Prognostic Classification for AIDS Patients in Brazil

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We studied the survival rates and the prognostic variables that corresponded to death during hospitalization in 312 AIDS CDC group IV patients in São Paulo. Discriminant analysis proved to be a good tool to perform the exploratory data analysis that guided the survival analysis groups. It selected nine variables that were important in the progress of the disease: age, time elapsed from the first manifestations of the disease, gender, infection by helminths, number of risk groups to which the patient belonged, number of infections by fungi, history of transfusion, presence of esophageal candidiasis, and infection by Cryptosporidium sp. Although some of these variables may be of limited importance in developed countries, and some variables that we expected to be important were not present in the final discriminant function, we believe these results may guide future research in prognosis of death in hospitalized AIDS patients.

INTRODUCTION

We studied 312 people who had acquired immunodeficiency syndrome (AIDS), and who were patients at the Hospital das Clínicas (HC) of the University of São Paulo. Our goals were to identify the variables with the most significant prognostic value for mortality, and to determine the survival curves for this set of patients. The sample is representative of Brazilian AIDS cases, and conclusions drawn from this study can help us to identify characteristics of the disease in Brazil.

Brazilian physicians and health-care planners often face situations in which scarce resources must be shared by many patients. The choice between expensive therapies or moderate supportive measures may be affected by knowledge of which variables are predictive of a longer survival time in AIDS patients, as well as by the characteristics of this survival curve. Other studies, however, have provided data about the profile of the disease only in other countries and in different clinical settings; such results may not generalize to the population seen by the Brazilian medical community.

AIDS has been a major concern in both developed and developing countries since the
first cases were reported in the early 1980s. By the end of 1990, official statistics from the World Health Organization (WHO) showed that, although the developed countries contributed a large percentage of the global account of AIDS cases, developing countries had the highest indexes of cases per inhabitant (49.1 and 38.6 cases per 100,000 population in Bermuda and French Guiana, respectively, as opposed to 12.6 and 4.8 cases per 100,000 population in the United States and France). In that year, Brazil ranked fourth for prevalence of the disease. Nonetheless, the Brazilian medical literature contains few reports on this problem. Prognostic factors have not been identified clearly, and little is known about the survival rates for AIDS patients in Brazil.

Official reported cases in Brazil rose from 1571 for all years before 1986 combined, to 12,405 cases in 1990. WHO specialists believe that 70 to 80% of cases are still not reported. Brazilian AIDS patients present a variety of clinical and epidemiological characteristics common in both developed and developing countries. AIDS is reported most heavily (80%) from São Paulo and Rio de Janeiro. Sexual transmission is the most frequent (52%) route of infection. Transmission among intravenous-drug users (IVDUs) accounted for 20.5% of cases in 1990. The male-to-female ratio in newly indexed cases is 9:1, and the average age is 32 years. These data characterize AIDS in Brazil as WHO Epidemiological Type I, the same type as is seen in other parts of the American continent and in Europe. Yet, certain characteristics of Brazilian AIDS resemble those of the disease as it occurs in Africa. Indeed, studies have shown that a small percentage of infected patients also test positive for HIV-2, which occurs most frequently in certain areas of West Africa.

None of the existing classification systems for AIDS have had a major effect on the Brazilian Health System up to now. The 1987 Centers for Disease Control (CDC) revised definition of AIDS has been used by the Brazilian medical community for reporting and diagnosis. Although clinical assumptions sometimes take the place of laboratory-test results, especially where expensive tests are concerned, this definition seems to be more appropriate than the WHO definition of AIDS for developing countries, which yielded good results in Zaire (a predictive diagnostic value of 74% percent, with a specificity of 90 percent and sensitivity of 59%): but has yet not been tested in Brazil.

Although most of the university hospitals in Brazil do use the CDC definition and some classification systems, many other institutions and practitioners still do not use them. The systems mentioned, therefore, may serve as guidelines for the development of a specific classification system tailored to the characteristics of the Brazilian health-care system. After these systems become widely used, further refinement will be desirable—perhaps including a classification system for hospitalized patients, such as that proposed by Turner and colleagues.

**MATERIAL AND METHODS**

We collected data from conventional medical records and from official reports made on AIDS CDC Group IV patients from the University Hospital and from two affiliated institutions in São Paulo. These reports were prepared by specialists of the Epidemiologic Surveillance Group of the hospital. Only patients with no previous history of antiviral treatment were selected. Both hospitalized patients and patients being treated in ambu-