



PO-25

COVID-19 in hospitalized HIV-positive and HIV-negative patients a matched study

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Background

- Many studies have analyzed the characteristics and outcomes of COVID-19 in PWH across Europe, Asia, the US, and Africa.
- Whether HIV increases the risk of acquiring SARS-CoV-2 or the severity or mortality of COVID-19 is still unknown.
- To the best of our knowledge, in 7 studies, some comparison between the characteristics and outcomes of COVID-19 in PWH and people without HIV (non-PWH) has been performed ¹⁻⁷.
- Most reports found no differences in mortality between PWH and non-PWH with COVID-19, except in three cohort studies from the UK ^{5,7} and South Africa ¹.

Objective

- To assess the frequency of COVID-19 within a large prospective cohort of PWH in Spain during the first wave of the pandemic.
- To compare the characteristics and clinical outcomes of hospitalized PWH with COVID-19 with age sex-matched control group on non-PWH.



Materials and Methods

Design	<ul style="list-style-type: none">Retrospective study
Setting	<ul style="list-style-type: none">Spanish HIV Research Network Cohort (CoRIS). A prospective cohort of PWH, naive to ART at study entry, in 46 participating centers from 13 of 17 Regions in Spain.
Participants	<ul style="list-style-type: none">Individuals with RT-PCR confirmed COVID-19 among PWH in follow-up within CoRIS up to June 30, 2020.
Data source & measurements	<ul style="list-style-type: none">The data source for demographics, HIV-related characteristics, and comorbidities was the CoRIS DB.COVID-19-related data were collected from EMR using a modified version of the ISARIC Core CRF ¹.Each hospitalized PWH with COVID-19 was matched with 5 hospitalized non-PWH of the same age and sex randomly selected from COVID-19@Spain, a multicenter cohort of 4,035 patients hospitalized with PCR confirmed COVID-19 ².The COVID-19 SEIMC score (predictive of 30-day mortality), based on age, sex, dyspnea, SaO₂, neutrophil-to-lymphocyte ratio, and eGFR, was calculated retrospectively at admission in all patients ³.
Main outcome	<ul style="list-style-type: none">All-cause in-hospital mortality.
Ethics	<ul style="list-style-type: none">The Ethics Committee of Hospital General Universitario Gregorio Marañón approved the study.

1) https://isaric.org/wp-content/uploads/2020/10/ISARIC_WHO_nCoV_CORE_CRF_Modules_Completion_Guide_25.08.2020.pdf

2) Berenguer J, Ryan P, Rodríguez-Baño J, et al. *Clin Microbiol Infect* 2020; 26(11):1525-1536.

3) Berenguer J, Borobia AM, Ryan P, et al. *Thorax* Epub ahead of print. doi:10.1136/thoraxjnl-2020-216001.



Results

Among 10,922 PWH in CoRIS during the study period

- 45 (0.41%) had a recorded diagnosis of COVID-19, 21 of which (46.7%) were hospitalized.
 - 97.8% on ART, Median CD4 481 cells/mm³, 94.3% undetectable VL

Hospitalized vs non-hospitalized PWH

- Median age 53 vs. 38 years, P=0.001
- Arterial hypertension 42.9% vs. 8.3%, P=0.007
- Chronic lung disease 19.0% vs. 0%, P=0.025

Illness severity

- Non-hospitalized PWH
 - 23 mild illness
 - 1 moderate disease (pneumonia)
- Hospitalized PWH,
 - 2 mild illness,
 - 6 moderate disease,
 - 12 severe disease (severe pneumonia)
 - 1 critical disease (ARDS)

Death

- Two PWH with COVID-19, both hospitalized, died.

Clinical characteristics and outcomes of the 21 hospitalized PWH with COVID-19 and the 105 age/sex-matched non-PWH

Variable	PWH (N = 21)	Non-PWH (N = 105)	P
Male sex at birth- No./total No. (%)	19/21 (90.5)	95/105 (90.5)	1.00
Median age (Q1; Q3) - yr.	53 (46; 56)	53 (46; 56)	1.00
Country of birth - No./with data (%)			
Spain	12/21 (57.1)	82/103 (79.6)	0.028
Other	9/21 (42.9)	21/103 (20.4)	
Number of comorbidities - No./with data (%)			
None	8/18 (44.4)	36/91 (39.6)	0.798
1-2	7/18 (38.9)	43/91 (47.3)	
≥3	3/18 (16.7)	12/91 (13.2)	
Chest radiography - No./with data (%)			
Infiltrates present at baseline	18/20 (90.0)	86/100 (86.0)	0.631
Bilateral opacities	15/18 (83.3)	62/82 (75.6)	0.481
COVID-19 SEIMC Score			
Median (Q1; Q3)	4 (2 - 7)	5 (3 - 7)	0.996
Supportive therapy			
Oxygen therapy (nasal, reservoir, mask)	13/21 (61.9)	88/102 (78.4)	0.108
Treatment - No./with data (%)			
Remdesivir	0/21	3/102 (2.9)	0.426
Corticosteroids	7/21 (33.3)	28/102 (27.4)	0.586
Tocilizumab	1/21 (4.8)	17/102 (16.7)	0.160
Death	2/21 (9.5)	12/105 (11.4)	0.800

Main findings & Discussion

COVID-19 among PWH in CoRIS during the study period

- Reported as confirmed in 0.4% PWH, most had well-controlled HIV
- 46.7% were hospitalized
- Hospitalized PWH were older and more frequently with comorbidities than those managed ambulatorily.

Characteristics and outcomes of hospitalized PWH vs with age/sex-matched non-PWH controls

- A Higher proportion of PWH than non-PWH were born abroad, particularly in Latin American Countries
- No differences in severity scores on admission
- Mortality not significantly different for hospitalized PWH vs non-PWH 9.5% vs 11.4%.

Limitations

- Retrospective design
- Small number of PWH with COVID-19

Strengths

- Nested in a prospective cohort of PWH
- Comparison with an age- and sex-matched non-PWH controls
- Use of a validated predictive scoring system

Conclusions

Our findings suggest that well-controlled HIV infection does not modify the clinical presentation or worsen clinical outcomes in patients hospitalized with COVID-19.

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