

# Lack of Compliance to Hepatocellular Carcinoma (HCC) Screening Guidelines in Hepatitis B (HBV) or C (HCV) Virus co-infected with HIV Patients with Cirrhosis

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## Background

The incidence of hepatocellular carcinoma (HCC) in HBV or HCV HIV-co-infected patients is increasing possibly due to an increase in the prevalence of cirrhosis.<sup>1</sup> Since 2005 guidelines recommend HCC screening by ultrasonography every 6 months in patients with cirrhosis.<sup>2-5</sup>

## Aim

We assessed compliance with HCC screening guidelines in HBV and HCV HIV-co-infected patients with cirrhosis.

## Methods

Patients with cirrhosis and HCV or HBV HIV-co-infection from 4 cohorts from The Netherlands, France, Austria and Italy participating in the COHERE collaboration ([www.CoHERE.org](http://www.CoHERE.org)) were followed between 1 January 2005 and 1 January 2015.

HBV co-infection was defined as being HBsAg positive and HCV co-infection as HCV antibody-positivity.

Assessment of liver cirrhosis was based on a) clinical diagnosis reported in the chart, b) liver biopsy, c) fibroscan result (>11.8 kPa for HBV and >12.6 kPa for HCV), or d) APRI-score >2.0.

Compliance to HCC screening guidelines was defined as at least one ultrasound every 6.5 months (during follow-up time). Generalized estimating equation (GEE) models adjusted for repeated measurements were fitted to determine the predictors of the lack of compliance to HCC screening guidelines.

Sensitivity analyses were conducted, in which:

- patients with a cirrhosis assessment using APRI-score were excluded;
- the allowed time in between ultrasounds was extended to 9 and 12 months.

## Results

Table 1. Demographic characteristics

Total	N	1743
<b>Cohort</b>	AHIVCOS (%)	327 (19)
	ATHENA (%)	763 (44)
	HEPAVIH (%)	337 (19)
	HSR (%)	316 (18)
<b>Age at cirrhosis diagnosis</b>	Years, median (IQR)	43 (36-48)
<b>Gender</b>	Male/Female (%)	1387/356 (80/20)
<b>Region of origin</b>	Western (%)	1451 (83)
	Sub Saharan Africa (%)	131 (8)
	Other (%)	161 (9)
<b>Transmission route of HIV</b>	IDU (%)	772 (44)
	MSM (%)	555 (32)
	Heterosexual (%)	246 (14)
	Other (%)	69 (4)
	Unknown (%)	101 (6)
<b>Hepatitis co-infection</b>	HCV (%)	1306 (75)
	HBV (%)	320 (18)
	HCV&HBV (%)	117 (7)
<b>Use of cART</b>	N (%)	1676 (96)
<b>Follow up time in years</b>	Median (IQR)	6.2 (3.7-9.7)
<b>Cirrhosis diagnosis</b>	Chart / Fibroscan / Liver biopsy (%)	646 (37)
	Chart (%)	563 (87)
	Liver biopsy (%)	12 (2)
	Fibroscan (%)	71 (11)
	Apri-score > 2.0 (%)	1097 (63)

Figure 1. Compliance to HCC screening  $\leq 6.5$  months varied between 3% (2005) and 7% (2007-2010).

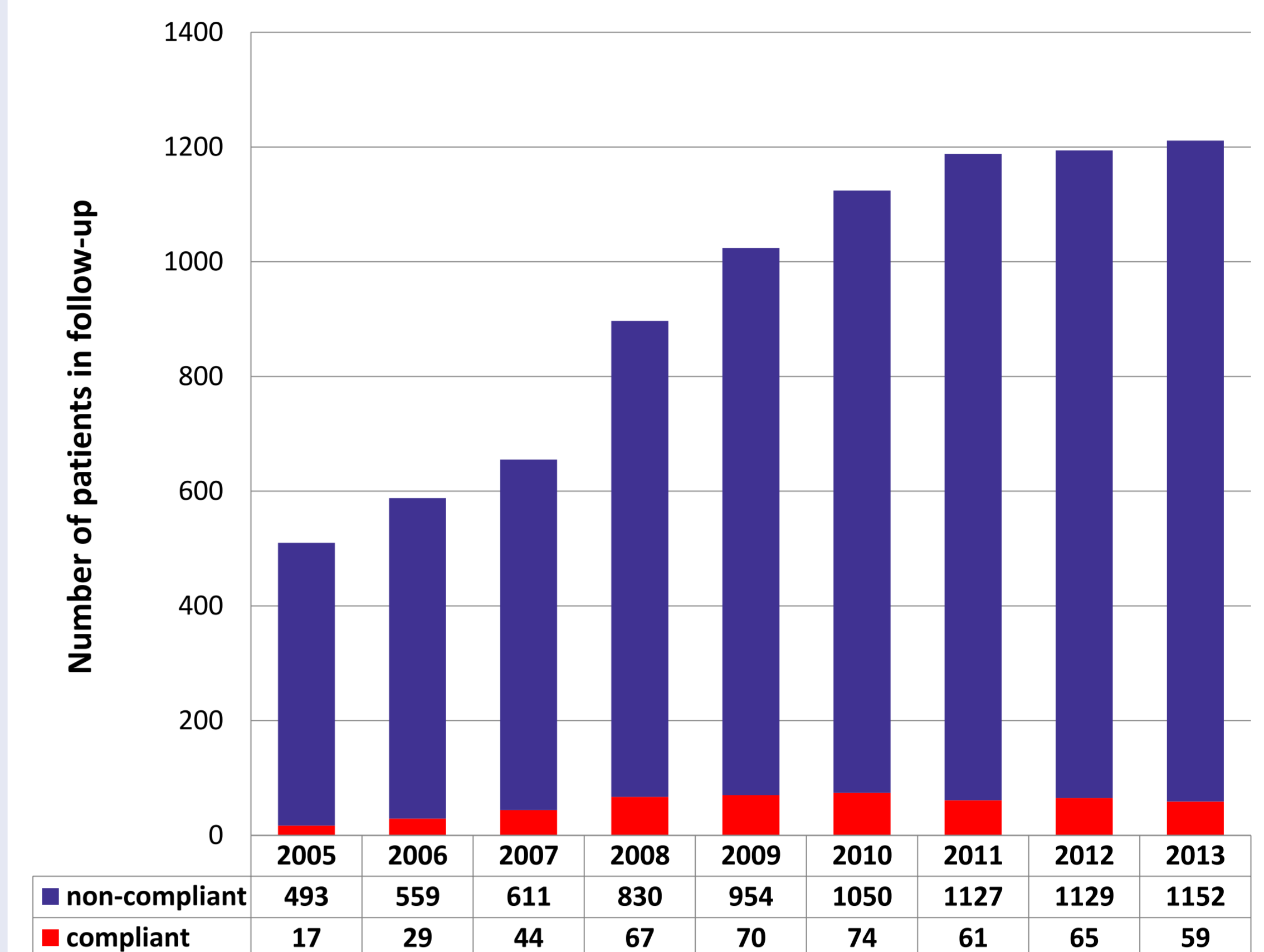
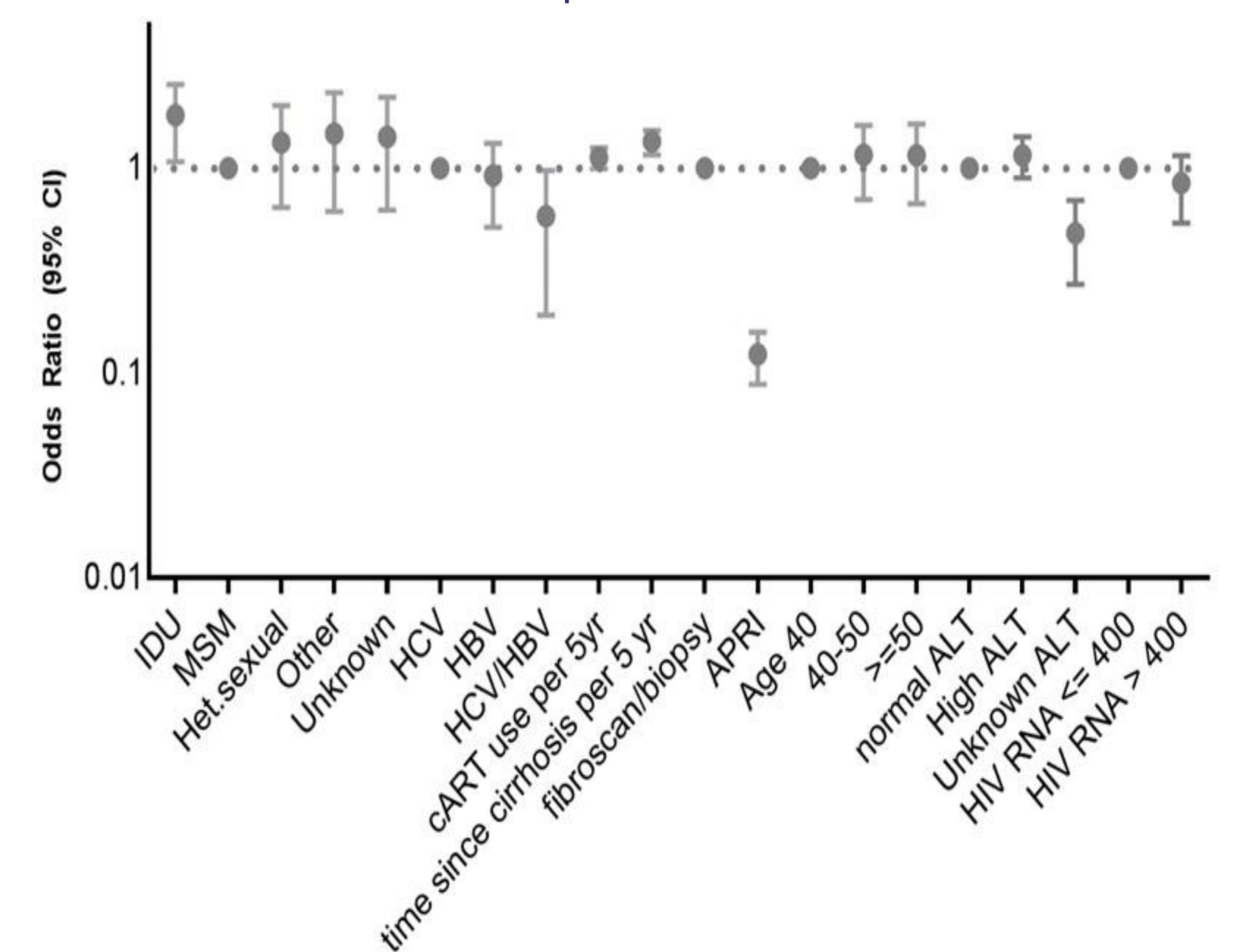


Figure 2. Adjusted odds ratios for compliance to HCC screening ( $\leq 6.5$  months between two ultrasounds).

In multivariate analysis, longer cumulative combination antiretroviral therapy (cART) use, longer time since diagnosis of cirrhosis and injecting drug use (IDU) were associated with a higher compliance. Lack of ALT measurements, assessment of cirrhosis by APRI score and HBV+HCV co-infection were associated with a lower compliance.



## Sensitivity analyses

If all patients with cirrhosis assessment using APRI-score were excluded, HCC screening compliance increased and varied between 5% in 2005 and 18% in 2008. If screening intervals were increased to 9 and 12 months, compliance varied between 4% and 11% with 9 months interval and between 4% and 15% for the 12 months interval.

## Conclusions

Compliance with HCC screening recommendations in at-risk HBV and/or HCV HIV-co-infected patients is low in Europe. In the light of an aging population and subsequently an increasing prevalence of liver cirrhosis this is a situation that needs to be addressed urgently.

## References

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