Characteristics of undiagnosed HBV or HCV chronically infected population in France: a need for reconsidering testing


French Institute for Public Health Surveillance (InVS), Department of Infectious Diseases, Saint-Maurice, France

EASL, London, April 2014
Nothing to disclose
Background of HCV and HBV screening

- Treatment advances
- Efficient screening tests, including rapid and point of care screening tests for hard to reach populations

Effective HCV and HBV screening is essential
  - Individual benefit
  - Collective benefit

- Expanded HCV screening recommendations
  - United States: one-time HCV testing for persons born in 1945-1965
  - Canada: one-time HCV testing for persons born in 1945-1975

Grebely, Can J Gastroenterol 2013; Smith, MMWR 2012
What about HCV and HBV screening in France?

• Low endemic country (< 1%)

• Currently, French policy: risk-based screening
  ➔ Not sufficient!

• An additional population-based testing?
  ➔ Which gender?
  ➔ Which age group?

➔ Data on HCV and HBV undiagnosed population are needed

Aims

• To estimate undiagnosed HBV and HCV chronically infected population proportion, number and characteristics in France

➔ To adapt both HBV and HCV screening strategies
Methods

• National seroprevalence survey (2004)
  – random sample of ≈ 15,000 adults between 18 and 80 year-olds
  – serum samples: HCV RNA and HBsAg
  – data
    • socio-demographic characteristics
    • risk factors
    • awareness of HBV/HCV infection

• We focus on undiagnosed chronically infected
  = persons HCV RNA (+) or HBsAg (+) unaware of their status
Why are data on undiagnosed population important?

HCV chronic population

No. HCV RNA positive

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>64%</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70-80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1945-1975

1945-1965

HCV chronic undiagnosed

No. HCV undiagnosed

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70-80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1945-1975

1945-1965
The proportion of HCV undiagnosed depends on age. In 2004:

- **18-39**
  - Men: 47%
  - Women: 28%

- **40-59**
  - Men: 33%
  - Women: 17%

- **60-80**
  - Men: 67%
  - Women: 78%
Who is the HCV undiagnosed population?

100,000 of 230,000 HCV infected population (43%) are undiagnosed in 2004

<table>
<thead>
<tr>
<th>No. HCV undiagnosed</th>
<th>18-39</th>
<th>40-59</th>
<th>60-80</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-39</td>
<td>15,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-59</td>
<td>5,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-80</td>
<td></td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-39</td>
<td></td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>40-59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-80</td>
<td></td>
<td></td>
<td>45,000</td>
</tr>
</tbody>
</table>
Who is the HBV undiagnosed population?

155,000 of 280,000 HBV infected population (55%) are undiagnosed in 2004.
Is a combined strategy for HBV and HCV relevant?

82% of HBV and HCV undiagnosed.

→ one-time HBV and HCV screening for men 18-60 years?

And today?
How many undiagnosed HCV cases in 2014?

- **100,000 HCV undiagnosed 18-80 years in 2004**
- **2,000** Prevalent cases < 18 years in 2004
- **23,000 (9,000-37,000)** New infections evolving to chronicity
- **74,000 (65,000-83,000)** undiagnosed 18-80 years in 2014

- **26,000 (22,000-30,000)** Diagnoses
- **13,000** Prevalent cases > 80 years in 2014
- **12,000** Deaths
Who is the undiagnosed HCV population in 2014?

No HCV undiagnosed

- Men
- Women

2004

2014

18-39
40-59
60-80

- 50 %
Who is the undiagnosed HCV population in 2014?

- 45% = men 18-60
- combined HBV/HCV population screening
- 37% aged 70-80
Discussion

- Limitations
  - Prevalence survey
  - 2014 update
    - HCV: first results based on several assumptions
    - HBV: more difficult (vaccination and migratory data)

- Advantages
  - National survey performed on a large and random sample
  - HBV and HCV chronic infections
  - Awareness of infection

Perspectives

• French report for management of persons chronically infected with HCV and HBV (May 2014) ➔ possible recommendations

• Cost-effectiveness of a population-based screening in a low-prevalence setting?
  – Taking into account feasibility

• To expand access to treatment
Acknowledgements

National hepatitis B and C prevalence survey (general population)
C. Meffre et al., participating primary health insurance units, social security medical centers, National Reference Centre for Viral Hepatitis and participants

Hepatitis C prevalence among drug users, ANRS-Coquelicot
M. Jauffret-Roustdie et al., L. Weill-Barillet, X. Pascal

Blood donors surveillance
J. Pillonel, S. Laperche, P. Gallian et al., INTS, EFS

Hepatitis C surveillance through hepatology reference centres
E. Delarocque-Astagneau et al.