

# AIDS-related death in Uruguay: high proportion in patients not retained in HIV care

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**Background:** AIDS-mortality rate has stabilized since 2005 in Uruguay – 5/100.000 inhabitants. But, it has not decreased as expected despite the universal access to care and ART therapy since mid 90's. The National Study of Global Burden of Illness in our country places HIV / AIDS in the age group of 20 to 64 years, in 10th place as cause of premature death, in 5th place in burden of morbidity (DALY) and in 8th place in years of life adjusted for disability.

Reducing AIDS-mortality rate by 2020 is a priority goal for the Ministry of Public Health of Uruguay. The aim of this study was to evaluate the distribution of deaths due to AIDS in the HIV cascade of continuum of care.

**Materials and methods:** A cross-sectional study was conducted through the review of deaths coded as 'AIDS' in 18 years old or more in the National Mortality Registry in 2014.

**Results:** It was found 175 deaths coded as AIDS, accessing to 124 records, of which only 105 fulfilled the CDC definition of AIDS-related death. The remaining 19 were deaths due to conditions non-AIDS related (coding error). The mean age was 43.7±11.6 years, 68% were men, 72% had low educational level (9 years), 47.1% were drug users, 15.4% homeless, 15.4% prisoners and 37.5% were included in social assistance plan. The public health system provided care to 77% of the study sample. Sexual transmission explained 98% of cases, the mean of age between HIV diagnosis and death was 6.2±6.2 years; 72% had CD4 count <200/mml at diagnosis; 43.3% had opportunistic infections (OI) at diagnosis; 64% receipt HAART at any time; 19.4% reached viral load suppressed at any time. HIV late diagnosis was seen in 71.4% and 37.1% of the death occurred in the first year of the diagnosis.

Distribution of death in cascade of continuum of HIV care to AIDS-related versus those who died due to events unrelated to HIV/AIDS is shown in Table 2. Mortality AIDS-related was independently associated with no retention in care (OR 14.09, 95% CI: 1.946-700.42); OI at diagnosis (OR 11.66, 95% CI: 1.35-514.25); CD4 count nadir for each unit of increase (OR 0.989, 95% CI: 0.984-0.999); viral load suppressed before death (OR 0.034, 95% CI: 0.002-0.354).

**Conclusions:** High proportion of patients who died due to AIDS before the linkage and follow-up in the health system demonstrates the need to adopt proven strategies to improve access and continuity of care. In addition, the strategies must be adequate for the conditions of social vulnerability of this population.

Table 1. Characteristics of patients in relation to HIV infection

|                                                                     |                      |                 |
|---------------------------------------------------------------------|----------------------|-----------------|
| Time between diagnosis of HIV and death (years) (n103)              | Medium (Mn-Mx)       | 4 (0-24)        |
|                                                                     | Mean (SD)            | 6.2 (6.6)       |
| Time between diagnosis of HIV and AIDS (years) (n95)                | Medium (Mn-Mx)       | 0 (0-19)        |
|                                                                     | Mean (SD)            | 2.0 (5.1)       |
| Time between the diagnosis of AIDS and death (years) (n96)          | Medium (Mn-Mx)       | 1.0 (0-19)      |
|                                                                     | Mean (SD)            | 3.7 (5.1)       |
| Diagnosis of HIV during hospitalization where death occurred (n105) | n (%)                | 30 (28.6)       |
| Losses of follow-up > 12 months (n70)                               | n (%)                | 50 (71.4)       |
| Late diagnosis (n98)                                                | n (%)                | 70 (71.4)       |
| First CD4 count <200 / l (n78)                                      | n (%)                | 56 (71.8)       |
| Patients with opportunistic disease at the onset of HIV (n104) 1    | n (%)                | 45 (43.3)       |
| First count of CD4 / l (n78)                                        | Medium (Mn-Mx)       | 88.0 (1-1000)   |
|                                                                     | Mean (SD)            | 181.2 (217.6)   |
| Nadir of CD4 / mm3 (n68)                                            | Medium (Mn-Mx)       | 39.5 (1-551)    |
|                                                                     | Mean (SD)            | 73.5 (97.8)     |
| Last count of CD4 / l prior to death (n105)                         | Medium (Mn-Mx)       | 43.0 (1-481)    |
|                                                                     | Mean (SD)            | 84.1 (101.9)    |
| He received ART (n= 105)                                            | Ever                 | n (%) 67 (63.8) |
|                                                                     | Upon death           | n (%) 36 (34.3) |
| HIV viral load suppressed                                           | Ever (n98)           | n (%) 19 (19.4) |
|                                                                     | Upon death (n = 105) | n (%) 3 (2.8)   |

Table 2. Distribution of deaths in "cascade of continuum of HIV care", AIDS-related deaths versus non-AIDS related deaths

| Step at death                                | Death with AIDS conditions (n: 105) % (n) | Death with non-AIDS conditions (n: 19). % (n) | p value |
|----------------------------------------------|-------------------------------------------|-----------------------------------------------|---------|
| At diagnosis                                 | 28.6 (30)                                 | 0.2 (1)                                       | 0.04    |
| Before – linkage                             | 11.4 (12)                                 | 15.8 (3)                                      | 0.7     |
| No retention in care                         | 48.6 (51)                                 | 15.8 (3)                                      | 0.011   |
| Retention in care                            | 8.6 (9)                                   | 21.0 (4)                                      | 0.11    |
| Retention in care on HAART and VL suppressed | 2.9 (3)                                   | 42.1 (8)                                      | 0.000   |

