Screening for hepatitis C at the emergency department: should baby boomers also be screened in Belgium?

LCRP | Limburg Clinical Research Program

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EASL The Home of Hepatology | THE INTERNATIONAL LIVER CONGRESS™ 2018 APRIL 11-15, PARIS, FRANCE

INTRODUCTION

- Hepatitis C virus (HCV) is one of the major causes of chronic liver disease and liver cancer worldwide.[1]
- Prevalence of hepatitis C virus (HCV) antibody (Ab) in Belgium is estimated to be 0.87%.[2]
- There are no studies about HCV RNA prevalence in Belgium.
- Several studies worldwide have reported high rates of HCV Ab prevalence at emergency departments ranging from 2.4% in France[3] to 18.0% in the USA[4].
- CDC recommendation: adults born from 1945-1965 (Baby Boomers) should be tested for Hepatitis C.

AIM

- To study the prevalence of HCV in an emergency department of a mixed city-rural area (Middle Limburg) in Belgium.
- To evaluate the effectiveness of risk-based screening and the need to screen an age-based cohort in Belgium.

METHOD

- A single-centre cross-sectional study was conducted between January and December 2017.
- Study procedure (Fig. 1):
  - Questionnaire that assessed demographics, known viral hepatitis C status, and risk factors.

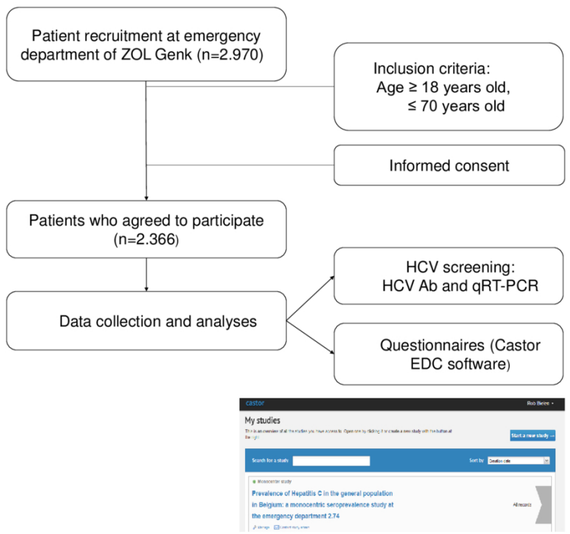
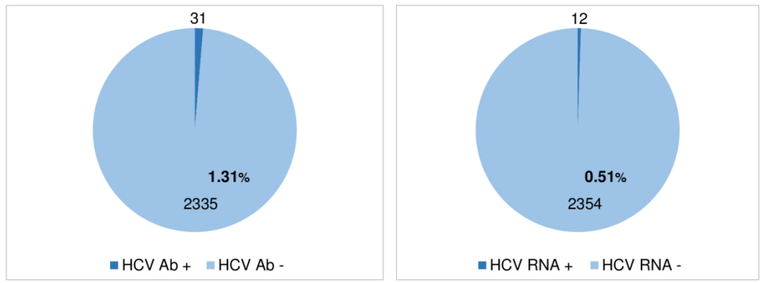


Figure 1. Flowchart of the study

RESULTS



- **11** (35.5%) newly diagnosed
- **10** (32.3%) cured by treatment
- **9** (29.0%) spontaneous clearance
- **1** new diagnosis per **215** tests

- **5** (41.7%) newly diagnosed
- **2** (16.7%) treatment experienced
- **0** were in follow-up at gastro-enterology units
- **1** new diagnosis per **473** tests

Figure 2. Prevalence of HCV at the emergency department in Belgium

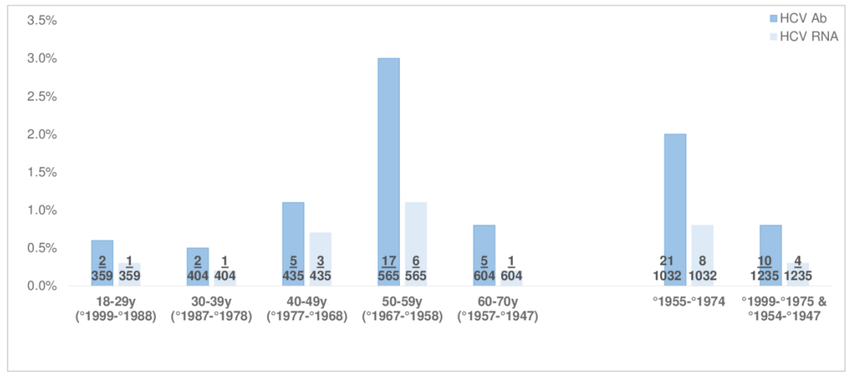


Figure 3. Prevalence of HCV according to birth cohort groups.

Table 1. Parameters significantly associated with HCV Ab prevalence. (*Fisher's Exact Test*)

Parameter	*p*-value	Crude OR	(95% C.I.)
Birth cohort (°1955-°1974 vs. other)	**.028**	2.307	1.048 ; 5.356
Gender	**.029**	2.418	1.039 ; 6.280
Age by gender (°1955-°1974 vs. other)	**.013**		
Other (m)		1.497	0.436 ; 5.137
1955-1974 (f)		1.295	0.322 ; 5.204
1955-1974 (m)		4.270	1.419 ; 12.848
Drug use	**< .001**		
NIDU		6.944	2.496 ; 19.318
IDU		356.833	126.901 ; 1003.379
Tattoo	**.005**	2.806	1.294 ; 6.186
Tattoo hygiene	**< .001**	7.741	3.066 ; 17.968
HBV infection	**.002**	16.487	2.900 ; 63.150
Household HCV infection	**.010**	4.384	1.287 ; 11.944
Imprisonment	**< .001**	24.453	11.029 ; 55.135
Birth country	**.001**		
High endemic		18.040	4.814 ; 67.602
Low endemic		0.746	0.282 ; 1.972

Table 2. Parameters associated with HCV Ab prevalence. (*Final unweighted model)*

	Estimate	Std. error	p-value	Crude OR	Adjusted OR (95% CI)
(intercept)	-6.550	0.715	<.001		
Male, other	0.555	0.760	.465	1.497	1.743 (0.416 ; 8.732)
Female, 1955-1974 cohort	0.636	0.865	.462	1.295	1.889 (0.338 ; 10.906)
Male, 1955-1974 cohort	**1.693**	**0.718**	**.018**	**4.270**	**5.437 (1.468 ; 25.762)**
Drug use, NIDU	**2.191**	**0.572**	**<.001**	**6.944**	**8.940 (2.768 ; 27.165)**
Drug use, IDU	**5.978**	**0.582**	**<.001**	**356.833**	**394.489 (131.624 ; 1316.141)**
HBV coinfection	**2.010**	**1.009**	**.037**	**16.487**	**8.163 (0.929 ; 49.083)**
Birth country, high endemic	**3.763**	**0.770**	**<.001**	**18.040**	**43.096 (8.165 ; 182.411)**
Birth country, low endemic	-0.086	0.607	.888	0.746	0.918 (0.251 ; 2.827)

Table 3. Parameters associated with HCV Ab prevalence. (*Final weighted model)*

	Estimate	Std. error	*p*-value	Crude OR	Adjusted OR (95% CI)
(intercept)	-5.608	0.366	<.001		
Drug use, NIDU	**1.391**	**0.646**	**.031**	**6.944**	**4.018 (1.133 ; 14.248)**
Drug use, IDU	**5.004**	**0.648**	**<.001**	**356.833**	**148.950 (41.833 ; 530.355)**
Imprisonment	**1.382**	**0.574**	**.016**	**24.453**	**3.984 (1.293 ; 12.271)**
Birth country, high endemic	**3.547**	**0.898**	**<.001**	**18.040**	**34.703 (5.968 ; 201.799)**
Birth country, low endemic	0.025	0.633	.969	0.746	1.025 (0.296 ; 3.545)

CONCLUSIONS

- People who use drugs **should** be screened.
- People immigrating from countries with high endemic HCV prevalence **should** be screened.
- People **should** be screened in prisons.
- Age based screening **could** be offered to males born in the 1955-1974 cohort.

REFERENCES

1 **de Oliveria Andrade LJ**, D'Oliveira A, Melo RC, De Souza EC, Costa Silva CA, Paraná R. Association Between Hepatitis C and Hepatocellular Carcinoma. Journal of Global Infectious Diseases. 2009;1(1):33-7.
2 **Beutels M et al.** Prevalence of hepatitis A, B and C in the Flemish population. Eur J Epidemiol. 1997;13(3):275-80,
3 **Capron D et al.** Hepatitis C virus infection risk factors in patients admitted in hospital emergency departments in Picardy. Value of oriented screening based on recommendations of the 'Direction Générale de la Santé'. Eur J Gastroenterol Hepatol. 1999;11(6):643-8.
4 **Kelen GD et al.** Hepatitis B and hepatitis C in emergency department patients. N Engl J Med. 1992;326(21):1399-404.

ACKNOWLEDGEMENTS

This research is part of the Limburg Clinical Research Program supported by Limburg Sterk Merk (LSM), UHasselt, the hospitals ZOL and Jessa, and the Flemish and Limburg governments through the Strategic Action Plan Limburg in the Kwadraat (SALK).