CORRESPONDENCE

Factors Associated with the Development of Pneumocystis carinii Pneumonia

Sirs—In the July 1995 issue of Clinical Infectious Diseases [1], Dr. Lundgren and colleagues reported on their investigation of cofactors associated with the development of Pneumocystis carinii pneumonia (PCP) as an AIDS-defining illness in Europe. They noted a higher incidence of PCP in AIDS patients from northern regions, as did another recent study from Europe [2]; similar findings were reported by the American Multicenter AIDS Cohort Study (MACS) with regard to AIDS patients before the availability of prophylaxis from 1986 to 1988 [3]. In our analysis, cohorts of AIDS patients with the highest rates of PCP also had the highest incidence of upper respiratory tract infections [3].

The incidence of upper respiratory tract illnesses has been shown to be greater in colder climates and in winter months; this incidence is believed to increase because of person-to-person spread of the causal organisms [4]. To this end, we found a seasonal variation in the number of patients for whom PCP was the initial AIDS-defining illness; 61.4% of the patients for whom PCP was the initial AIDS-defining illness were diagnosed during the first 6 months of the year. The P value for the equal occurrence of PCP as an initial AIDS-defining illness from January to June compared with July to December was <.002. We believe that seasonal patterns of cases in which PCP was not the AIDS-defining illness during this same period would serve as a control for secular trends of AIDS in general. Only 53.1% of the AIDS patients in 1986–1988 who did not have PCP as the initial AIDS-defining illness were diagnosed in the American MACS from January to June. This seasonality of PCP is consistent either with infection due to P. carinii organisms during the colder months, with a short disease incubation, or with upper respiratory tract diseases predisposing to subsequent PCP.

These findings of geographical and seasonal associations of the risk of an AIDS patient developing PCP compared with AIDS patients who did not develop PCP in the MACS were confirmed with a recent analysis of AIDS cases that occurred during 1989–1993 [5]. Using a statistical model that included secular changes and seasonal effects, Bacchetti [6] also observed a statistically significant (i.e., P < .0001) seasonal pattern of P. carinii infection in AIDS patients from the United States that peaked in March (~2 months earlier than in our study). Several laboratory studies and case investigations in humans have shown that horizontal transmission of P. carinii does occur [7–11]. This finding is consistent with higher rates of PCP in AIDS patients from northern regions of Europe and the United States and perhaps with the seasonal patterns of PCP observed in North America.

Person-to-person spread or any seasonal effect on the risk of acquiring PCP has important clinical implications, particularly as 30% of the patients receiving prophylaxis for P. carinii may nevertheless still develop PCP [12]. Thus, it would be interesting to know if the patterns of seasonality of PCP seen in some studies from the United States are also found in Europe. To this end, I look forward to seeing an analysis of the data in the report by Lundgren et al. [1] so that the relationship of seasonality to the development of PCP in European AIDS patients can be addressed.

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References