

Incidence of lung-cancer in a cohort of PWH: a retrospective single-center observational study

G. Carrozzo^{1,2}, S. Reato^{1,2}, G. Pozza^{1,2}, F. Sabaini^{1,2}, M.L. Colombo^{1,2}, M. Zacheo^{1,2}, A. Giacomelli^{1,2}, C. Gervasoni¹, M.L. Oreni³, A.L. Ridolfo¹ and S. Antinori^{1,2}

1 III Infectious Disease Sacco, Luigi Sacco Hospital, Milan, Italy; 2 Università degli Studi di Milano, DIBIC Luigi Sacco, Milanese Unit, ASST Fatebenefratelli, Italy; 3 IRCCS Fondazione Don Carlo Gnocchi, Milan, Italy

Introduction/Summary

- Lung cancer is currently one of the leading causes of death among people with HIV (PWH), whose prognosis has been shown to be worse compared to general population¹.
- Its incidence is higher in PWH compared to the general population, possibly due to increased smoking rates and other independent virus- and comorbidity-related factors².
- Our study aims to estimate the incidence of lung cancer in a cohort of PWH.

Study Design

- Retrospective
- Observational
- Single-center

Methods

- We observed PWH accessing the outpatient service of the III Infectious Disease Division at L. Sacco Hospital (Milan) from January 1st, 2000, to December 31st, 2022.
- We collected demographic, clinical, laboratory, and cancer-related information from individuals diagnosed with primary lung cancer.
- AIDS-history was defined by either an AIDS-defining illness or a CD4 count < 200/mm³.
- We calculated overall and sex-specific crude incidence of lung cancer per 100,000 person-years in our cohort of PWH from 2000 to 2022.
- We used the Kaplan-Meier curve to estimate 5-year survival after lung cancer diagnosis.

Results

- Among the 4,715 PWH who accessed our clinics from 2000 to 2022, we observed 49 cases of primary lung cancer.
- The characteristics of population are shown in Table 1.

Results of 2

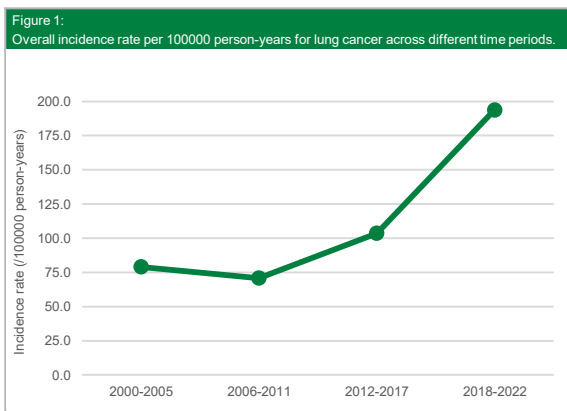
INCIDENCE OF LUNG CANCER

Overall incidence of lung cancer in our population was **110.6 per 100,000 person-years**.

The median age of our cohort had progressively increased from 37 (IQR 34-42) in 2000 to 54 (IQR 45-60) in 2022.

A progressive increase in lung cancer incidence was observed starting from 2000-2005 (79.0 per 100,000 person-years) to 2018-2022 (193.8 per 100,000 person-years) (Figure 1).

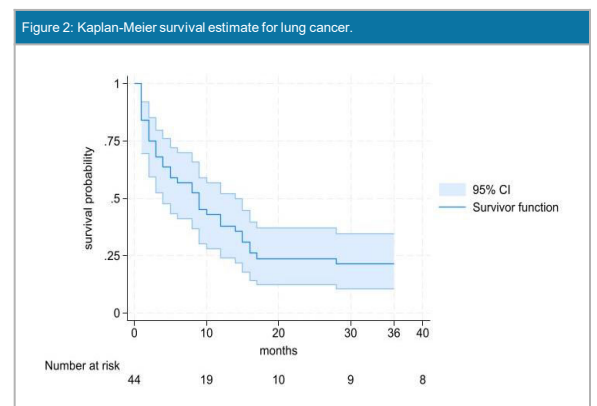
In the period 2018-2022, the sex-specific incidence was 257.5 and 171.1 per 100,000 person-years in females and males, respectively.



Results of 3

MEDIAN SURVIVAL

The median survival from diagnosis was 8 months (IQR 2-16) with a 5-year survival probability of 21.4% [95% CI: 10.6-34.6] (Figure 2).



Conclusion

- The incidence of lung cancer in our cohort has been progressively increased, mainly due to the aging of PWH who access our Center.
- This should prompt us to reflect and take action to reduce the major risk factors influencing the incidence (e.g. smoking) and to implement lung cancer screening by performing chest CT scans in individuals with significant risk factors, as outlined by the 2023 EACS guidelines³.

References

- Haas CB, Engels EA, Horner MJ, Freedman ND, Luo Q, Gershman S, Qiao B, Pfeiffer RM, Shiels MS. Trends and risk of lung cancer among people living with HIV in the USA: a population-based registry linkage study. *Lancet HIV*. 2022 Oct;9(10):e700-e708. doi: 10.1016/S2352-3018(22)00219-3. PMID: 36179753; PMCID: PMC9641618.
- Peprah E, Armstrong-Hough M, Cook SH, Mukasa B, Taylor JY, Xu H, Chang L, Gyamfi J, Ryan N, Ojo T, Snyder A, Iwelunmor J, Ezechi O, Iyegbe C, O'Reilly P, Pascal Kengne A. An Emerging Syndemic of Smoking and Cardiopulmonary Diseases in People Living with HIV in Africa. *Int J Environ Res Public Health*. 2021 Mar 18;18(6):3111. doi: 10.3390/ijerph18063111. PMID: 33803504; PMCID: PMC8003038.
- EACS Guidelines version 12.0, October 2023

Table 1: CHARACTERISTICS OF POPULATION	OVERALL (n=49)	AIDS-HISTORY (n=34)	NO-AIDS-HISTORY (n=15)
Male sex at birth, n (%)	36 (73.5)	24 (70.6)	12 (80.0)
Caucasian ethnicity, n (%)	47 (95.9)	33 (97.1)	14 (93.3)
Mode of HIV acquisition, n (%)			
MSM	6 (12.2)	4 (11.8)	2 (13.3)
HE	24 (49.0)	18 (52.9)	6 (40.0)
Trans-gender	1 (2.0)	0 (0.0)	1 (6.7)
IDU	15 (30.6)	11 (32.4)	4 (26.7)
Other	3 (6.1)	1 (2.9)	2 (13.3)
History of smoking, n (%)	39 (79.6)	29 (85.3)	10 (66.7)
Daily cigarettes, median (IQR)	20 (15-29)	20 (15-29)	20 (15-23)
Age at cancer diagnosis, median years (IQR)	58 (51-61)	58 (52-61)	58 (47-60)
CD4/mm ³ at cancer diagnosis, median (IQR)	428 (214-666)	410 (198-589)	468 (344-695)
CD4/CD8 ratio at cancer diagnosis, median (IQR)	0.57 (0.39-1.02)	0.4 (0.24-0.58)	0.74 (0.57-1.03)
HIV-RNA > 200 cp/mL at cancer diagnosis, n (%)	9 (18.4)	5 (14.7)	4 (26.7)
Cancer histologic subtype, n (%)			
Adenocarcinoma	16 (32.7)	12 (35.3)	4 (26.7)
Squamous cell carcinoma	12 (24.5)	9 (26.5)	3 (20.0)
Small cell carcinoma	9 (18.4)	9 (26.5)	0 (0.0)
Other histologies	4 (8.2)	1 (2.9)	3 (20.0)
Not available	8 (16.3)	3 (8.8)	5 (33.3)
Death, n (%)	40 (81.6)	27 (79.4)	13 (86.7)
Age at death, median years (IQR)	58 (52-63)	58 (52-69)	58 (45-63)
Time of survival, median months (IQR)	8 (2-16)	8 (2-16)	4 (1-16)