

# Hepatitis delta testing in adults with chronic hepatitis B virus infection attending for outpatient care: Who are those unscreened?

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## Introduction

- EASL guidelines on hepatitis delta virus (HDV)<sup>1</sup> strongly recommend anti-HDV testing in all individuals with hepatitis B surface antigen (HBsAg) at least once, with re-testing advised for anti-HDV seronegative individuals exhibiting risk factors or clinical alterations.
- Previous studies reported variable rates of anti-HDV screening across populations, ranging from 8.5% (Kushner et al. 2015)<sup>2</sup> to 49% (Brancaccio et al. 2023)<sup>3</sup>.
- Given these alarming findings, we conducted a survey of anti-HDV screening in adults in active follow-up for chronic hepatitis b virus (HBV) infection at Policlinico Tor Vergata Infectious Disease Unit in Rome.

## Study Design

- We performed a retrospective single-centre study of patients with positive HBsAg.

## Methods

- All patients with positive HBsAg serology who had attended at least one outpatient visit between 1st March 2023 and 1st March 2024 were included.
- The data collected included demographic, clinical and laboratory parameters, HBV status, the year of the start of HBV follow-up, HIV and hepatitis C virus (HCV) co-infection status, and results of liver ultrasound imaging and elastography (FibroScan). Anti-HDV serology data were retrieved from the medical and laboratory records.
- Differences between groups were assessed using the Mann-Whitney U test (two groups, continuous variable) or the Chi<sup>2</sup> test (categorical variables). Statistical analyses were performed using the software JASP (version 0.18.3 JASP Team, 2024).

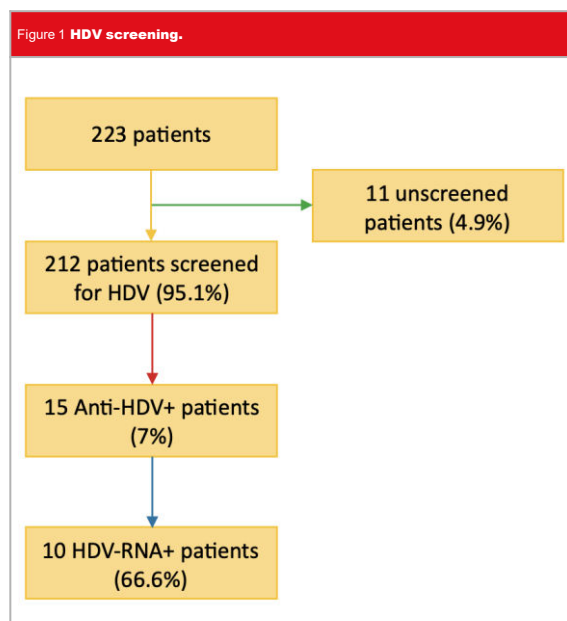
## Results

- Among 223 patients in HBV follow-up, median age was 50 year (IQR 39-62) and most (122, 54.7%) were assigned male at birth. There was substantial diversity in country of origin (Table 1).

Characteristics	Total population	Anti-HDV testing		p-value
		Yes	No	
Total number	223	212	11	-
Sex at birth, n (%)				
Male	122 (54.7)	119 (56.1)	3 (27.3)	0.061
Female	101 (45.3)	93 (43.9)	8 (72.7)	
Age, median years (IQR)	50 (39-62)	50 (39-63)	55 (38-56.5)	0.854
Country of origin, n (%)				0.981
Italy	88 (39.5)	84 (39.6)	4 (36.4)	
Eastern Europe	70 (31.4)	66 (31.1)	4 (36.4)	
Africa	43 (19.3)	41 (19.3)	2 (18.2)	
Asia	17 (7.6)	16 (7.6)	1(9)	
Latina America	5 (2.2)	5 (2.4)	0 (0)	
AST, median IU/L (IQR)	26 (22-32)	26 (22-33)	26 (21-31)	0.557
ALT, median IU/L (IQR)	24 (18-34)	24 (18-34)	25 (18-42)	0.885
On anti-HBV therapy	148 (66.4)	144 (67.9)	4 (36.4)	<b>0.001</b>
HBV-DNA median IU/ml (IQR)	9 (<10-75)	<10 (<10-51)	688 (66-1310)	<b>&lt;0.001</b>
HBsAg, median IU/ml (IQR)	997 (69-8273)	994 (60-8177)	1005 (201-8981)	0.792
HBeAg positive, n (%)	22 (9.9)	22 (10.5)	0 (0)	0.281
Liver stiffness kPa (IQR)	5.4 (4.1-7.5)	5.4 (4.1-7.6)	5.5 (5.1-6.1)	0.945
HIV positive, n (%)	25 (11.3)	25 (11.9)	0 (0)	0.224
HCV positive, n (%)	12 (6.3)	11 (5.2)	1 (9.1)	0.380
Duration of follow-up, median months (IQR)	28 (15-69.5)	31.5 (16-71.2)	4 (1-11.5)	<b>&lt;0.001</b>
≥1 attendance after start of FU, n (%)	215 (96.4)	212 (100)	3 (27.3)	<b>&lt;0.001</b>

- Most individuals were HBeAg-negative (201, 90.1%), were receiving anti-HBV therapy with either entecavir or tenofovir (148, 66.4%), and had undetectable HBV DNA or HBV<10 IU/ml (139, 62.3) and normal transaminases (183, 82%).

- HDV screening results were available in 212 patients (95.1%), including 15 that resulted positive (prevalence 7%; 95% CI 4.0-11.4) (Figure 1).



## Results

- 11 (4.9%) did not undergo anti-HDV screening. Those patients are described in Table 2.

ID	Sex	Age	Country of origin	HBV therapy	HBV-DNA (IU/ml)	HBsAg (IU/ml)	Start of FU	Time in FU (months)	≥1 attendance after start of FU
No_HDV1	F	57	Eastern Europe	Entecavir	UD	1005	Apr-22	23	Yes
No_HDV2	M	39	Eastern Europe	None	48500	1064	Aug-23	7	No
No_HDV3	M	72	Italy	Entecavir	UD	193	Jan-22	26	Yes
No_HDV4	F	37	Eastern Europe	TDF	23100	20437	Nov-23	4	No
No_HDV5	F	39	Africa	None	527	201	Feb-24	1	No
No_HDV6	F	55	Asia	None	1670	60	Feb-24	1	No
No_HDV7	F	56	Italy	None	57	8981	Oct-23	5	No
No_HDV8	F	29	Africa	None	949	12719	Feb-24	1	No
No_HDV9	F	55	Italy	None	75	300	Nov-22	16	Yes
No_HDV10	F	76	Italy	TDF	909	NA	Feb-24	1	No
No_HDV11	M	33	Eastern Europe	None	688	NA	Jan-24	2	No

- The group without a screening result comprised a larger proportion of women (p=0.06) and had a shorter duration of HBV follow-up with fewer clinic attendances (p<0.001). As a result, they also were less likely to have started anti-HBV therapy and to have a suppressed HBV DNA.

## Conclusion

- Our unit has achieved high, albeit incomplete, rates of anti-HDV screening, reassuringly exceeding the rates reported in the literature.
- Individuals without anti-HDV screening had significantly shorter duration of follow-up, usually because recently linked to our ID Unit, but there was also some indication that screening might have been less common among women.
- Implementing HDV reflex testing could ensure complete anti-HDV screening for all individuals that enter HBV follow-up.

## References

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