



Carta ao Editor/Letter to Editor

Paracoccidioidomycosis: the dimension of the problem of a neglected disease

Paracoccidioidomycose: a dimensão do problema de uma doença negligenciada

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Dear Editor:

Paracoccidioidomycosis is a rural and suburban endemic disease commonly manifesting as a pneumopathy of a chronic course, often associated with mucosal and skin lesions, and eventually with extra-pulmonary and disseminated lesions. The disease caused by *Paracoccidioides brasiliensis* is considered to be the most prevalent systemic fungal infection in Brazil and is present in many Latin American countries. It has been recently included in the list of neglected diseases whose impact on public health has not been quantified due to the lack of available data². These diseases share some epidemiological, clinical and social characteristics that result in low visibility as a public health problem³. This is applicable to paracoccidioidomycosis and, with the exception of some measures in a few states, there are no governmental programs directed at this mycosis. About 100 years after the discovery of the disease caused by *P. brasiliensis*, there still is the need to implant an effective and permanent program for its prevention and diagnosis, and for the provision of antifungal agents and assistance to patients with complications and sequelae.

The fact that notification of cases of the disease is not obligatory is perhaps the main reason why paracoccidioidomycosis is neglected in the planning of public health in Brazil. However, asymptomatic infection with *P. brasiliensis* has been demonstrated in practically all Brazilian States by means of skin tests with paracoccidioidin. In some studies, the positivity of this test reached 60% among the individuals evaluated, being the number of individuals infected estimated at 10% of the Country population⁴. If this estimate is real, the prevalence of this fungal infection would be comparable to that of Chagas' disease in Latin America, exceeding that of other neglected diseases such as schistosomiasis and leishmaniasis².

Regarding paracoccidioidomycosis-disease, series with large numbers of cases receiving medical care at university hospitals have been reported over the last 20 years^{5,6}. A single institution located in the Northeast of the State of São Paulo, the University Hospital of the Faculty of Medicine of Ribeirão Preto, University of São Paulo, receives approximately 40 new cases every year. Presumably, hundreds or even thousands of new annual cases of paracoccidioidomycosis may be occurring in Brazil.

This fungal disease requires prolonged treatment, commonly lasting more than one year. Relapses, complications and anatomical and functional sequelae occur in at least 20% of patients, among them the feared pulmonary fibrosis and subsequent respiratory insufficiency. As observed in other neglected diseases, patients with paracoccidioidomycosis have associated conditions aggravating their health such as alcoholism, smoking, malnutrition, tuberculosis, neoplasias, and AIDS⁷. At specialized centers, the need for a long or permanent patients follow-up generates a load of medical care at least five times higher than the number of new annual cases. The overall cost of treatment increases due to the need for various specialized physicians and other health professionals, as well as hospitalization for complementary therapeutics.

Although some effective antifungal agents are available for the clinical cure of paracoccidioidomycosis, the disease still causes deaths. The lethality

is higher in old studies, corresponding to 21.6%, 16.2% and 27%, respectively, at the end of treatment with sulfonamide drugs, amphotericin B or in a population of patients hospitalized in São Paulo, SP⁸. In two more recent studies, lethality was 7.6% and 9.3%, respectively, the latter among children^{5,9}. Among 215 cases attended from 2000 to 2008 at the University Hospital of Ribeirão Preto, SP, lethality was close to 5% of cases. We may assume that all the cited rates are falsely elevated since they refer to university hospitals which receive a greater proportion of severe cases of the mycosis.

In Brazil, there are registries of the mortality caused by the major systemic fungal disease. The mortality rate of paracoccidioidomycosis per 1,000,000 inhabitants was 1.45 from 1980 to 1995 and 0.9-1.0 from 1996 to 2006^{10,11}. This mycosis was responsible for most of the total number of deaths attributed to the seven major systemic fungal diseases. The distribution of deaths due to paracoccidioidomycosis according to geographic region and according to age and sex^{10,11} corresponds to the epidemiological data for cases of the disease, suggesting that the mortality registries are correct.

The mean annual number of deaths due to paracoccidioidomycosis in Brazil reached 168 during the 1996-2006 period¹¹. Considering this mean value and a 5% mortality rate, it is possible to estimate the number of new annual cases of this mycosis in Brazil at 3,360. This number is close to the result obtained for the annual cases of the disease when an estimated incidence of 1/100,000 inhabitants/year is applied to the Brazilian population⁴. The expressive annual number of new patients, the large contingent of cases with a prolonged follow-up, plus the medical-social characteristics mentioned above reveal the wide dimension of paracoccidioidomycosis as a public health problem in Brazil and emphasize its condition of neglected disease.

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