

Underreporting deaths among HIV-infected/AIDS patients in Rio de Janeiro, Brazil

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Background: Underreporting of deaths due to HIV/AIDS is believed to be common in developing countries because of both low coverage and misclassification. In Brazil, where coverage of the mortality system approaches 100%, misclassification may play a major role, especially after the introduction of HAART, which has dramatically changed causes of death among HIV-infected individuals. In the present study we estimated the proportion of underreporting of deaths among HIV/AIDS patients and investigated associated factors.

Methods: Records of patients from two large cohorts of HIV-infected patients in Rio de Janeiro (RJ) were linked with the mortality system database, and ICD-10 causes of death were analyzed in respect to the presence/absence of HIV/AIDS codes (B20-B24). Demographic (age, place and year of death, gender, ethnicity, and schooling), and clinical (CD4 cell count, opportunistic diseases) variables were evaluated as associated factors.

Results: Out of 766 deceased patients, 216 (28.2%) did not have HIV/AIDS listed as the underlying cause of death. Of these, 46 (21.3%) and 44 (20.4%) of deaths were attributed to undefined and external causes, respectively. Other underlying causes of deaths in this group included respiratory (16.2%), infectious (13.9%), and cardiovascular (11.1%) diseases. Excluding external causes, which were assumed to be unrelated to HIV/AIDS, older age (OR=1.04; 95%CI=1.03-1.06; p<0.001 per year) and higher CD4 cell counts (OR=1.20; 95%CI=1.08-1.33; p<0.001 for 100 cell increase) were associated with HIV/AIDS not being listed. Applying age-specific underreporting rates to AIDS-related deaths in the city of RJ, death rates increased by 24.1% in 2000 to 25.2% in 2005.

Conclusions: Our findings indicate that HIV/AIDS associated mortality is underreported in Brazil's mortality system, particularly among older individuals and those less immune suppressed. As patients are surviving longer after the introduction of HAART, lack of recognition of temporal changes in causes of death may lead to even higher proportions of underreporting in the future.