EuroSIDA Disruptions in testing and treatment services for hepatitis C virus during the SARS-CoV-2 epidemic among individuals with HIV susceptible for HCV reinfection: results from the EuroSIDA study

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BACKGROUND

- Since 2015, there has been considerable attention placed on minimizing the incidence of and mortality related to HCV through increased testing and treatment.
- Several studies have observed substantial declines in testing for HCV during the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) pandemic, which could have consequences on achieving elimination of HCV.

OBJECTIVE

To determine the effect of the SARS-CoV-2 epidemic on HCV testing and commencing anti-HCV treatment in individuals with HIV across Europe, particularly in those with a previous HCV infection for whom the risk of HCV re-infection is substantially increased.

METHODS

STUDY DESIGN

Of individuals with HIV under follow-up in the prospective EuroSIDA cohort study between January 2016 and December 2021, we selected those who had a positive anti-HCV antibody test (i.e., susceptible for HCV re-infection and eligible for HCV-RNA testing).

Follow-up began from the latest of 1 January 2016 or date enrolled into EuroSIDA, until the earliest of last visit/assessment, withdrawal date or death, prior to the censoring date of 31 December 2021.

STATISTICAL ANALYSIS

We estimated the proportion of anti-HCV positive individuals who received an HCV-RNA test for each calendar year between 2016-2021.

 Analysis are presented both overall and in two subsets of individuals who were previously HCV-RNA negative because of [i] sustained virological response [SVR] or [ii] spontaneous clearance [SC]).

SC was defined as a negative HCV RNA test at the same time or after a positive anti-HCV antibody test and without receiving HCV treatment. SVR was defined as a negative HCV RNA test ≥12 weeks after stopping DAA or ≥24 weeks after stopping other HCV treatments.

Among individuals with a positive HCV-RNA test, we estimated the proportion who commenced treatment with direct-acting antivirals (DAA) at any time during the year for each calendar year between 2016-2021.

We assessed determinants of (i) receiving an HCV-RNA test and (ii) commencing DAA-treatment across calendar years using logistic regression with generalized estimating equations.

RESULTS

DESCRIPTION OF THE STUDY POPULATION

Between 2016-2021, 6126 individuals were at one point eligible for analysis. Median (IQR) follow-up time in analysis was 5 years (3-6). Characteristics of those included in analysis are given in **Table 1**.

	Overall (N = 6126)
Age (years), median (IQR)	48 (40, 54)
CD4 count category (cells/mm3), n (%)	
<200	301 (4.9)
200-499	1611 (26.3)
>=500	3252 (53.1)
HIV viral load (copies/mL), n (%)	
<200	5001 (81.6)
>=200	460 (7.5)
Unknown	665 (10.9)
Current ART regimen, n (%)	
Not on treatment	350 (5.7)
NNRTI-based	1609 (26.3)
PI-based	1714 (28.0)
INSTI-based	1651 (27.0)
Other	802 (13.1)
HIV transmission risk, n (%)	
MSM	1186 (19.4)
IDU	3577 (58.4)
Heterosexual	990 (16.2)
Other/unknown	373 (6.1)
Region, <i>n</i> (%)	
South	1554 (25.4)
Central West	1400 (22.9)
North	863 (14.1)
Central East	879 (14.3)
Eact	1/20 (22.2)

Table 1. Description of the study population Data from the first eligible visit are presented.

East 1430 (23.3)

RESULTS (CON'T)

CHANGES IN HCV TESTING AND COMMENCING DAA AFTER THE START OF THE COVID-19 PANDEMIC

In the overall study population (Figure 1A), the proportion tested during the year ranged between 32.8-39.4% in 2016-2019 and decreased slightly to 29.5% (n=1090/3700) in 2020 (p<0.001) and declined further to 26.6% (n=861/3232) in 2021 (vs. 2020, p=0.007). The proportions tested for HCV-RNA in those who were HCV-RNA negative because of SVR and because of SC are shown in Figure 1B and Figure 1C, respectively.

In those with a positive HCV-RNA result (Figure 1D), the proportion commencing DAA-therapy during the year ranged from 19.2% and 22.6% in 2016-2019 and decreased significantly to 16.7% (*n*=141/842) in 2020 (p<0.001) and further to 13.3% (n=80/600) in 2021 (vs. 2020, p=0.060).

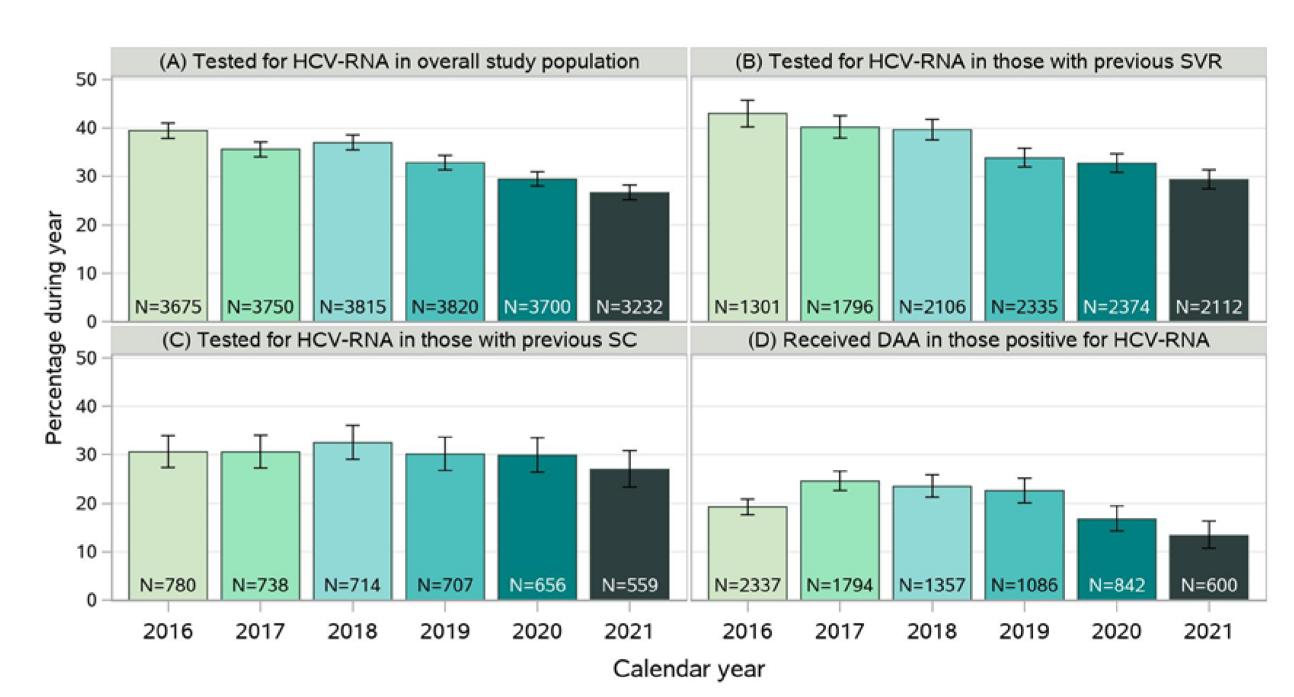


Figure 1. Testing for hepatitis C virus (HCV) RNA and commencing direct acting antivirals (DAA) during 2016-2021

DETERMINANTS OF HCV TESTING AND COMMENCING DAA

Univariable and multivariable odds ratios (OR) and 95% confidence intervals (CI) for determinants of HCV RNA testing are presented in **Figure**

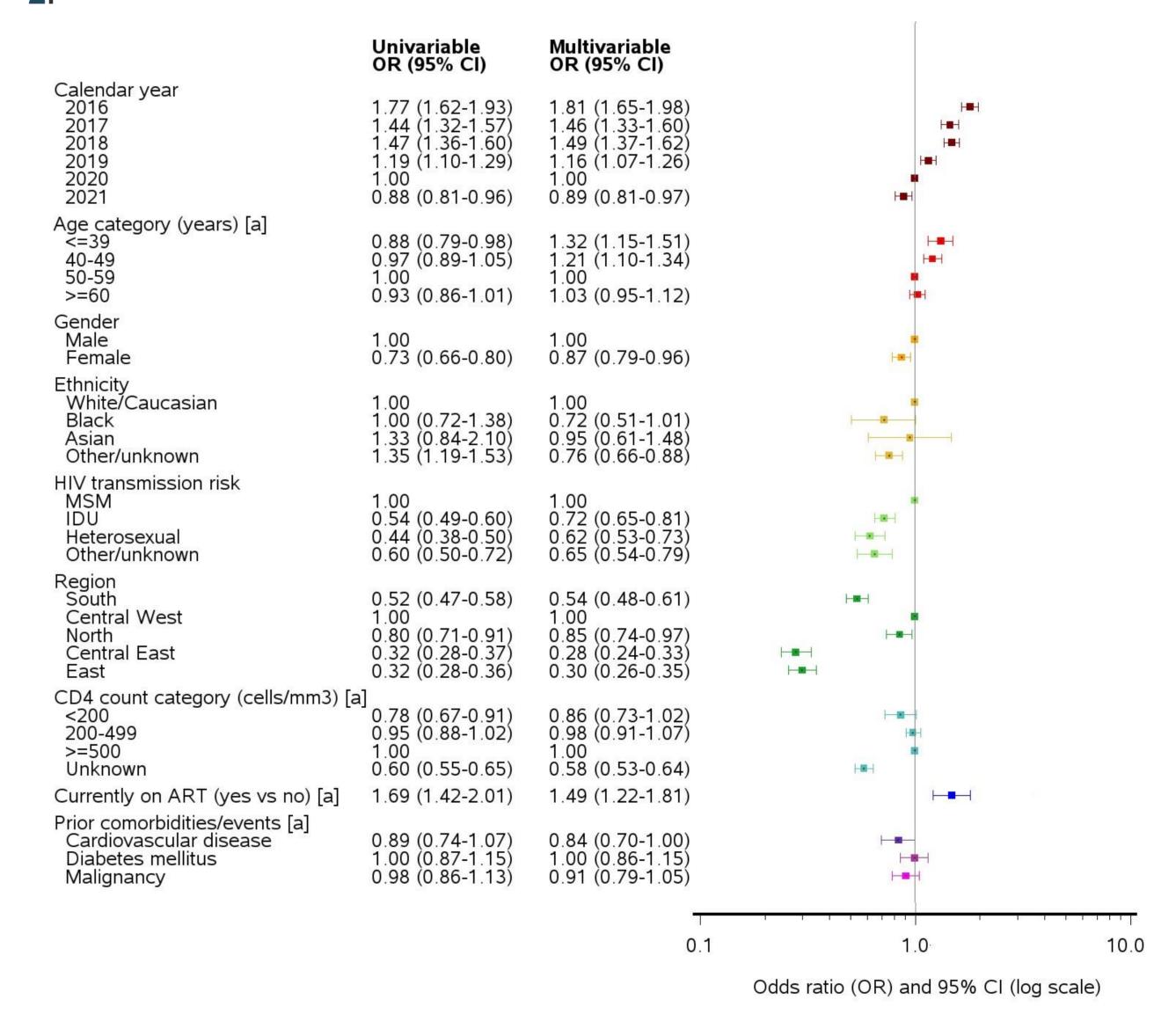


Figure 2. Factors associated with HCV testing during 2016-2021 in those with an indication for an **HCV RNA test at start of year** Data for all visits are presented. [a] Time-updated factors assessed at the last visit/assessment in

each year, or if not available, at the midpoint of the year.

Commencing DAA-therapy was higher in 2017-2019 compared to 2020 in multivariable analysis. There was a decrease in commencing DAA-therapy in 2021 compared to 2020, but this was not significant (OR=0.77, 95%CI=0.58-1.02). Other determinants of commencing DAA were age, being MSM, European region, higher CD4+ count, being currently on ART, and not having a malignancy.

CONCLUSIONS

- In individuals susceptible to HCV reinfection and eligible for HCV-RNA testing, there were declines in HCV testing in the first year of the SARS-CoV-2 epidemic and subsequent declines in the year thereafter.
- For those with chronic HCV, significant decreases in commencing DAAtreatment were also seen during the SARS-CoV-2 epidemic.
- Whether these declines are sustained in the prolonged era of SARS-CoV-2 warrants further investigation.