CORRESPONDENCE

Re: Cigar Smoking in Men and Risk of Death From Tobacco-Related Cancers

Shapiro et al. (1) analyzed the relationship between cigar smoking in men and mortality from various cancers over 12 years of follow-up of the American Cancer Society’s Cancer Prevention Study II cohort. Men who ever smoked cigarettes or pipes were excluded from the analysis. The investigators found that cigar smoking, as compared with never smoking, increased the risk of cancers of the lung, oral cavity/pharynx, larynx, and esophagus. The size of this study also allowed them to analyze the risk for lung cancer in cigar users who did not inhale the smoke. Importantly, they found a significantly elevated relative risk for lung cancer of 3.3 (95% confidence interval [CI] = 2.3–4.7) in cigar smokers in this group compared with never smokers, although this risk was less than that in cigar smokers who did inhale. These results are consistent with those of a recent European case–control study of pure smokers of cigars or cigarillos (2), who were found to have a relative risk of lung cancer of 5.2 (95% CI = 2.7–10.0) among noninhaling cigar smokers compared with non-smokers.

Although Shapiro et al. (1) did not comment on the role of specific carcinogens, these results strongly implicate the tobacco-specific nitrosamine 4-(methyl-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK) as the cause of lung cancer in these noninhaling cigar smokers. NNK is a potent pulmonary carcinogen in laboratory animals that elicits lung tumors in mice, rats, and hamsters independent of the route of administration (3,4). Lung tumors have been induced in laboratory animals by giving NNK in the drinking water, by swabbing it onto the surfaces of the oral cavity, by intragastric gavage, by subcutaneous or intraperitoneal injection, by skin painting, and by instillation in the bladder (3,4). In contrast, benzo[a]pyrene, which may play an important role in lung cancer induction in smokers who inhale, is not generally a systemically active lung carcinogen in rodents (5). For example, administration of benzo[a]pyrene to B6C3F1 mice in the diet results mainly in tumors of the forestomach, esophagus, and tongue (6). NNK is the only potent, systemically acting lung carcinogen in tobacco smoke; its concentration in cigars has been reported to be 1200 ng/cigar (7). These results underscore the dangers of cigar smoking as a source of tobacco-specific carcinogens and demonstrate the importance of NNK as a human lung carcinogen.

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REFERENCES


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