Secondhand smoke remains strong cancer risk in smokers' children

Environmental smoke also increased the risk of cancer among ex-smokers who had not taken a puff in more than a decade.

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Children of smokers have an increased risk of lung cancer as adults, according to the results of a prospective, wide-ranging study.

Ex-smokers, even those who have quit for more than 10 years, are also at a greater risk of respiratory disease if exposed to second-hand smoke at work.

These results from an international study confirm that "environmental tobacco smoke is a risk factor for lung cancer and other respiratory diseases, particularly in ex-smokers," said **Paolo Vineis, MD, MPH,** from the environmental epidemiology department at the Imperial College in London and lead researcher of the study.

Ask your patients

"We've been telling doctors for years to ask their patients if they smoke," said **Norman H. Edelman, MD,** the vice president for health sciences and a professor of medicine at the State University of New York at Stony Brook.

"Now it seems we should be asking them about their exposure to second-hand smoke," Edelman, a medical consultant for the American Lung Association, told HEM/ONC TODAY.

In a large prospective study, Vineis and his colleagues studied the records of 303,020 people from 10 participating European countries between 1993 and 1998 who had never smoked or who had stopped smoking for at least 10 years.

Environmental exposure

From this group, 123,479 provided information on their exposure to second-hand, or environmental, tobacco smoke. Smoking status was supported and documented by cotinine levels, Vineis said.

Researchers matched three control patients for every patient from the study group to assess exposure and analyze questionnaire data, as well as two controls for each study case for laboratory analyses.

Controls were also matched for sex, age ± 5 years, smoking status, country of recruitment, and time elapsed since recruitment.

The median follow-up period was seven years. After follow-up, 97 people had newly diagnosed lung cancer, 20 had upper respiratory cancers, and 14 died from chronic obstructive pulmonary disease or emphysema.

Frequent exposure to environmental tobacco smoke during childhood was associated with lung cancer in adulthood, with a hazard ratio of 3.63.

Cohort exposure to environmental tobacco smoke was associated with a 1.3-fold increase in the risk of all respiratory disease and a 1.34-fold increase for lung cancer, Vineis said.

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> — Norman H. Edelman, MD

Odds ratios were consistently higher among former smokers than in those who had never smoked. The association was limited to work-related exposure, according to the study.

One possible reason for the increased risk among ex-smokers is that they have "already existing mutations" that are more susceptible to the relatively low-level exposure of environmental tobacco smoke, Vineis said.

"Of course, the reliability of information on exposure to environmental tobacco smoke in childhood can be questioned," he said, "although most people should be able to recall whether their parents smoked. The uptake of carcinogens in exposed children is widespread and quantitatively important."

Ask questions

What's also interesting, Edelman said of the study's results, is the major effect on ex-smokers. "It confirms that total exposure over time counts as a factor in contracting future cancers," he said. A woman may stop smoking, for example, but if her husband does not, "then she's still being exposed," he said.

"The most effective tool is the doctor's advice," Edelman said. "When a doctor asks 'Are you smoking and, if you are, do you need help to stop smoking?' patients pay attention."

The report garnered worldwide news attention when Cuba, where cigar smoking and production are a major part of its national fabric, announced a smoking ban in some public places, just days after Vineis' study was published online. **H/Ot**

For more information:

Vineis P, Airoldi L, Veglia P, et al. Environmental tobacco smoke and risk of respiratory cancer and chronic obstructive pulmonary disease in former smokers and never smokers in the EPIC prospective study. *BMJ.* 2005;330:277-280.