Lung Cancer
An HIV-related Neoplasm or a Coincidental Finding?

Index AIDS-defining neoplasms since 1985 include Kaposi’s sarcoma, primary central nervous system lymphoma, and non-Hodgkin’s lymphoma. The incidence of the latter two neoplasms is sharply on the rise. All three of these AIDS-defining neoplasms are characterized by higher-grade lesions, more advanced stage, and shorter survival when compared with similar tumors in patients not infected with human immunodeficiency virus (HIV). As we enter the second decade of the HIV epidemic, it is apparent that other solid tumors are seen in these patients as well. Basal cell carcinoma of the skin, squamous cell carcinoma of the anus, and condylomata acuminata are seen with increased incidence. Cervical intraepithelial neoplasia and squamous intraepithelial lesions are probably seen with increased incidence in HIV-infected women. Cervical carcinoma has also been reported. Hodgkin’s disease is well described, especially in HIV-seropositive drug users in Europe. While the incidence of Hodgkin’s disease is not necessarily increased in HIV-infected patients, the clinical course is much more aggressive.

A variety of other solid tumors have also been reported in HIV-infected patients; these include multiple myeloma and breast, colon, testicular, pancreas, brain, and lung carcinomas. Sridhar and colleagues report in this issue of Chest (see page 1704) their findings from a retrospective case-control study of 19 HIV-seropositive and 1,335 HIV-indeterminate lung cancer patients. This is the largest series of HIV-infected lung cancer patients reported to date. Their data support the conclusions that HIV-infected lung cancer patients are predominantly male, have significant smoking histories (median, 60 pack-years), are younger (median, 40 vs 61 years), have similar stage and pathology of disease, and have shorter median survival (3 vs 10 months) compared with non-HIV infected patients with lung cancer. There are several important clinical and biological observations that are hidden in their data.

Approximately 70 percent of pathologically staged lung cancer patients with stage I disease are cured. In the 3 patients reported by Sridhar and colleagues with stage I disease, postoperative survival was 1+, 3, and 5 months. Unfortunately, in two of these patients and the remainder of the patients in the series, the immediate cause of death is not identified. In future studies, it will be useful clinical information on which to make survival comparisons to note whether the predominant cause of death was attributable to lung cancer, progressive HIV-infection/AIDS, or both.

Up to 25 percent of all lung cancer patients will have small cell carcinoma. While there was no significant difference in the histopathology of lung cancer in HIV-seropositive and HIV-indeterminate patients, the paucity of cases of small cell cancer might argue that the biological features of HIV-associated lung cancer are different. Further follow-up of additional patients is clearly needed to sort this out.

Nine of the 19 HIV-seropositive patients had no HIV-related opportunistic infections and were essentially asymptomatic (CDC group II or III disease). In this group of patients, the median CD4 count was 301/mm³ (range, 84 to 628/mm³). This observation is very interesting and might suggest that pronounced immunodeficiency and symptomatic HIV infection may not be significant cofactors in the pathogenesis of lung carcinoma in these patients.

The authors speculate that cigarette smoking is an important risk behavior and carcinogen in the development of lung cancer in HIV-infected patients. Additional pathogenetic mechanisms were briefly discussed, but a potentially major one is omitted. Recent reports have suggested that patients receiving prolonged zidovudine therapy with progressive and severe underlying immunosuppression with CD4 lymphocyte counts less than 50/mm³ may have an increased probability of developing lymphoma. Only three patients (16 percent) in this series had CD4 counts less than 50/mm³. It is worrisome that lung cancer may appear earlier in the course of HIV infection than other more commonly encountered neoplasms.

In summary, as the HIV epidemic advances and patients live longer as a result of improvements in antiretroviral therapy and in recognition, management, and prophylaxis of opportunistic infections, we might anticipate seeing more solid tumors other than AIDS-defining neoplasms in our patients. For primary practitioners and chest physicians taking care of HIV-infected patients, lung carcinoma must now be in the differential diagnosis of an abnormal chest x-ray film, especially a solitary mass lesion. For the clinical investigator, it will be important to track the epidemiologic and biologic features of these solid tumors and the underlying HIV infection itself to further define the natural history and pathogenesis of these
neoplasms.

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REFERENCES


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All of us who practice medicine and surgery today grew up reaping the benefits of the technology explosion. Now more than at any other time in history, technologic advances are part of our everyday lives. We wake up in the morning to electronic clocks. We can have our coffee automatically brewed for us. We can shower in water adjusted to the exact temperature we wish. We can have a hot meal prepared in seconds in our microwave and watch the latest news from all corners of the globe, literally as it is happening. We can use our home computers to communicate with our office or hospital. We can have our home "powered" down when we leave and "powered" up before we return. We can even be paged when we are out of town and remain in constant contact through our cellular telephones. It seems that almost everyday we read or see reports of new personal technology which will soon effect our lives.

The practice of medicine itself also enjoys advances from technology, but how do we find out about these advances? Most often information is disseminated periodically at meetings or by word of mouth. Sometimes the first we hear of some new technologic breakthrough or emerging technology may be through the evening news on television. These sorts of reports are often premature and provide little detail. Sometimes they are even promulgated by industry with a heavy bias in favor of a given technology. However, publication of peer reviewed trials in the literature may not be timely enough to influence our practice.

One broad area heavily effected by technology is the emergent discipline of minimal access procedures. Such procedures cross all disciplines. In fact, a new technologic advance in our field may be ideally suited to another specialty, but since communication lines are so narrow, the information may not be disseminated appropriately. Chest represents a truly multidisciplinary organization and would be ideal as a medium to promulgate rapidly new concepts, new technology, new techniques and reports of series or complications. This issue includes the first contribution by Melvin, Krosna and McLaughlin (see page 0000) in a new department created to cover such technology, the Department of Minimally Invasive Techniques. The reports in this department are designed to feature the newer technologies which are allowing the development of the modern era of minimal body invasion. Contributions to this department will be reviewed swiftly in order to keep reports timely. It is hoped that this will become a forum for exchange of new ideas and a place to share questions, concerns and problems related to new technology.

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