

# Frequent delayed hepatitis B spontaneous clearance among high risk groups

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## Background

- The majority of individuals (95%) who acquire a hepatitis B virus (HBV) infection during adulthood, spontaneously clear the virus.
- However, we previously showed that shortly after an HBV infection, an unexpectedly high proportion (25%) of men who have sex with men (MSM) and people who use hard drugs (PWUD) develop a chronic HBV infection.

## Objectives

We aimed to determine the presence, frequency and time to delayed HBV clearance and, to explore determinants hereof.

## Methods

### Study population:

- MSM and PWUD participating in the Amsterdam Cohort Studies who acquired HBV during follow-up, determined by anti-HBc seroconversion (HBVsc).

### HBV groups:

We defined three groups of HBV infection:

- Standard clearance: HBsAg negative within 6 months of HBVsc
- Delayed clearance: HBsAg positive within 6 months of HBVsc followed by a HBsAg and HBV-DNA negative result (>6 months after HBVsc)
- Chronic infection: HBsAg positive or HBsAg negative with a positive HBV-DNA test result at their last visit.

### Statistics:

- Potential determinants for standard, delayed clearance and chronic HBV were examined using univariable multinomial logistic regression.
- Time to HBV clearance was estimated using Kaplan-Meier method.

## Results

- During follow-up, 148 individuals seroconverted for HBV (61 MSM, 87 PWUD); median follow-up after HBVsc was 8.8 years.
- 106 individuals (71.0%) with standard clearance, 15 (10.1%) with delayed clearance and 27 (18.2%) developed chronic HBV.
- Of these 27 with a chronic HBV infection, 7 (25.9%) were HBsAg negative while HBV-DNA positive at their last visit

	Compared to standard clearance			
	Delayed clearance, n=15		Chronic HBV, n=27	
	OR (95%CI)	P-value	OR (95%CI)	P-value
Female	1		1	
Male	0.5 (0.2-1.7)	0.27	0.9 (0.3-2.5)	0.33
Western	1		1	
Non-Western	1.0 (0.1-8.8)	0.99	1.1 (0.2-5.8)	0.88
MSM	1		1	
PWUD	0.7 (0.2-2.0)	0.47	2.2 (0.9-5.6)	0.10
HIV- / HCV-	1	0.05	1	<0.01
HIV +	1.4 (0.3-5.7)		1.4 (0.3-5.7)	
HCV +	0.5 (0.1-2.3)		1.5 (0.5-5.0)	
HIV + /HCV +	5.8 (1.2-28.9)		13.0 (3.1-54.6)	
19-<29	1	0.05	1	<0.001
29-34	0.2 (0.1-1.0)		0.1 (0.04-0.4)	
>34	0.5 (0.1-1.7)		0.1 (0.03-0.4)	

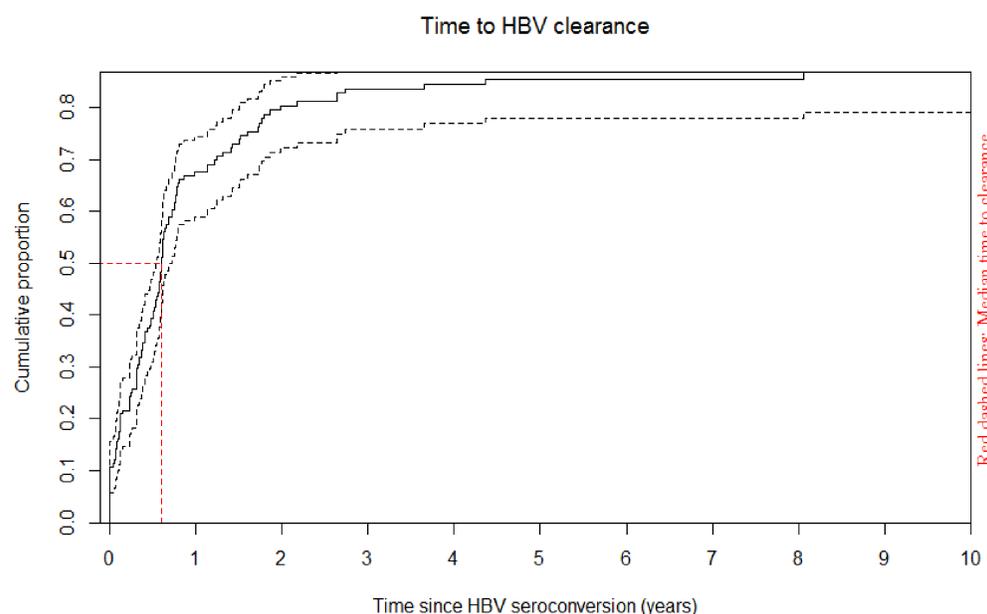


Figure: Time to HBV clearance since HBV seroconversion among MSM and PWUD participating in the Amsterdam Cohort Studies

## Conclusions

- A substantial proportion of MSM and PWUD categorized as having a chronic HBV infection after 6 months of HBV seroconversion, were able to spontaneously clear HBV thereafter.
- HIV/HCV-coinfected individuals have a higher risk to delayed clearance and chronic HBV.
- Older individuals have a lower risk to develop a chronic HBV infection.
- 25.9% of individuals with a chronic HBV infection, lost HbsAg over time while remaining HBV DNA positive.
- These findings should be incorporated in HBV screening and follow-up guidelines for these key populations.