IAS2023: 1904

Liver fibrosis regression measured by transient elastography in people living with HIV successfully treated for hepatitis C using direct acting antivirals

J. Young[1], S. Wang[1], R. Sacks-Davis[2], A. Stewart[2], D. Van Santen[2], M. van der Valk[3], J. Doyle[2], G. Matthews[4], J. Berenguer[5], L. Wittkop[6], K. Lacombe[7], A. Rauch[8], M. Stoove[2], M. Hellard[2], M. Klein[1]
[1]Research Institute of the McGill University Health Centre, Montreal, Canada, [2]Burnet Institute, Melbourne, Australia, [3]Amsterdam University Medical Centre, Amsterdam, Netherlands, [4]The Kirby Institute, Sydney, Australia, [5]Gregorio Marañón General University Hospital, Madrid, Spain, [6]Inserm Research Center Bordeaux Population Health, Bordeaux, France, [7]Sorbonne University, Paris, France, [8]Bern University Hospital, Bern, Switzerland

Category: B3: Co-infections (including opportunistic infections)

Country of research: Canada

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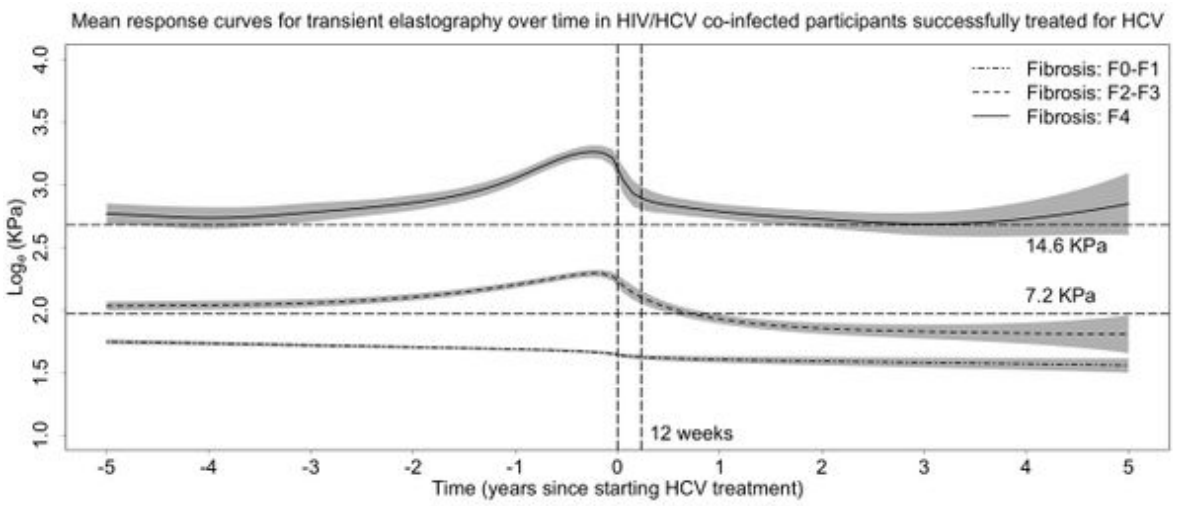
Background: Successful treatment for hepatitis C virus (HCV) reduces liver fibrosis. Transient elastography (TE) has been shown to capture true fibrosis regression after successful HCV treatment, once inflammation abates. It is not clear how fibrosis regression changes with time after treatment ends.

Methods: We used data from eight of 11 cohorts in the International Collaboration on Hepatitis C Elimination in HIV Cohorts (InCHEHC), including data from Australia, Canada, France, the Netherlands, Switzerland and Spain. We selected individuals successfully treated for a primary HCV infection using all oral direct acting antivirals and with at least one TE measured within a year prior to starting treatment. This baseline measurement was used to classify fibrosis stage (F0-F1<7.2, F2-F3≥7.2-<14.6, F4≥14.6 KPa). For those selected, all TE measurements after successful treatment were included in our generalised additive modelling, provided HCV RNA remained undetectable. Our model included a random intercept allowing repeated measures from the same individual and an adaptive spline representing the change in mean over time.

Results: TE measurements were included from 1714 individuals; 513 had a measurement after treatment ended (220 F0-F1, 202 F2-F3, 91 F4) with a median follow-up of 0.8 years. For those with advanced fibrosis (F2-F3) or cirrhosis (F4), the mean response shows a rapid decline in stiffness during treatment as inflammation abates (Figure). Those with advanced fibrosis then regress towards normal (F0-F1) with the mean response falling below 7.2KPa; those with cirrhosis show early fibrosis regression but this attenuates (Table) and the mean never approaches normal.



Change in KPa (95% credible interval)		Fibrosis stage when starting treatment	
Period	F0-F1 <7.2KPa	F2-F3 ≥7.2-<14.6 KPa	F4 ≥14.6 KPa
1.5 to 0.5 years before treatment starts	-0.1 (-0.2 to -0.1)	1.1 (0.8 to 1.4)	6.5 (4.8 to 8.2)
0.5 to 1.5 years after treatment ends	-0.1 (-0.1 to 0.0)	-0.7 (-1.0 to -0.4)	-1.2 (-2.5 to 0.1)
1.5 to 2.5 years after treatment ends	-0.1 (-0.1 to 0.0)	-0.2 (-0.5 to 0.0)	-0.7 (-1.7 to 0.4)
2.5 to 3.5 years after treatment ends	-0.1 (-0.1 to 0.0)	-0.1 (-0.4 to 0.2)	0.3 (-1.0 to 1.6)

Conclusions: Successful HCV treatment leads to meaningful fibrosis regression in those with advanced fibrosis. Those with cirrhosis do not fully recover and need continued surveillance.

Ethical research declaration: Yes

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