

Celecoxib May Prevent Lung Cancer in Former Smokers

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Agent lowered key biomarkers in lung cancer development.
Study confirms earlier research in *Cancer Prevention Research*.
Experts estimate former U.S. smoker population at 45 million.

PHILADELPHIA - Celecoxib may emerge as a potent chemopreventive agent for lung cancer, according to a recent study in *Cancer Prevention Research*, a journal of the American Association for Cancer Research.

Researchers tested celecoxib, a COX-2 inhibitor, among patients who were former smokers and found a significant benefit in bronchial health as measured by the Ki-67 labeling index, a marker of cellular proliferation or growth, as well as a number of other biomarkers. The findings follow a previous report published in *Cancer Prevention Research* that showed a similar effect on Ki-67 among former smokers and current smokers (Kim *et al.*, Feb. 2010).

"Taken together, these findings strongly suggest that celecoxib can be used as a chemopreventive agent in these high-risk groups," said Jenny Mao, M.D., a professor of medicine at the University of New Mexico and section chief of pulmonary and critical care medicine at the New Mexico VA Health System.

Mao cautioned, however, that both the current study, where she was the lead researcher, and the Feb. 2010 study were phase II trials, and that large phase III trials are still needed to confirm the findings.

J. Jack Lee, Ph.D., a professor of biostatistics at The University of Texas M. D. Anderson Cancer Center and the statistical editor of *Cancer Prevention Research*, estimates that there are currently 45 million former smokers and 45 million current smokers in the United States alone.

"The oncology community does not have a good treatment for lung cancer. Unless it is caught in the earliest stages, the five-year survival is only about 15 percent," said Lee. "The best way is to intercept at the earliest stages and try to reverse the processes that can lead to cancer. These studies suggest celecoxib may be a tool to do that."

For the current study, Mao and colleagues enrolled 137 patients and randomly assigned them to 400 mg celecoxib twice daily or a placebo. Patients had to be at least 45 years old, and had to have stopped smoking for at least a year.

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Researchers conducted bronchoscopies at baseline and six months to measure changes in the Ki-67 labeling index. Treatment with celecoxib reduced this index by 34 percent compared to a 3.8 percent increase with the placebo group. Decreases in this index were also linked with a reduction in lung nodules, a potential precursor to cancer.

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