

Factors associated with decrease in liver stiffness in patients with liver cirrhosis enrolled in ANRS CO13 HEPAVIH cohort

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Background

- A sustained virological response (SVR) to anti-HCV treatment is reported to have a favorable impact on the HCV disease course in mono-infected patients but its effect in HIV/HCV co-infected patients, especially those with advanced liver disease, has not been fully elucidated.

Objectives

- To evaluate the effect of sustained virological response (SVR) on regression of liver stiffness measured by Fibroscan in cirrhotic HIV/HCV co-infected patients who received anti hepatitis C treatment.
- To determine factors associated with a decrease of liver stiffness in HIV/HCV co-infected cirrhotic patients.

Patients

- HIV/HCV co-infected patients enrolled in the ANRS CO13 HEPAVIH cohort:
 - Who received at least one dose of anti-HCV treatment and with a documented sustained virological response (SVR) status,
 - With pre-treatment liver cirrhosis, defined as an elastometry value (measured by Fibroscan) ≥ 12.5 kPa,
 - With at least one elastometry value after anti-HCV treatment,
 - Without any liver transplantation or cirrhosis decompensation before treatment.

Methods

The time to

- the first decrease of at least 30% in liver stiffness
- the first change in Metavir score from F4 to F3 or less

was assessed by Kaplan-Meier curves and analysed by adjusted Cox proportional Hazards models.

Patients were censored if they died or were lost to follow-up, or otherwise at their last available elastometry value.

Results

Thirty-five patients were included, among them 18 experienced SVR.

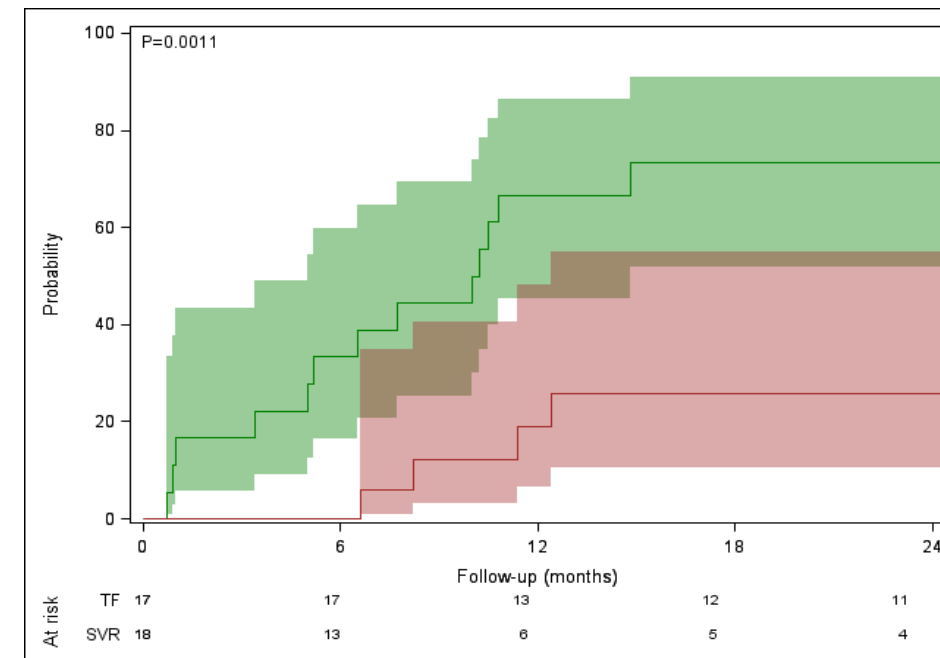
Table 1: Patients characteristics at anti-HCV treatment initiation

	HCV treatment failure N=17	HCV SVR N=18
Age (years)	45 (44-48)	47 (43-53)
Male sex	13 (76)	14 (78)
HCV Genotype 1 or 4	13 (76)	15 (83)
HIV-RNA <50 copies/mL (n=29)	10 (83)	17 (100)
CD4 (/mm ³) (n=29)	432 (318-491)	239 (159-316)
Time on cART (years) (n=34)	12.8 (9.3-16.3)	11.9 (8.5-14.0)
Duration of HCV infection (years) (n=28)	26 (19-29)	26 (19-30)
Excessive alcohol consumption* (n=27)	1 (8)	0 (0)
HCV RNA log ₁₀ (IU/mL)	6.1 (5.8-6.4)	6.2 (5.0-6.8)
Pre-treatment elastometry value (kPa)	16.8 (14.9-28.5)	16.9 (14.6-24.2)

* More than 2 glasses/day for women and more than 3 glasses/day for men. Results are presented in n (%) for qualitative variables and median (IQR) for quantitative variables.

- The cumulative Kaplan-Meier estimates for a 30% regression in Fibroscan values in these cirrhotic patients were 67% (95%CI: 45-86) in those with SVR and 19% (95%CI: 6-48) in those without SVR at one year (Figure 1).

Figure 1: Cumulative probability of at least 30% decrease in liver stiffness



Patients with sustained virological responses are depicted in green and other patients in red. Solid lines represent point estimates, and uncertainty bands depicted in light green and light red represent 95% confidence intervals.

- Cumulative Kaplan-Meier estimates for a change in the Metavir stage from F4 to <F3 were 56% (95%CI: 35-78) in patients with SVR and 12% (95%CI: 3-41) in patients without SVR at one year (Figure 2).
- In an adjusted analysis, SVR was independently associated with a higher likelihood of achieving both a $\geq 30\%$ decrease in liver stiffness (HR=8.21, 95%CI: 2.15-31.34, $P=0.0021$; Table 2) and at least a one-stage reduction in Metavir status (HR=4.5, 95%CI: 1.2-16.9, $P=0.0244$).

Figure 2: Cumulative probability of decrease of at least one Metavir stage

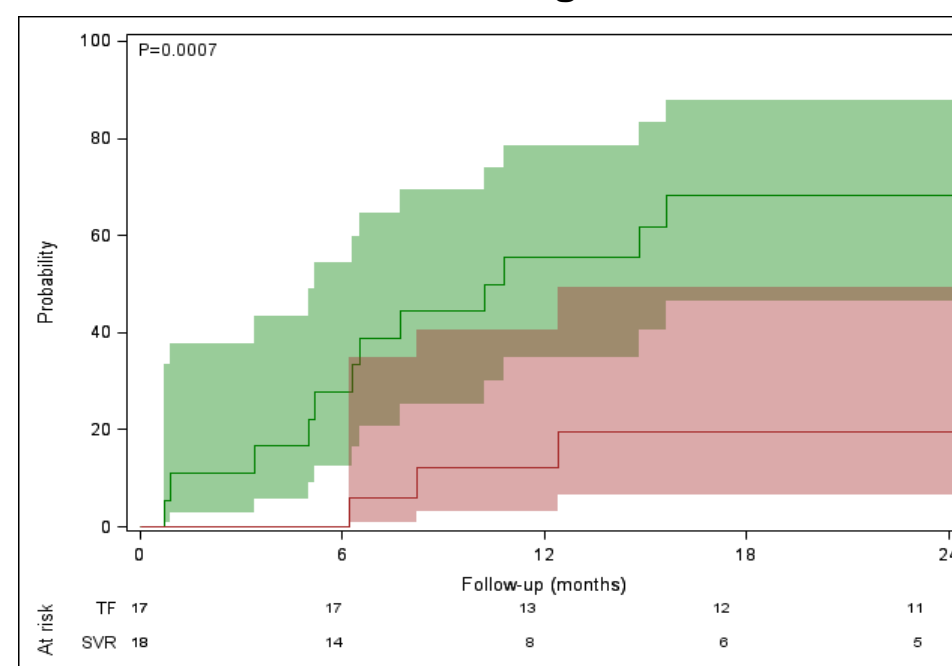


Table 2: Adjusted analysis of factors associated with at least 30% in elastometry values

At least -30% (35 patients, 20 events*)		
Characteristic	HR (95%CI)	P
SVR status (yes vs no)	8.208 (2.150-31.340)	0.0021
Sex (female vs male)	2.177 (0.685-6.913)	0.1871
Age (years)	1.028 (0.956-1.106)	0.4549
Pretreatment Fibroscan (kPa)	1.082 (1.024-1.144)	0.0054
AST (IU/mL)	0.983 (0.960-1.007)	0.1590

*event: at least a 30% reduction in Fibroscan value after treatment. Abbreviations: SVR, sustained virological response; AST, aspartate transaminase.

Conclusion

- In conclusion, therapeutic eradication of HCV induces rapid and durable regression of liver stiffness even in patients with cirrhosis.
- Longer follow-up is needed to see whether this decrease in liver stiffness is correlated with a decrease in fibrosis regression and of the risk of hepatocellular carcinoma, even in patients with advanced disease and decompensated cirrhosis.

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