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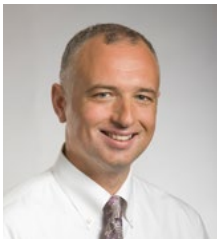
Pathways in Cancer

Clinical insight and analysis in advanced cancer care

Best Practices for Lung Cancer Screening

Costanzo Di Perna, MD, MBA



The American Cancer Society has thoroughly reviewed the subject of lung cancer screening and issued guidelines aimed at doctors and other health care providers. Patients should be asked about their smoking history. Patients who meet ALL of the following criteria may be candidates for lung cancer screening:

- 50 to 75 years old
- In fairly good health
- Have at least a 30-pack-year smoking history
- Are either still smoking or have quit smoking within the last 15 years

Smoking cessation must be offered to patients being screened who are still smoking. These criteria were based on what was used in the NLST. Doctors should talk to these patients about the benefits, limitations, and potential harms of lung cancer screening. Screening should only be done at facilities that have the right type of CT scan and that have a great deal of experience in LDCT scans for lung cancer screening. The facility should also have a team of specialists that can provide the appropriate care and follow-up of patients with abnormal results on the scans.

Medicare requires that the screening doctor obtain consent from the patient. Patient data, review of systems, history and physical must all be submitted with the requisition for CT scanning in the Medicare database. Without persistent use of the Medicare database and adherence to the criteria above, the screening CT will not be funded.

Doctors truly need to work in sync, screen appropriately, and keep track of patient data. If doctors order the CT scans in haphazard fashion without appropriate follow-up, without database tracking, without smoking cessation attempts, and without Medicare cross-checking, the low-dose CT screening protocols will fail and will become a liability to physicians. On the other hand, if lung screening is performed correctly through an appropriate clinic with centralized and organized care methodologies, the patient will benefit and the screening efforts will be successfully supported by Medicare.

Lung cancer screening has already allowed surgeons to save the lives of many patients who may not have survived otherwise. My own practice has been revolutionized. I urge all physicians to seriously consider lung screening for appropriate patients and to call Dignity Health Cancer Institute with any questions they may have.

Mercy San Juan Medical Center Designated Community Hospital Center of Excellence

In November 2015, the Bonnie J. Addario Lung Cancer Foundation (ALCF) awarded Mercy San Juan Medical Center the official designation as a Community Hospital Center of Excellence. The ALCF Centers of Excellence award recognizes community hospitals for their individualized care and treatment of lung cancer patients. About 80% of all cancer patients today are treated at community hospitals.

As a Community Hospital Center of Excellence, Mercy San Juan Medical Center has implemented the standard of care required in the ALCF Centers of Excellence program. The program's hallmark standard ensures all patients receive genomic testing to monitor for specific disease states and to determine potential options for precision medicine and targeted treatment. Additional standards include an individualized approach to care, patient access to new diagnostic tools and therapeutic techniques, and an emphasis on early detection and patient follow-up.

The goal of the screening program is to identify individuals who might be at an increased risk for lung cancer. Participants must:

- Be between 50-75 years old to meet criteria
- Be a current smoker or former smoker

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Dignity Health
Cancer Institute of Greater Sacramento

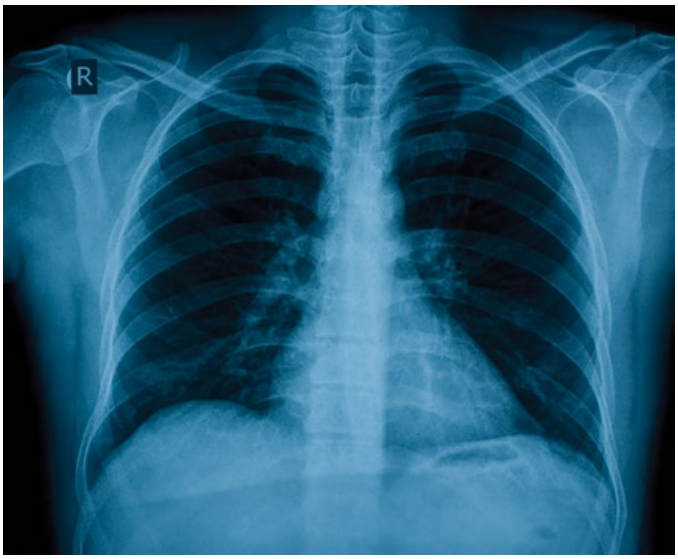
Lung Cancer Screening an Effective (and Cost-effective) Solution

Samer Shihabi, MD

The last decade has witnessed the development of remarkable advances in the fields of molecular and immuno-oncology leading to the approval of several targeted therapies and immune check point inhibitors for lung cancer. This has revolutionized the treatment of many patients with this disease, resulting in prolongation of survival with lesser side effects compared to traditional chemotherapy. Yet, up to 65% of lung cancer patients present with advanced-stage disease where treatments are often costly, toxic, and mostly palliative in nature.

The advent of low-dose, spiral chest computed tomography (LDCT) is promising to alter these figures and allow more patients to be diagnosed with early-stage disease for which surgery and/or radiation therapy may be curative.

In nonrandomized studies conducted in the last 15 years, up to 85% of the lung cancers detected by screening were stage I and therefore amenable to curative surgical resection. Subsequently, the National Lung Screening Trial (NLST) compared LDCT with chest X-ray and demonstrated a 20% decrease in lung cancer mortality and a 6% reduction in all-cause mortality in favor of LDCT. Furthermore, the NLST demonstrated that the number needed to screen (NNS) to prevent one lung cancer-related death was 320, which compares favorably with other screening modalities. Several publications suggest that up to 12,000 lung cancer deaths could be averted annually if CT screening were applied to a population identified by the NLST criteria.



With economic modeling, it has been demonstrated that the cost per life-year saved would be less than $19,000, or a cost of approximately $1 per Medicare beneficiary per month, which is more cost-effective than other current screening protocols.

While medical oncologists have traditionally been involved in the treatment of patients with advanced malignancies, mainly to palliate symptoms and prolong life, they have the potential to be a large and important group of advocates for cancer prevention measures. Furthermore, a successful lung cancer screening program depends on the expertise of a comprehensive multidisciplinary team of specialists, of which medical oncologists are essential in identifying patients who may benefit from the addition of various chemotherapeutics and targeted therapies. In addition, medical oncologists provide long-term counseling and surveillance which ensure each patient receives an individualized treatment plan and successful survivorship recommendations.

Since lung cancer screening is never a substitute for smoking cessation, a successful screening program must be integrated with a smoking cessation program. Tobacco smoking remains the most significant modifiable risk factor in the development of lung cancer, and medical oncologists have an exceptional opportunity to implement smoking cessation techniques in conjunction with lung cancer screening to further reduce the burden of this disease and many other smoking-related illnesses.

Progress in lung cancer has benefited tremendously from scientific and technologic advances in diagnosis and therapy. However, the elusive goal of reduced mortality rates can only be achieved through continued interdisciplinary efforts in the field of cancer prevention and early detection.

The Impact of Lung Cancer Screening on Radiation Oncology

John Stevenson, MD

Low-dose CT imaging of the chest is now proven to be an effective tool in the detection and management of lung cancer in appropriately selected patients. While the screening criteria will continue to evolve, there is no doubt that the impact on lung cancer survival statistics will be significant. The early detection of disease will benefit patients receiving therapy, in particular any local treatment for the primary tumor. The two main primary local therapies for treatment of lung cancer are currently surgery and radiation therapy. In this article, we'll focus on the benefits afforded in the delivery of primary radiation treatment.

Radiation therapy, being a local therapy, exerts tumoricidal effects and side effects limited to the field of treatment. Historically, radiation therapy as the primary treatment was limited to patients who are medically inoperable, yet harbored lung cancers which were otherwise resectable. Reasons for medical inoperability would include serious comorbidities, severe COPD, prior lung surgery with limited residual lung capacity, inability to receive anesthesia, etc. In this cohort of patients, primary radiation therapy would historically result in a long-term local control of cancer of approximately 30–40%, with a three-year survival of approximately 20–30%. The recent development of stereotactic body radiation therapy (SBRT), which delivers ablative treatment with a biologic equivalent dose roughly two to three times greater than conventional radiation therapy, has resulted in significant improvements in outcome. As an example, radiation therapy oncology group study 0236 demonstrated a long-term local control of 97%, with a doubling of the historic overall survival to 56%. A recent prospective trial from Japan, JCOG 0403, utilized primary SBRT for treatment of both operable and medically inoperable early-stage non-small cell lung cancer patients. The three-year survival rate for the operable patients was 76.5%, comparable to that achieved with primary surgical resection. Local control was approximately 90%, and the majority of patients failing did so with distant recurrence.

The effectiveness of any local therapy depends on early identification and delivery of treatment prior to spread of disease outside of the target volume. This holds true for either primary surgical resection or primary radiation therapy. As patients are identified with more extensive primary tumors, the likelihood of distant failure increases substantially. With modern radiation therapy techniques, toxicity is low with most patients reporting no significant long-term change in respiratory capacity. Treatment is completely noninvasive and is delivered over one to two weeks. Lung cancer screening will identify patients with early-stage disease, which will be amenable to delivery of radiation treatment with a high probability of success. In general, a smaller target volume will result in fewer side effects, improved local control of disease, and improved survival.

Hospital Center of Excellence: Continued from page 1

- Have quit less than 15 years ago, if a former smoker
- Have a 30-pack-year smoking history

"We offer each of our patients an individualized approach to their cancer treatment, with the goal of providing the right treatment for the right person at the right time," said Costanzo Di Perna, MD, MBA, Medical Director of the Dignity Health Cancer Institute. "We are honored to be recognized with this Center of Excellence designation. We are dedicated to advancing precision medicine and targeted treatment options for lung cancer patients and their families."

Mercy San Juan Medical Center's implementation of the ALCF Centers of Excellence program benefits from lessons learned in a 2013 pilot program at El Camino Hospital in Mountain View, California. Preliminary metrics from the pilot program highlight that patient outcomes improved dramatically just in the first year.

- 100% of pilot program patients received molecular testing
- The time from diagnosis to treatment improved 77% from a national average of 45 days down to 10 days
- 62% of program patients underwent tumor board review
- 100% patient satisfaction
- 26% of treated patients were diagnosed at stage 2B or lower

"The ALCF is focused on initiatives that empower patients to take a seat at the table wherever discussions are being made about their care," said Dr. Di Perna. "We are committed to improving the standard of care and believe genomic testing and targeted therapy is the future of lung cancer treatment and the pathway to increasing the survival rate for all lung cancer patients."

Dignity Health
Cancer Institute of Greater Sacramento

6501 Coyle Avenue
Carmichael, CA 95608

CANCER CONFERENCES

For each of our Cancer Conferences, physicians are eligible for 1 CME credit.

To present a case at an upcoming Cancer Conference, please email, fax, or call contacts noted below. To present a case, please provide:

- **Patient's name**
- **Date of birth and/or medical record number**
- **Disease site**
- **Diagnosis**
- **Where path and imaging can be found**

Hospital Cancer Conferences

Mercy General Hospital
Wednesdays at 12:30 p.m.
Location: EW Auditorium
Contact: Jennifer Gutierrez
jennifer.gutierrez2@dignityhealth.org
916.736.8074 (phone)
916.736.8078 (fax)

Mercy San Juan Medical Center
Thursdays at 12:30 p.m.
Location: Conference Room 2
Contact: Wendy Ringer
wendy.ringer@dignityhealth.org
916.962.8799 (phone)
916.536.3044 (fax)

Methodist Hospital of Sacramento
3rd Friday of each month at Noon
Location: Bistro Conference Room
Contact: Lisa Dix
ldix@uscmc.com
916.683.9616 (phone)
916.688.1320 (fax)

Woodland Healthcare
Tuesdays at 12:15 p.m.
Location: DCR 5
Contact: Michelle Ing, PA
michelle.ing@dignityhealth.org
530.662.3961 (phone)

TUMOR-SPECIFIC CANCER CONFERENCES

Breast Cancer Conference
3rd Tuesday of each month at 12:30 p.m.
Location: Mercy Cancer Center
3301 C Street, Suite 550
Large Conference Room
Contact: Jennifer Gutierrez
jennifer.gutierrez2@dignityhealth.org
916.736.8074 (phone)
916.736.8078 (fax)

GU Cancer Conference
4th Tuesday of each month at 7:30 a.m.
Location: Mercy San Juan, CC3
Contact: Mark Cruz
mark.cruz@dignityhealth.org
916.537.5069 (phone)
916.536.3044 (fax)

Cases may be brought directly to the conference. Pathology and imaging will not be routinely ordered unless there is a question regarding the results.

Neuro-Oncology Cancer Conference
3rd Thursday of each month at 7:30 a.m.
Location: Mercy Cancer Center
3301 C Street, Suite 550
Large Conference Room
Contact: Mark Cruz
mark.cruz@dignityhealth.org
916.537.5069 (phone)
916.536.3044 (fax)

Thoracic Cancer Conference
Wednesdays at 4 p.m.
Location: Mercy San Juan, CC4
Contact: Kay Habal-Nagtalon
kay.habal-nagtalon@dignityhealth.org
916.962.8798 (phone)
916.536.3044 (fax)

Cases may also be brought directly to this conference.