
Increase of sexually transmitted hepatitis C virus in HIV+ men who have sex with men in Barcelona, Spain. A problem linked to HIV infection?

S. Manzanares-Laya¹, P. García de Olalla^{1,2}, C. Garriga^{1,3}, J. Quer^{4,5}, P. Gorrindo¹, S. Gómez¹, F. Rodríguez-Frias^{5,6}, V. Plasencia⁷, D. Carcia-Cehic^{4,5}, J. Gregori^{4,5}, R. Solà⁸, M.J. Barberà⁹, J.I. Esteban^{4,5}, J.A. Cayla^{1,2}

1. Epidemiology Service. Public Health Agency of Barcelona, Barcelona
2. Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP), Madrid
3. Field Epidemiology Training Program, National Center for Epidemiology, Carlos III Health Institute, Madrid
4. Liver Unit, Vall d'Hebron Institut de Recerca-Hospital Universitari Vall d'Hebron, Barcelona
5. Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Instituto de Salud Carlos III, Madrid
6. Biochemistry and Microbiology Unit. Hospital Universitari Vall d'Hebron, Barcelona
7. Catalunya Reference Laboratory
8. Hospital del Mar, Barcelona
9. Sexually Transmitted Infections Unit, Barcelona

INTRODUCTION

- Increase of acute hepatitis C virus (HCV) infections reported amongst men who have sex with men (MSM) in the last decade
- Europe, North America and Australia
- Higher incidence in HIV infected cases (also more follow up)

OBJECTIVES

The main objective is to assess the trend of HCV cases in MSM in Barcelona from 2007 to 2013

Secondary objectives are:

- to describe the HCV incidence from 2007 to 2013
- to analyze risk exposures amongst HCV cases in 18-59 old men in Barcelona amongst 2007-2011 & 2012-2013 periods
- to analyze the demographic and clinical characteristics of cases MSM and their risk practices

METHODS

Acute HCV Case definition:

Hep symptoms. Recent seroconversion, anti-HCV+, PCR-RNA+

Place and time period:

Cases living in the city of Barcelona, during 2007-2013

Source of information:

Registry of mandatory reporting diseases of Barcelona
Retrospective and active search of cases since 2012

Outbreak detection (january 2013) → General epidemiological surveys and focused interviews

METHODS

- Trend analyses for acute HCV incidence per 100.000 inhabitants, according to sex from 2007 to 2013 (linear Chi²)
- Descriptive analyses among men cases aged 18-59, (periods 2007-2011 vs 2012-2013) of the variables:
 - Mean age (DE), country of origin (N[%])
 - Risk exposure in last 6 months (N[%]) → sexual (MSM) and non-sexual. Non sexual classified as:
 - Intravenous drug use
 - Surgery, invasive treatments, diagnostic tests
 - Others, tattoos, piercings and acupuncture

METHODS Detection of MSM-HCV outbreak (2012-2013)

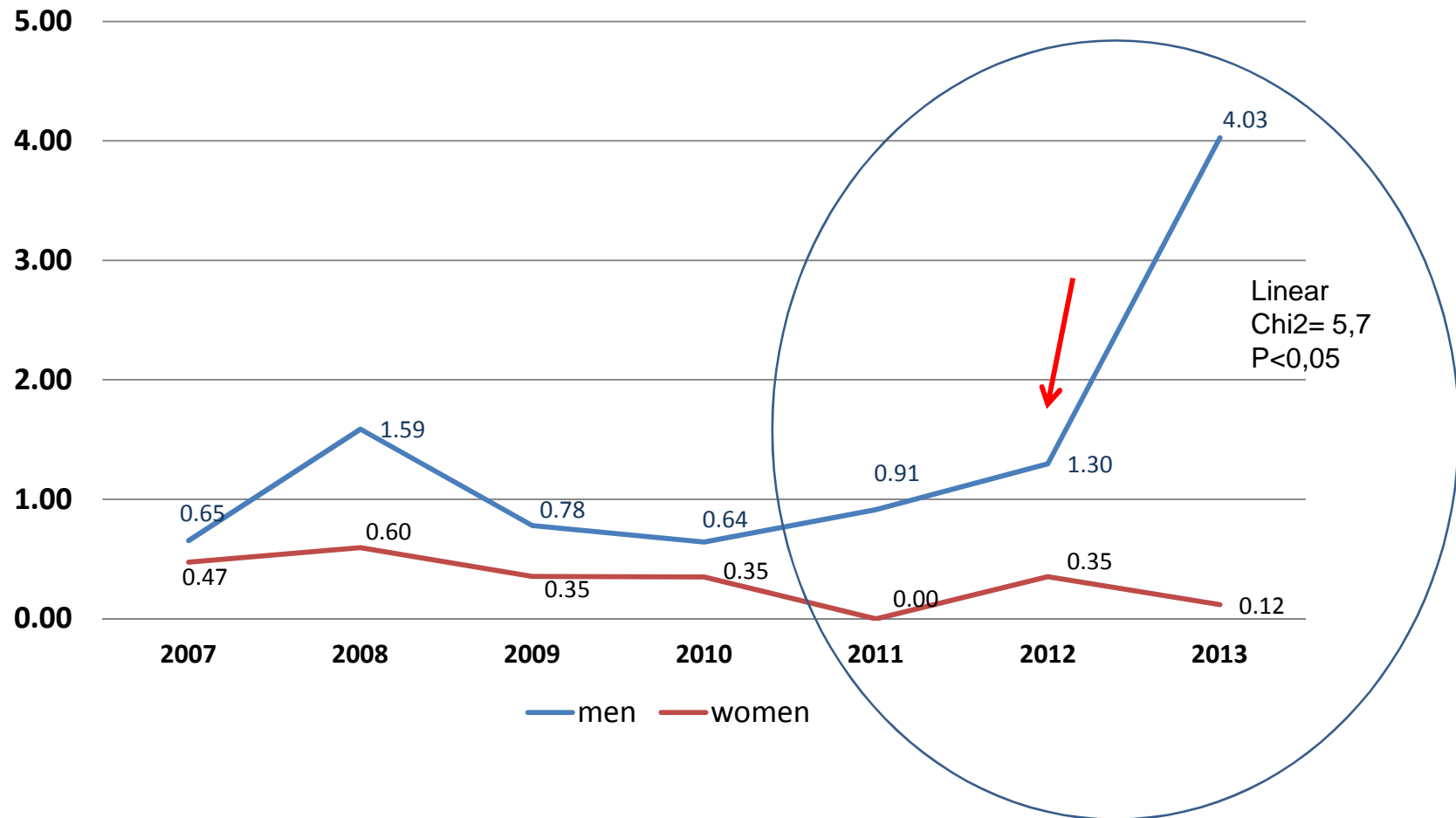
Distribution (N[%]) according to:

- trimester and year
 - clinical symptoms of acute hepatitis
 - age group (18-24; 25-34; 35-44; 45-54; >54)
 - years between HIV-HCV infection (<1; 1-2; 3-5; 6-10; 11-15; > 15)
-
- Sexual risk practices were also analysed (e.g fisting, unprotected sex) (N[%])

METHODS Laboratory analyses

- High resolution HCV subtyping with massive sequencing by using 454/GS-Junior platform
- Preliminary phylogenetic → study of E2PePhD highly variable region and NS5B to assess any associations amongst cases

RESULTS Incidence trend per 100,000 according to sex. Barcelona, 2007 to 2013



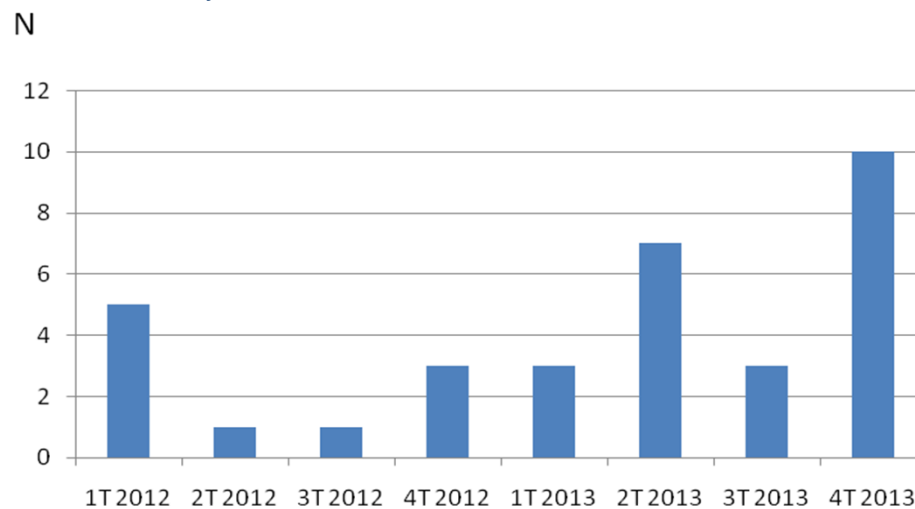
RESULTS

Epidemiologic features & risk exposure in HCV acute cases among men aged 18-59, 2007-2011 vs 2012-2013

		2007-2011	2012-2013	
		N (%)	N (%)	P value
Age (Mean[ED])		41,0 [12,0]	40,3 [8,2]	0,780
Country of origin: Spain		16 (55,2)	17 (45,9)	0,457
Type of non sexual risk exposure				
	Intravenous drug use	4 (13,8)	1 (2,6)	0,91
	Surgery, invasive treatments, diagnostic tests	12 (41,4)	0 (0,0)	<0,01
	Other: tattoo, piercing, acupuncture...	6 (20,7)	1 (2,6)	0,051
Sexual risk exposure (MSM) *		NA*	34 (87,2)	NA
Total		29	39	

RESULTS Characteristics of cases included in the BCN outbreak

Trimester and year distribution of cases. Barcelona, 2012 and 2013



Clinical distribution of cases. Barcelona, 2012 and 2013

Acute Hepatitis symptoms	N (%)
Yes	16 (47,1)
No	18 (52,9)
with recorded seroconversion	12 (66,7)
without recorded seroconversion	6 (33,4)*
Total	34 (100,0)

* With epidemiological link or elevated transaminases

RESULTS Characteristics of cases included in the BCN outbreak

Table 4. Age group distribution of cases. Barcelona, 2012 and 2013

Age group (years)	N (%)
18 - 24	2 (5,9)
25 - 34	6 (17,6)
35 - 44	14 (41,2)
45 - 54	11 (32,4)
55 or more	1 (2,9)
TOTAL	34 (100,0)

Table 5. Years between HIV and HCV infection among cases. Barcelona, 2012 and 2013

Years	N (%)
< 1	5 (17,2)
1 - 2	5 (17,2)
3 - 5	10 (34,4)
6 - 10	1 (3,4)
11 - 15	2 (6,9)
> 15	3 (10,3)
Unknown	3 (10,3)
TOTAL	29 (100,0)

RESULTS Other main outcomes in the outbreak investigation

At least:

14 (37,8%) had had anonymous sex

19 (51,4%) had had unprotected sex at least once

8 (21,6%) had practiced “fisting”

9 (24,3%) had observed blood during intercourse

18 (48,6%) had practiced sex at home

8 (21,6%) at private parties

4 (10,8%) at sauna locals

4 (10,8%) at discos or bars

RESULTS Laboratory analyses

At least:

- 14 blood samples collected
- 2 different clusters found:
 - Genotype 1a
 - Genotype 4d
- phylogenetic test ongoing

LIMITATIONS AND STRENGTHS

Limitations:

- Hepatitis C is often undiagnosed (lack of symptoms) and not all diagnosed cases are notified
- Epidemiological surveys can change over time (lack of information on sexual orientation years ago)
- Possible bias in detecting HCV among HIV patients

Strengths:

- Surveillance system
- Active search of cases was also made

CONCLUSION

- Great difference among sexes in the HVC evolution
- Increase of M/F ratio in the second period
- Increase of cases in adult men whose only risk exposure was having sexual intercourse with other men in the second period

In the ongoing outbreak:

- Elevated % of HIV-HVC co-infection. HIV was first, more than half of cases occurred with a lapse of time < 5 years
- Almost half of them were in the 35-44 age group
- Risky sexual practices are common
- Different genotypes, then different clusters

RECOMMENDATIONS

- Preventive measures to decrease transmission
- Targeted screening
- Improved surveillance

Questions...

- HIV patients have a frequent follow up and screening.
Possible bias?
- More susceptible?
- Dimensions of the problem probably unknown

Increase of sexually transmitted hepatitis C virus in HIV+ men who have sex with men in Barcelona, Spain. A problem linked to HIV infection?

S. Manzanares-Laya¹, P. García de Olalla^{1,2}, C. Garriga^{1,3}, J. Quer^{4,5}, P. Gorrindo¹, S. Gómez¹, F. Rodríguez-Frias^{5,6}, V. Plasencia⁷, D. Carcia-Cehic^{4,5}, J. Gregori^{4,5}, R. Solà⁸, M.J. Barberà⁹, J.I. Esteban^{4,5}, J.A. Cayla^{1,2}

1. Epidemiology Service. Public Health Agency of Barcelona, Barcelona
2. Centro de Investigación Biomédica en Red de Epidemiología y Salud Pública (CIBERESP), Madrid
3. Field Epidemiology Training Program, National Center for Epidemiology, Carlos III Health Institute, Madrid
4. Liver Unit, Vall d'Hebron Institut de Recerca-Hospital Universitari Vall d'Hebron, Barcelona
5. Centro de Investigación Biomédica en Red de Enfermedades Hepáticas y Digestivas (CIBERehd), Instituto de Salud Carlos III, Madrid
6. Biochemistry and Microbiology Unit. Hospital Universitari Vall d'Hebron, Barcelona
7. Catalunya Reference Laboratory
8. Hospital del Mar, Barcelona
9. Sexually Transmitted Infections Unit, Barcelona