



Causes of Death among HIV-Infected Adults in France in 2005 and Evolution since 2000

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ABSTRACT, UPDATED FIGURES

Background: Aging, long-term antiretroviral treatment and co-morbidities may contribute to changing the causes of death among HIV-infected persons over time. The Mortality 2005 survey aimed at describing the distribution of causes of death among HIV-infected adults in France in 2005 and its evolution since 2000.

Methods: Physicians involved in the management of HIV infection notified deaths that occurred in France in 2005. The causes of death were documented using a standardized questionnaire similar to the previous national survey performed in 2000.

Results: The 340 participating wards notified 989 deaths (964 in 2000) and documented 937 cases up to 5th February 2007. Median age was 46 years (41 in 2000). 76 % were men; median known duration of HIV infection was 12 years (8 in 2000); the median last available CD4 cell count was 170 (mm³) (94 in 2000). Overall 31% of deceased patients were born abroad (25 in 2000) and 30% were in poor socioeconomic conditions (33 in 2000). The main underlying causes of death were: AIDS-related (96 % vs 47% in 2000), cancer not related to AIDS or hepatitis (16% vs 11%), liver-related (15% vs 13%), hepatitis C: 11% and hepatitis B: 2%, cardiovascular disease (9% vs 9%), other infections (5% vs 7%), suicide (5% vs 4%). Among the 337 AIDS-related deaths, the most frequent contributing events were non-Hodgkin's lymphomas (NHL) (29%). Among cancers not related to AIDS or hepatitis, the most frequent localizations were lung (31%) and digestive tract (15%); 6% were anal cancers. Less than 1% of deaths were directly related to an antiretroviral adverse effect. Patients who died of cancers not related to AIDS or hepatitis and of cardiovascular disease were older. Known duration of HIV infection was longer in patients who died of liver-related cause; half of them had excessive alcohol consumption. More than 50% of patients who died of non-AIDS related causes were smokers.

Conclusions: AIDS-related deaths continue to decrease 10 years after the availability of combination antiretroviral therapy, but remain the most frequent cause of death, mainly due to NHL. The proportion of deaths related to non-AIDS cancers, cardiovascular diseases and liver diseases is increasing and may be explained by aging, co-morbidities and at least two modifiable behaviors, tobacco and alcohol consumption. In addition to HIV specific care, case management of HIV-infected persons should systematically include both prevention and early detection of serious morbidities.

OBJECTIVE

To describe the distribution of causes of death among HIV-infected adults in France in 2005 and its evolution since 2000

METHOD: The Mortality 2005 survey

Same design as the Mortality 2000 survey:
 Multicenter national survey
 Direct contact with all hospital wards involved in the management of HIV infection
 Standardized questionnaire, harmonization by one physician assigned to the survey
 Determination of the underlying cause of death and coding
 - according to the ICD-10 (CépidC)
 - adaptation to specific concerns in HIV (Lewden Int J Epidemiol 2005)
 Improvement in 2005: contact with:
 - penitentiary physicians
 - societies of reanimation, pneumology and hepatology

SUPPORTS

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 Société de Réanimation de Langue Française (SRLF)
 Société de Pneumologie de Langue Française (SPLF)

BACKGROUND

In the combination antiretroviral therapy period (cART), chronic infection, ageing, long-term antiretroviral treatment, viral co-infections, risk factors (smoking), contribute to diversification of morbidities and of causes of deaths in HIV-infected people (Mortalité 2000 survey).
 Surveillance of the causes of death overtime contributes to identify and adapt priorities in prevention and care.

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POPULATION

Participants:
 - 340 wards in France
 - representing about 78 000 patients followed at least once/year
Number of deaths:
 - 989 notified, 937 (95%) documented by 5 February 2007

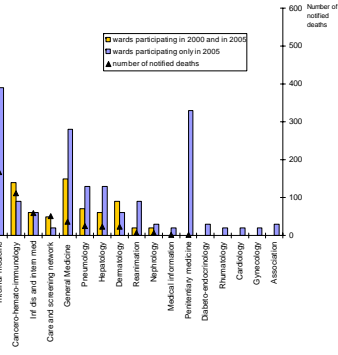


Figure 1: Number of participating wards and number of notified deaths according to the wards' specialties

RESULTS

Figure 2: Evolution of the distribution of the underlying cause of death in HIV-infected adults, 2000 (n=964) and 2005 (n=937)

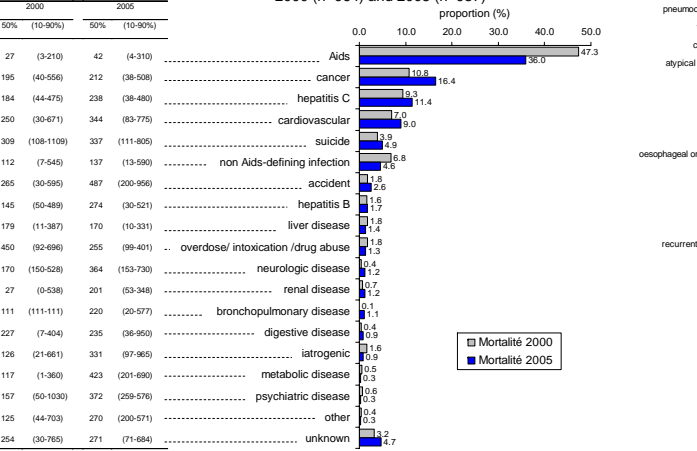


Table: Characteristics of HIV-infected people who died in 2005 according to the underlying cause of death

	All causes (n=937)	Aids (n=337)	Cancer nAIDS (n=154)	Liver (n=136)	Cardio-vascular (n=84)	Other (n=226)
Male gender (%)	76	72	79	79	81	77
Median age (years)	46	45	50	46	51	44
(interquartile range)	(41-54)	(39-53)	(45-58)	(43-50)	(42-61)	(39-51)
Known duration of HIV infection (years)	11.7	9.3	11.7	14.9	13.1	12.0
(interquartile range)	(5.6-16.6)	(0.9-14.2)	(6.5-16.2)	(11.1-18.5)	(7.8-17.2)	(7.0-17.1)
HIV infection diagnosed within 6 months (%)	9	9	4	2	5	3
HIV transmission group (%)						
heterosexual	31	37	34	11	35	30
homo-bisexual	26	30	31	10	31	24
Injecting drug use	30	17	22	66	20	35
transfusion / haemophilia	4	3	4	6	7	3
other / undetermined	9	14	9	7	5	8
Aids stage (%)	64	100	47	44	40	40
Median CD4+ cell count (mm ³)	170	42	212	236	344	290
(interquartile range)	(45-347)	(12-129)	(90-363)	(105-330)	(175-539)	(149-505)
No prior antiretroviral treatment (%)	12	17	9	5	8	14
Dyslipidemia with medical care (%)	9	9	15	4	29	8
Excessive alcohol consumption (%)	28	19	25	49	21	35
Smoking (%)	56	44	62	70	53	64
Poor socio-economic conditions (%)	30	37	27	10	10	33
Non-native from France (%)	31	31	39	27	18	21
Death at hospital (%)	77	90	82	88	58	50

Cancer nAIDS: non-AIDS defining and non-viral hepatitis related cancer; HIV: human immunodeficiency virus; HCV: hepatitis C virus. Poor socio-economic conditions: at least one of the following: no health insurance, no employment, no accommodation, income below 535 €/per month, immigrants in illegal situation, Excessive alcohol consumption: more than 50 grams or 5 glasses (day)

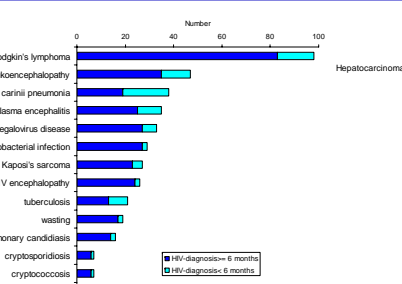


Figure 3: AIDS-defining illnesses among people with AIDS-related underlying cause of death (n=337) according to time since HIV diagnosis

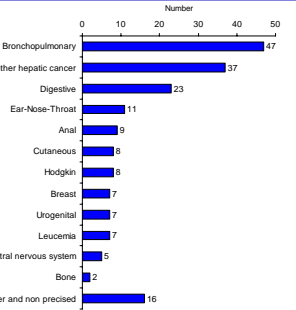


Figure 4: Non-AIDS-defining cancers among people with non-AIDS-related underlying cause of death (n=187)

DISCUSSION AND CONCLUSION

The proportion of deaths related to an AIDS-defining event decreased from 2000 to 2005 (47% to 36%). Nevertheless, AIDS remains the most frequent underlying cause of death, mainly due to non-Hodgkin lymphomas. Among patients with HIV infection recently diagnosed (9% overall, 20% among AIDS-related deaths), the most frequent pathology was pneumocystis pneumonia.

The proportion of non-AIDS non-hepatitis related cancers increased (11% to 16%). Smoking seemed to play a major role as 38% of non-AIDS non-hepatitis related cancers are located in the respiratory tract.

Among liver-related deaths (15% in 2005), HCV was involved in 79% and the proportion of hepatocarcinoma increased (16% to 27%); excessive alcohol consumption was reported in half of the cases.

Cardiovascular-related deaths increased moderately; improvement of therapeutic strategies and management of dyslipidemia may have slowed an initially worse trend.

The closest CD4 cell count to death increased overtime (median 94 to 170/mm³). In 2005, despite 81% of people who died previously received cART, half had CD4 cell count <200/mm³.

In the French context of free access to care, one in three HIV-infected people who died in 2005 had a poor socio-economic condition.

Management of HIV infection is becoming more complex and should include both prevention and early detection of serious morbidity.

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