More Evidence Smokers Have Higher Risk of Secondary Primary Lung Cancer

BY SARAH DIGIULIO

SAN FRANCISCO—Survivors of non-small-cell lung cancer who never smoked or who were former smokers at the time of diagnosis were found to have a lower risk of developing secondary primary lung cancer compared with patients who were current smokers when diagnosed, according to new data presented here at the American Society for Radiation Oncology Annual Meeting (***Abstract 170***).

Previous research has linked tobacco use to an increased risk of lung cancer in such patients, but this is the first large study using a rigorous statistical analysis accounting for other variables that may affect outcomes, the researchers noted.

Ed Susman

JOHN MICHAEL BOYLE, MD: "This study adds more evidence that smoking has subsequent implications—and the results provide a powerful tool as we counsel our patients."

"We showed for the first time that cumulative smoking history was the primary driver of secondary lung cancer among survivors of non-small-cell lung cancer," the study's lead author, John Michael Boyle, MD, a radiation oncology resident at Duke Cancer Institute, said during a news briefing at the meeting. "And interestingly we found that never-smokers have a very low risk of second primary lung cancer—and we also found that smoking history exposes patients with lung cancer to a greater risk of death."

Study Details

The study included 1,484 patients (372 current smokers, 1,014 former smokers, and 98 never smokers) who had undergone surgery—with or without chemotherapy or radiation therapy—for stages I-IIIA non-small-cell lung cancer at Duke University Medical Center between 1995 and 2008. The data showed that five years after initial diagnosis, current smokers were more likely to develop a second primary lung cancer than the other patients in the study.

The five-year incidence of a second primary lung cancer was: 13 percent for current smokers; seven percent for former smokers; and zero percent for patients who had never smoked.

In this study, second primary lung cancer was defined as a new lung cancer unrelated to the initial tumor based on histology and location in the lung.

Other findings from the data were:

- In the 41-month follow up period, one patient who had never smoked

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Quality Care Symposium: Initial Takeaways

BY LOLA BUTCHER

BOSTON—Several initial takeaways from the Quality Care Symposium, held here last month:

• **Frustration with electronic health record systems is increasing:** One of the major drivers for EHR technology is that, at the theoretical level, it should improve the quality of patient care. Representatives from four major EHR vendors shared their perspective of how this works, but I got the sense that the audience wasn't with them. Session Chair Douglas Blayney, MD, asked why smartphones can be so easy to use when EHRs are so clunky. Barry Brooks, MD, said some EHRs are a patient-safety hazard. The vendors said they are working it, but nobody pushed back against the criticisms.

• **Value (quality divided by cost) is not always intuitive.** Although academic medical centers are considered the most expensive—and best quality—health care providers, Christine Marie Veenstra, MD, Clinical Lecturer in Hematology & Oncology at the University of Michigan Health System, presented results from a study that found that the cost of care for Stage II and Stage III colon cancer patients was not more expensive at an academic hospital than a community hospital (***Abstract 6***). And, by the way, overall survival time was the same, regardless of academic or community hospital.

• **There are so many standards—and yet not enough**. The importance of standardization in cancer care has been a drumbeat in recent years, but Monika Krzyzanowska, MD, MPH, of Princess Margaret Cancer Centre, made an excellent presentation on the lack of standards for oral therapies that are sent home with patients. Who knows if the medicines are taken as directed?

• **Big data to the rescue?** After seeing presentations about PCORnet, the Integrated Cancer Information and Surveillance System, the National Cancer Institute's Surveillance, Epidemiology and End Results program, the Commission on Cancer's National Cancer Database, and CancerLinQ, I was so dizzy I can't remember exactly what any of them do. However, the excitement by each of the presenters made a big impression on me; each believes that data gathered, analyzed, and shared in new ways will lead to cancer treatment breakthroughs heretofore unimaginable.

SMOKING

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developed a second primary lung cancer seven years after surgery for the first cancer;

• When restricting the analysis to continuing and former smokers with pack-years as a continuous variable, the risk of second primary lung cancer increased with the number of years of tobacco exposure—an eight percent increased risk per 10 pack-years;

> "We showed for the first time that cumulative smoking history was the primary driver of secondary lung cancer among survivors of non-small-cell lung cancer."

• For all patients there was no difference in local control or distant metastases based on smoking status; and

• All former smokers, regardless of when they quit, as well as never smokers, had increased survival compared with current smokers.

"Smoking-cessation efforts are an important part of care for our lung cancer patients," Boyle noted. "This study adds more evidence that smoking has subsequent implications—and the results provide a powerful tool as we counsel our patients."

In an email after the meeting, he said that going ahead it will also be important to understand how smoking behavior following a lung cancer diagnosis affects outcomes—including the incidence of second cancers and overall survival. "The challenge is that you would likely need a very large study population. And while smoking history is often detailed at initial diagnosis and consultation, history—i.e., smoking status, packs per day, etc.—is not often included in follow-up documentation following treatment."

BENJAMIN MOVSAS, MD, FASTRO: "This study is one of the largest analyses of this particular issue. Radiation oncologists need to be fully aware of these important findings in order to counsel and refer patients for smoking cessation and properly follow their patients."

Implications for Radiation Oncologists

Also commenting via email after the meeting, the session's moderator, Benjamin Movsas, MD, FASTRO, Chair of the Radiation Oncology Department at Henry Ford Health System, said: "This is one of the largest analyses of this particular issue. Radiation oncologists are treating more and more patients with lung cancer, particularly early-stage lung cancers, with stereotactic body radiation therapy, which has led to promising long-term tumor control and survival rates. Radiation oncologists thus need to be fully aware of these important findings in order to counsel and refer patients for smoking cessation and properly follow their patients in this regard."

Movsas, who was also Vice-Chair of the Annual Meeting Scientific Committee, said that next step of this research will be determining the most effective strategies to help these patients quit smoking—"which can be very challenging."