



## Surveillance of mortality and causes of death among HIV-infected inpatients.

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### Abstract

We performed an observational, retrospective study in order to evaluate the mortality rate and causes of death among HIV-infected inpatients at a reference tertiary care Hospital from January 2012 to July 2014. High mortality rate (58.06%) was associated with low CD4+ lymphocytes count. Opportunistic infections were the most frequent cause of death even in the post-HAART era in patients hospitalized in a reference center. *Key words: mortality, HIV infection, surveillance.*

### Introduction

In the post-HAART era has been described significant decrease of mortality rate and a change of the classic pattern of causes of death associated to opportunistic infections to chronic degenerative disorders [1, 2, 3]. We evaluate the mortality rate and causes of death among HIV-infected inpatients at a reference Hospital.

#### Population and Methods

**Design:** observational, retrospective cohort.

**Setting:** a reference tertiary care university hospital (Hospital de Clínicas da UNICAMP).

**Population:** we performed the selection of patients from Electronic Medical Records and Nosocomial Surveillance Epidemiological Division databases. *Inclusion criteria:* age equal or higher than 18 years old with laboratorial diagnosis of HIV infection, inpatients during the period from January 2012 to July 2014. The researcher reviewed clinical medical records. **Statistical analysis:**  $\chi^2$  or Fisher's exact test were used to analyze association between categorical variables and the Kruskal-Wallis's test for continuous variables. The significant level for p was equal or inferior to 0.01.

### Results and Discussion

We included 62 patients, of these, 41 (63.3%) were admitted by opportunistic infections associated to HIV. Laboratorial diagnosis of HIV was done during the hospitalization in eight (12.9%) cases and after in one patient. Regarding HAART, 47(75.8%) were in therapy, however with low adherence. Death occurred in 36(58.06%) cases. Causes of death were opportunistic infections in 39.37% followed by others infectious diseases in 27.56%. Death was not associated with demographic, exposure category to HIV and duration of hospitalization. Lower levels of CD4+ count were associated to death comparing to survival group, (73 x 270 cells/mm<sup>3</sup>, **p=0.009**). (Table 1).

Our study has the following limitations: a small number of patients, unicentric, considering that our data has the bias of a reference center it should not be extrapolate for general mortality. We considered that these results should

reinforces the efforts to improve the early HIV diagnosis and the adherence to HAART.

**Table 1.** Clinical characteristics and Outcome

Characteristic	Death N=36	Survival N=26	P	OR (IC95%)
<b>Age</b> 18-44 ≥45	24 12	16 10	0.440	1.25 (0.381- 4.043)
<b>Gender</b> male female	12 24	08 18	0.420	1.12 (0.337- 3.889)
<b>Exposure</b> sexual blood sexual + blood vertical unknown	17 3 2 2 12	14 3 2 3 4	0,335	-----
<b>HAART*</b> - Naive Experimented	7 23	2 24	0.109	3.57 (0.710- 27.37)
<b>Admission diagnosis</b> OI non-OI	26 10	15 11	0.125	1.90 (0.575- 6.326)
<b>CD4 count</b> (median)	73	260	0.009	-----
<b>Duration of hospitalization</b> (median – days)	14.5	7	0.116	-----

\* unknown: 6 cases

### Conclusions

High mortality rate (58.06%) was associated with low CD4+ lymphocytes count. Opportunistic infections were the most frequent cause of death even in the post-HAART era in patients hospitalized in a reference center.

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