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To: SA Worldwide Date: March 4, 1997
From: R. A. Carchman *PAC/zm*
Subject: 1997 Cancer/Swiss Study

I am sending out for your review and comments my preliminary thoughts on a recently published paper "Lung Carcinoma Trends by Histologic Type in Vaud and Neuchatel, Switzerland, 1974-1994." Cancer 79(5): 906-914, 1997 by F. Levi, et al.

In this paper, the authors utilized cancer registries from Vaud and Neuchatel Switzerland to gather data from 1974-1994 on lung cancer incidence by histologic type, age, and gender. The authors conclude that "adenocarcinoma is sustaining a new lung carcinoma epidemic, chiefly attributable to the switch to low tar, filtered cigarettes." Table 1 of this publication represents the ~20-year period of observation for males and females by number and percent by histologic type of lung tumor. Table 2 presents the same data by quinquennium and age standardized by gender.

Since the focus of the authors is on adenocarcinoma, it is important to note that in the "Materials and Methods" section they have combined all adenocarcinomas including bronchioloalveolar carcinoma. I raise this for the following reasons:

In a recent review (not cited in the cancer paper) by Barkley and Green (J. Clin. Oncol. 14: 2377-2386, 1996) and what is considered to be a landmark study by Auerbach and Garfinkel (also not cited, Cancer 68: 1973-1977, 1991) (same journal as the Swiss study) relevant points are raised concerning changing patterns of cancer with emphasis on adenocarcinoma and bronchioloalveolar carcinoma (BAC). Both of the previous reports indicate that BAC (i.e., peripheral) is increasing in young nonsmoking females and that bronchiogenic (i.e., central) cancers in nonsmokers and former smokers showed a decreased incidence. Furthermore these authors (Barkley and Green) state "BAC appears to be responsible for most, if not all the increase in adenocarcinoma." Auerbach and Garfinkel state that "adenocarcinomas are associated less directly with tobacco use or any other carcinogens." In addition, the similar rise reported in males and females by Levi, et al. are to be expected based on BAC alone and are inconsistent with smoking as a cause (see Barkley and Green review). Increased risk for BAC development is seen in the following occupations: construction, motor freight, wood, paper mills, and sugar cane and farmers. Fibrosis or sclerosis appears to be common predisposing features associated with this adenocarcinoma. Viral etiology has also been postulated. Pulmonary infections (e.g. TB) may lead to BAC and reports of drug induced damage predisposing to BAC have also been reported (see Barkley and Green review).

Table 2 indicates that small cell carcinoma (i.e., central) in females has increased to the same extent as adenocarcinoma. Though the authors do not discuss this point, this observation is also inconsistent with their hypothesis.

Finally, the Levi et al. paper utilized a log-linear Poisson model with arbitrary constraints on the parameters in order to separate the effects of age, period of diagnosis and birth cohort on incidence rates. The authors indicate that "given the arbitrariness of the constraints imposed those models should be interpreted with caution."

Well, these are some of my initial comments. I look forward to hearing your comments.

cc: W. Reininghaus
C. Ellis
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