Lung Cancer—Elapsed Time from Suspicious Radiograph to Treatment: How Fast is Fast Enough?

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Starting in the mid 1990s, the Department of Veterans Affairs (VA) implemented a series of process improvements that catapulted its health care system into elite company in U.S. medicine.1,2 Focusing on health maintenance and disease prevention and working in conjunction with Department of Defense medical leaders, the VA developed a series of evidence-based, Clinical Practice Guidelines (CPGs) and introduced them into Primary Care Clinics and to a lesser extent the in-patient environment throughout its national system.3 One component of the VAs remarkable success as a health system has been regionalizing health care into 21 Veterans Integrated Service Networks (VISNs), whose compliance with VA CPGs has been monitored and tracked by the VA Central Office. Leaders and clinicians from compliant VISNs have served as proponents and trainers for less successful VISNs. Thus, VA transformation resulted from the combination of strong central oversight and regional autonomy.

In the current issue of JTO, Powell and his colleagues describe an initial assessment of how long it takes veterans with suspicious lung nodules or masses to receive definitive treatment. Their study data are representative of national veterans’ care, since 133 of 139 VA medical centers participated. At first glance, the study’s primary end point, that a median of 71 days elapse between finding a suspicious pulmonary lesion and delivering definitive treatment, seems excessive. However, it is important to analyze individual factors contributing to the elapsed time to determine whether treatment should be considered delayed or appropriate.

Data collected in the study are subject to multiple limitations. The start time for each patient’s study entry began when either a chest radiograph or chest computed tomography (CT) scan revealed a lesion suspicious for malignancy. However, these imaging procedures are not equivalent. Chest radiographs are rapid, safe, and widely available, so it is likely that at least some abnormal chest radiographs were ordered as screening procedures. CT scans, on the other hand, are not ordered routinely. Thus, patients diagnosed by CT scan would much more likely have been symptomatic and their diagnostic evaluations would have been shortened. Another study weakness is that the authors did not describe radiographic characteristics of the lesions. Simply reporting lesion size would have stratified the risk that an individual lesion was malignant.4 An additional study weakness is that over 10% of VA medical centers are located in geographic regions of the United States in which a large numbers of pulmonary nodules are caused by endemic mycotic infections. Appropriate standard of care at these centers may require several months follow-up of pulmonary lesions likely to be granulomatous, before initiating diagnostic evaluation for malignancy.

Most veterans, including those reported in this study, are complicated medical patients, who tend to be elderly and have multiple comorbidities. The cigarette smoking...
which predisposed them to the development of lung cancer has typically caused chronic obstructive pulmonary disease, atherosclerotic heart disease, and other tobacco-associated diseases. The VA patient population is additionally characterized by significant prevalence of mental illness and homelessness, two factors which greatly complicate treatment planning and implementation.

The National Cancer Institute statement about anxiety disorders in cancer patients’ reports that up to 44% of patients with a suspected cancer diagnosis develop some anxiety and 23% significant anxiety during cancer screening, diagnostic testing or recurrence. In the typical patient, identification of a lesion suspicious for malignancy provokes a sense of urgency to begin treatment. Yet Powell et al.’s study of VA patients reported that staff at 44 of the 133 VA sites (33.1%) identified that patient barriers (patient noncompliance, delay in reporting symptoms and physical distance from the site) as contributors to evaluation delays. The delayed patient response to potentially life-threatening illness described at one third of VA medical centers indicates that at least some VA patients respond less than urgently to the suspicion of malignancy.

Before selecting the most appropriate therapeutic course, patients with suspicious pulmonary nodules must undergo a series of complex diagnostic evaluations designed to determine the operability and clinical staging of the lesion. These include additional imaging studies such as CT scans, positron emission tomography-CT scans and occasionally nuclear medicine scans, fiberoptic bronchoscopy with bronchoscopic or transthoracic tissue sampling, physiologic testing of pulmonary function, and overall health assessment.

The authors seem perplexed that patients presenting with advanced stage bronchogenic carcinoma were diagnosed and treated more rapidly than stage I patients. In a resource-constrained system like the VA which focuses on health maintenance, it is understandable that patients presenting with symptoms such as hemoptysis, dyspnea or pain, or symptomatic distant metastases would be prioritized to more expeditious evaluations than those with asymptomatic pulmonary nodules. In addition, the diagnostic evaluation for stage IIIIB and IV disease patients is shortened, because they need only a diagnosis of malignancy, before being referred for palliative interventions.

Despite recent increases in congressional support to $90.0B in FY 08, the VA remains chronically underfunded. The huge influx of veterans from the wars in Iraq and Afghanistan has strained resources. Therefore, it comes as no surprise that 40.6% of reporting VA medical centers identified problems with resource adequacy, such as no access or insufficient access to advanced imaging procedures, lack of specialty services, and inadequate staffing.

The VA and the authors of this study should be commended both for their interest in assessing the timeliness of veterans’ access to definitive lung cancer treatment and for their willingness to publicize this information. The study authors noted that leaders and clinicians at “over two thirds of participating facilities expressed concerns that arose as a result of their chart reviews and nearly as many indicated that they were considering specific changes or improvement activities.” Combining these efforts with possible system-wide changes implemented by the VA Central Office has the potential to accelerate diagnostic evaluations for veterans with a variety of suspected malignancies. For an organization with over 263,000 employees which provides care for 5.5 million veterans, the VA has proven itself remarkably nimble at implementing change. After collection and review of additional data from this and other studies, I suspect the VA will prove itself capable of shortening evaluation intervals for suspected cancer patients.

In the interim, the VA, and indeed U.S. and global health systems, will continue to grapple with the epidemic of bronchogenic carcinoma, a disease which represents a classic failure of disease prevention. One can hope that continued adherence to the smoking cessation CPG, the third of 27 CPGs developed by the VA, will gradually reduce the number of veterans needing treatment for this typically lethal malignancy.

REFERENCES