

Pneumocystis pneumonia cases in HIV and non-HIV individuals in a peripheral hospital in Portugal: an 11-year experience

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Background

- Pneumocystis pneumonia (PCP) is one of the most common fungal diseases in immunosuppressed people, particularly in people living with HIV (PLWHIV).
- With effective antiretroviral therapy (ART) and recommendations for primary prophylaxis for individuals with HIV who have a CD4 T lymphocyte count of less than 200/ μ L, the prevalence of PCP has decreased in this population.
- In contrast, PCP prevalence in non-HIV immunocompromised individuals has increased due to new biological therapies.

Materials & Methods

- Retrospective review of all cases of PCP diagnosed at tertiary hospital in Portugal from March 2012 to December 2023.
- Were included both HIV-positive and HIV-negative individuals who were diagnosed with PCP based on clinical presentation, radiological findings (X-Ray, CT scan), and microbiological tests (DFA, PCR).
- We collected demographic, clinical, radiological, microbiological and therapeutic data.

Results

- There were reported 47 patients diagnosed with PCP.
- The ratio of non-HIV to HIV PCP cases showed an increase over the years from 0 (2012-2015) to peaks of 0.5 in 2016, 1 in 2022, and then 0.5 in 2023, indicating a growing proportion of non-HIV cases (Figure 1).

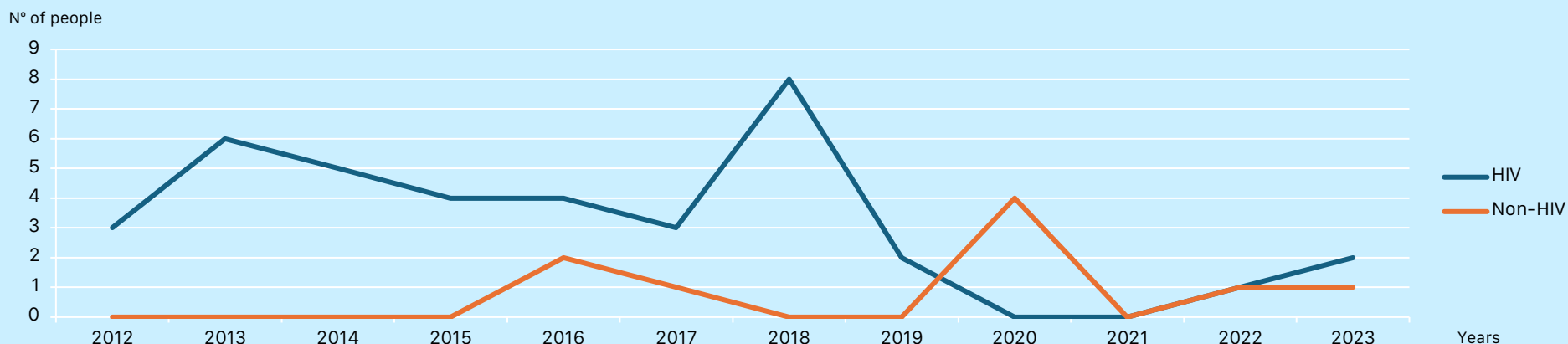


Figure 1: Linear graph showing the evolution of PCP cases (absolute) in both HIV and non-HIV individuals throughout the years (2012-2023)

- In the HIV-positive population, 55.3% were naïve individuals and 44.7% were experimented individuals that either were on ART or had previous ART regimens taken (Figure 2).
- The mean CD4+ count at the time of the diagnosis was 45.8 cells/ μ L and the mean viral load was 476144.1 copies/mL.
- From the experimented individuals with PCP diagnosis 88.2% were people with poor adherence to ART.
- Out of the 47 patients with PCP, 4 patients (8.5%) died. The mortality rate was 5.26% (2 out of 38) among HIV-positive and 22.22% (2 out of 9) among HIV-negative individuals, with no statistically significant difference in mortality rates between the two groups ($p = 0.329$)

HIV population characteristics					
Sex	Feminine	17 (42,6%)	CDC classification system for HIV infection	C2	2
	Masculine	21 (57,4%)		C3	36
Age	Mean \pm SD	50 \pm 12,5	CD4+ count (cell/ μ L)	Mean \pm SD	45,8 \pm 54,5
	Minimum-maximum	26-81		Minimum-maximum	1-226
HIV status	Newly diagnosis	21 (55,3%)	Viral Load (copies/mL)	Mean \pm SD	476114 \pm 999084
	Previous diagnosis	17 (44,7%)		Minimum-maximum	424-5057148
ART	Non adherent	15 (39,5%)			
	Adherent	2 (5,3%)			

Figure 2: Table of HIV population characteristics considering sex, age, HIV status at the time of PCP diagnosis, as well as ART adherence for the experimented group, CDC classification, CD4+ count and viral load.

Conclusion

The study displays the importance of implementation of prophylaxis of PCP in non-HIV immunosuppressed patients as well as in PLWHIV with CD4 T-lymphocytes count less than 200/ μ L to prevent PCP and therefore, reduce burden and mortality of this fungal disease.