

Detecting HCV infection by means of mass population SARS-CoV-2 screening: A pilot experience in Northern Italy

To the Editor:

We read with interest the paper by Crespo *et al.*, who suggested that mass severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) testing offers a unique opportunity to screen for viral hepatitis, particularly HCV infection.¹

As the COVID-19 pandemic has overwhelmed entire national healthcare systems and severely strained their ability to manage patients with chronic diseases, such as those with chronic viral hepatitis,² we agree that access to screening programmes and subsequent linkage to care would possibly turn the challenges of the pandemic into new opportunities.

Mass serological SARS-CoV-2 screening has been capable of revealing the spread of the disease in Europe.³ After our first successful attempt at using rapid immunochromatographic testing (RICT) to screen for SARS-CoV-2 antibodies in Castiglione d'Adda, an area of early viral circulation in Northern Italy,⁴ we not only extended the programme to 5 other towns in Lombardy, but also included rapid HCV screening in 3: San Pellegrino Terme (4,840 inhabitants) and Suisio (3,828 inhabitants) in the province of Bergamo north-east of Milan, and Sordio (3,429 inhabitants) in the province of Lodi south-east of Milan. With the full support and

collaboration of the local authorities, all of the inhabitants of these 3 towns were invited to undergo voluntary screening in suitably adapted, publicly owned buildings (schools and sports centres) at the beginning of August (Suisio), the end of September (Sordio), or between the end of October and mid-November (San Pellegrino Terme). After giving their informed consent, they underwent RICT for SARS-CoV-2 antibodies (PrimaLab COVID-19 IgG/IgM Rapid Test, Balerna, Switzerland in Suisio; Technogenetics Rapid Test COVID-19 IgM/IgG, Milan, Italy in Sordio and San Pellegrino Terme), and those aged >50 years (or younger if they explicitly requested it) underwent RICT for HCV antibodies (Meridian Bioscience OraQuick HCV-Rapid Antibody Test Cincinnati, OH, USA). They also completed a questionnaire to ascertain whether they were aware of a previous HCV infection.

A total of 5,152 individuals (42.6% of the inhabitants of the 3 towns together) underwent SARS-CoV-2 screening, and almost half of these (n = 2,505, 48.6%) also underwent HCV screening, including 79.3% of those aged >50 years. Table 1 shows the results of the HCV tests: 72 individuals (2.9%, 95% CI 2.3–3.6%) were positive for HCV antibodies (ranging from 2.1% [95% CI 1.1–3.6%] in Sordio to 3.4% [95% CI 2.4–4.6%] in San Pellegrino

Table 1. Characteristics of individuals screened for SARS-CoV-2 and HCV antibodies by HCV findings.

	All screened for SARS-CoV-2-Ab, n = 5,152	Tested for HCV, n = 2,505 (48.6%)	HCV-Ab positive, n = 72 (2.9%)	HCV-Ab negative, n = 2,433 (97.1%)
	n (%) or median (IQR)	n (%) or median (IQR)	n (%) or median (IQR)	n (%) or median (IQR)
Town (residence, domicile, or workplace)				
Suisio	1,126 (21.9)	735 (29.3)	20 (27.8)	715 (29.4)
Sordio	1,393 (27.0)	585 (23.4)	12 (16.7)	573 (23.6)
San Pellegrino Terme	2,633 (51.1)	1,185 (47.3)	40 (55.6)	1,145 (47.1)
Age (years)	50 (34–65)	61 (53–71)	63.5 (56–75)	61 (52–71)
Males	2,350 (45.6)	1,118 (44.6)	37 (51.4)	1,081 (44.4)
Morbidities				
Smoking	919 (17.8)	428 (17.1)	16 (22.2)	412 (16.9)
Cardiovascular disease	1,314 (25.5)	957 (38.2)	32 (44.4)	925 (38.0)
Rheumatic diseases	250 (4.9)	165 (6.6)	10 (13.9)	155 (6.4)
Diabetes mellitus	242 (4.7)	183 (7.3)	10 (13.9)	173 (7.1)
Chronic lung diseases	364 (7.1)	177 (7.1)	8 (11.1)	169 (6.9)
Oncological diseases	248 (4.8)	173 (6.9)	7 (9.7)	166 (6.8)
Onco-hematological diseases	38 (0.7)	26 (1.0)	1 (1.4)	25 (1.0)
Solid neoplasms	214 (4.2)	150 (6.0)	6 (8.3)	144 (5.9)
Ever tested for HIV		644 (25.7)	23 (31.9)	621 (25.5)
HIV positive		6 (0.2)	2 (2.8)	4 (0.2)
HCV risk factors				
Piercings or tattoos		115 (4.6)	7 (9.7)	108 (4.4)
Ever received blood transfusions		114 (4.6)	11 (15.3)	103 (4.2)
Ever had sexual intercourse without a condom		8 (0.3)	2 (2.8)	6 (0.2)
Intravenous drug use		0 (0.0)	0 (0.0)	0 (0.0)

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Terme). Fewer than half (46.1%) of these were aware of their serostatus.

On the basis of historical data, the overall seroprevalence of HCV in Italy is about 2% (1.6–7.3%), with the vast majority of infections reported in individuals aged >60 years, and an increasing gradient from northern to southern Italy.⁵ The 2.9% seroprevalence observed in our study is similar to estimates made on the general population of northern Italy about 20 years ago (3.3%).⁶

The fact that 53.9% of the HCV-positive individuals were unaware of their serostatus may seem high but it is lower than the estimated 66% reported by a European study in 2015.⁷

The limitations of this study include the absence of simultaneous HCV-RNA testing, although all of the positive individuals were counselled and given prescriptions for diagnostic investigations (including HCV-RNA testing) and subsequent linkage to care. Unfortunately, due to the limited time available, the questionnaire ascertained only whether participants were aware of a previous HCV infection, while no information regarding previous HCV treatments was recorded among those who tested positive. Secondly, the reported sensitivity and accuracy of the test in a low prevalence setting⁸ may have led to false negative results as 11 of the individuals who tested negative reported a previously treated HCV infection. On the other hand, this is not a surprising finding given the well-known time-dependent reduction in HCV antibodies after HCV eradication.⁹

Our findings revealed a fair number of HCV infections in people who were unaware of their serostatus, thus suggesting that rapid HCV testing in the context of SARS-CoV-2 screening programmes is a further means of achieving the WHO's 2030 HCV elimination target.¹⁰ If successful, other screening programmes for communicable diseases such as HIV infection could benefit from the same strategy.

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Conflict of interest

AG has received consultancy fees from Mylan, and educational and grant support from Gilead. MG has received grants and fees for speaker bureaux, advisory boards and CME activities from BMS, ViiV, MSD, AbbVie, Gilead, Janssen and Roche. GP, FC and CB have nothing to declare.

Please refer to the accompanying ICMJE disclosure forms for further details.

Authors' contribution

All of the authors were involved in writing the manuscript, have approved the final version as submitted, and have agreed to be accountable for all aspects of the work.

Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jhep.2020.12.026>.

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