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FACTORS INFLUENCING SLEEP DISORDERS IN PEOPLE WITH HIV IN A REAL-LIFE SETTING

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Introduction

- Several studies show a correlation between sleep disorders and people with HIV (PWH).
- The purpose of this study was to assess sleep quality and factors implicated in poor sleep quality in PWH.

Material and methods

- Pittsburgh Sleep Quality index (PSQI) was used to evaluate sleep quality in PWH attending our HIV Outpatient Clinic. All PWH were aged 18 years or older, were on ART and presented for their routine clinical visit between 9/1/2023 and 16/8/2023.
- The PSQI presented an internal consistency of α = 0.77. Demographic, clinical, therapeutic ART regimens and laboratory variables were collected.
- The primary study endpoint was the PSQI score. PSQI values were grouped in two classes: <5 (good sleepers), ≥5 (bad sleepers). Differences between good and bad sleepers in subjective sleep parameters, ART regimens, and hypnotic drugs were evaluated.
- Secondary endpoints were subjective sleep parameters and HIV and non-HIV factors independently associated with bad sleep.
- Individuals' characteristics were reported as median (interquartile range, IQR) or frequency (%) and compared using Mann-Whitney or Chi-Square/Fisher's exact test.
- Spearman's rank correlation coefficients were also calculated. Logistic regression models were calculated to assess risk factors associated with bad sleep.

Results

- 710 PWH (86% males) were evaluated: median age was 54 (IQR=46-60), 61% were men who have sex with men, ART duration was 13.9 years (IQR=9.0-23.4), 427 (60.1%) individuals had an undetectable viral load and 701 (98.9%) had CD4+ > 200 cells/μL.
- Bad sleepers were 360 (50.7%) and the good sleepers were 350 (49.3%). Bad sleepers, compared to good sleepers, were older (55% vs 52%; p=0.021) and had more years of ART treatment (15.4 vs 12.7; p=0.001).
- At univariable analysis, no differences were found between groups concerning NNRTI-based or PI-based versus INSTI-based regimens, but we observed greater difficulty falling asleep (46.5% vs 36% vs 44.9%; p=0.016) in PWH treated by DRV/r or DRV/c compared to RPV/DOR and BIC/DTG.
- Bad sleepers also had more frequently: falling asleep latency > 30 minutes (39% vs 3%; p<0.0001), total sleep time < 7 hours a night (66% vs 23%; p<0.0001), a lower sleep efficiency (83% vs 93%; p<0.0001) and a poor or very poor quality of sleep/night (45% vs 1%; p<0. 0001). Moreover, bad sleepers more frequently reported to take hypnotic drugs (43% vs 2%; p<0.0001), excessive daytime sleepiness (24.2% vs 8.7%; p<0.0001) and complaining of daytime impairment (58.7% vs 8.7%; p<0.0001).
- A positive correlation was observed between years of ART and sleep complaints identified with PSQI (r=0.13; p=0.0004). Findings of univariable and multivariable logistic regressions models are in Table 1.
- At multivariable analysis, a longer ART duration (p=0.003), the use of psycholeptics (p<0.0001) and psychoanaleptics (p=0.022) drugs were independently associated with PSQI ≥5. Indeed, at multivariate analysis, no ART regimens were associated with PSQI ≥5.

Univariable and multivariable logistic regression on the risk of having PSQI≥5

Variable	Category	Crude OR of having PSQI ≥5 (95%CI)	p-value	Adjusted OR of having PSQI ≥5 (95%CI)*	p-value
Age	Per 5-years older	1.079 (1.007-1.156)	0.031		
Sex assigned at birth	Female versus male	1.574 (1.019-2.430)	0.041		
Years since start of ART	Per 5-years longer	1.155 (1.058-1.262)	0.001	1.148 (1.048-1.257)	0.003
Nadir CD4+	≤200 vs >200	1.461 (1.049 (2.034)	0.025		
Type of current ART regimens	NNRTI-based vs INSTI-based PI-based vs INSTI-based	0.945 (0.666-1.342) 1.857 (1.057-3.260)	0.066 0.249		
Use of antiepileptic drugs	Yes versus No	3.348 (1.494-7.501)	0.003		
Use of psicoleptic drugs	Yes versus No	6.483 (3.439-12.221)	<0.0001	5.193 (2.694-10.010)	<0.0001
Use of psicoanalectic drugs	Yes versus No	3.404 (1.929-6.007)	<0.0001	2.047 (1.109-3.781)	0.022

*** performed using a backward selection algorithm using entry and stay criteria set at 5% significance level with p=0.05**

Conclusions

- We did not observed an association between sleep disorders and ART: as in other studies, our results rather suggest that the role of current ART regimens is likely marginal. In a cross-sectional analysis in single center cohort of 721 PWH, PSQI and Insomnia Severity Index scores were independently associated with depression and anxiety, but not with the use of specific antiretroviral regimens or to HIV-related parameters.[1] We noticed instead a strong association between sleep disorders and the use of psycholeptic and psychoanaleptic drugs in PWH.
- Around 50% of PWH had a poor sleep quality, while in Italian general population bad sleep is reported in 14%. Our findings are in line with a previous finding of a 58% prevalence of poor sleep quality in this population.
- The mechanisms implicated in sleep disturbances in PWH are still unclear, but immune status and pro-inflammatory status in these patients may worsen them.[2] Our results can be useful to guide the more in-depth studies of the underlying mechanisms and to improve quality of life of PWH.

References

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