurses, and contact through clinic, telephone, and pager service.

Nurses were responsible for the entire care of patients in the nurse-led group, unless the patient needed further treatment. The nurses prepared for the role by observing lung cancer clinics and shadowing oncologists. Physicians and nurse instructors regularly supervised sessions for the nurses. There was regular discussion with and referral to the primary oncology team on detection of any new symptom or worsening of condition.

**Main outcome measures.** Primary outcomes were quality of life (QOL) and patient satisfaction at 3 months. QOL was measured at baseline and at monthly intervals by using the European Organization for Research and Treatment of Cancer's core QOL questionnaire and lung cancer module. Patient satisfaction was assessed at baseline and at 3, 6, and 12 months. General practitioner satisfaction also was assessed at the end of study participation. Secondary end-

points included overall survival, symptom-free survival, and progression-free survival. Median scores for QOL and satisfaction subscales between the groups were compared using the Mann-Whitney U test. A Kaplan-Meier survival analysis to estimate median survival and the log rank test for comparing overall survival, symptom-free survival, and progression-free survival were used. Costs of visits, hospital treatment, tests, and procedures were calculated. Medians for differences between randomized groups were used because distributions of outcome variables were skewed.

**Main results.** 202/271 (74.5%) eligible patients agreed to participate. Patients were randomized either to nurse-led follow-up ( $n = 99$ ) or conventional medical follow-up ( $n = 103$ ). Most attrition resulted from death or ill health. The mean age of patients in each group was 67 years and most participants were men. The clinical characteristics at baseline (including lung cancer type and stage, and comorbidities) were similar between groups, as were scores for QOL and patient satisfaction.

Three months after randomization, patients in the nurse-led follow-up group rated their dyspnea as less severe than did patients in the conventional care group ( $P = 0.03$ ). No other statistically significant differences existed at 3 or at 6 months. At 12 months, patients in the nurse-led cohort had better scores for emotional functioning ( $P = 0.03$ ) and less peripheral neuropathy ( $P = 0.05$ ). At 3, 6, and 12 months, the patients who received nurse-led follow-up scored significantly higher in each satisfaction subscale. 78% of patients randomized to nurse-led follow-up preferred nurse-led care if asked to choose, but only 17% of patients who received conventional medical follow-up preferred to see a doctor only.

70% of patients died during the study. Kaplan-Meier estimates of median survival time were similar: 9.2 months (95% confidence interval [CI], 6.2–12.1) versus 10.4 (95% CI, 7.6–13.2) months ( $P = 0.99$ ). Estimates of median time to symptomatic progression times to objective progression were similar. Patients receiving nurse-led follow-up had significantly fewer medical consultations with a hospital doctor at 3 months and had fewer radiographs at 3 and 6 months. Significantly more nurse-led patients died at home rather than in a hospital

or hospice. Patients who received nurse-led care made no greater call on other professionals or services, and no significant difference in readmission rates was seen. Comparison of the overall costs of care for the 3 periods of follow-up showed no significant differences. No significant differences in general practitioner satisfaction were seen between the patient groups.

**Conclusion.** Nurse-led follow-up was safe and acceptable to both lung cancer patients and general practitioners and led to positive outcomes.

**Commentary**

Lung cancer is the leading cause of cancer-related mortality for men in the United States and in Europe. Most patients are diagnosed at advanced stages where therapies have limited roles in extending survival and are largely palliative. After initial treatment, patients are followed for evidence of symptomatic progression or complications of treatments. Retrospective analyses suggest that more intensive follow-up care does not impact overall survival, and, at least in breast cancer, may adversely impact QOL [1-3]. U.S. surveillance guidelines for patients with advanced lung cancer suggest intermittent office visits and to not perform routine testing or imaging [4]. Intermittent visits can be limiting for patients who may have many questions and concerns and yet time consuming for physicians.

In this context, Moore and colleagues asked an important question: can trained oncology nurses effectively manage follow-up care of patients with lung cancer? This randomized study largely enrolled patients with advanced disease who were functioning well both physically and emotionally. Slightly more than half of the patients had died within 12 months. Nurse-led follow-up proved to be as effective and safe for patients as "usual" care. More important, patients appeared to be more satisfied with their care, while seeing their physicians less, and undergoing fewer tests. Indeed, no patient in the nurse-led group availed themselves of the opportunity to switch back to usual care at the study's

end. It is important to recognize limitations of this analysis, which include small numbers of patients and a primary outcome limited to analysis at 3 months. Additionally, it is not clear that the treatments received prior to enrollment were balanced. Finally, it is worth remembering that the median (and not mean) differences between the groups were reported because of skewed distributions.

Still, this study is provocative in that it suggests patients do not necessarily have to see their doctor to be more satisfied with their care. Improving communication and access to nurse providers may more than substitute for the hurried and intermittent doctor visit where important issues may not be adequately addressed. Improving how we address the needs of our patients who live with terminal conditions is a step towards improving their care.

**Applications for Clinical Practice**

Nurse-led follow-up care for patients with advanced cancer appears to result in high patient satisfaction and may reduce visits and testing. High-volume oncology clinics should consider piloting trials to determine individual safety and patient satisfaction.

*—Review by David R. Spigel, MD*

**References**

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