Overview of HAV, HBV and HCV surveillance in France

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VHPB, Veyrier, 18/11/2004
Hepatitis C
Hepatitis C virus infection in France

Background

• Estimated prevalence in 1994: 1%
• High prevalence among drug users
• Reports of episodes of transmission related to various medical procedures
• Deaths linked to HCV (year 1997): 1740 to 1930
• National prevention programme in the late 1990s
Surveillance programme for hepatitis C in France

• Possible aims?
  – Provide data to
    • contribute to evaluation of the national prevention programme
    • adapt public health action
  – Alert and intervention
  – Hypothesis for research

• Possible methods?

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Hepatitis C: potential surveillance systems

• To monitor incidence
  – acute hepatitis C (symptomatic=20%)
  – newly acquired hepatitis C viral infection (seroconversion)
    • but complex case definition with a large amount of work for a limited number of cases

• To monitor diagnosis of hepatitis C (anti-HCV antibodies) and collect detailed epidemiologic data on cases
  – too many expected cases
  – difficulties in collecting epidemiological data
  – difficulties in interpreting the results (incident and prevalent cases, missing data)
Hepatitis C programme

• Surveillance systems
  – Laboratory-based surveillance of HCV serology: screening activities; (Meffre, Eurosurveillance 2003; BEH 2003)
  – Newly referred hepatitis C virus infected patients in hepatology reference centres (BEH 2003, Annals of epidemiology in press)
  – Mandatory notification of nosocomial related hepatitis C (or B) (Lepouvre, BEH 2003)

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Hepatitis C programme

• Surveys
  – HIV patients for co-infection with HCV
    • 2000 (Salmon-Céron, Médecine et maladies infectieuses 2002)
    • 2004 (+HBV)
  – Population-based seroprevalence
    • 1994 (Dubois, Hepatology 1997)
    • 2003-2004
  – survey of deaths linked to hepatitis C 2004
  – Current modes of transmission 1998-2001
  – surveys in specific populations (drug users)
    • Valenciano, Addiction 2001
    • 2004

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Surveillance system for newly referred hepatitis C virus infected patients in hepatology reference centres

- Implemented in April 2000
- 26/31 reference centres participating
  - hepatology wards in university hospitals
  - some of them with a regional network
  - no prerequisites criteria for referral
- Case definition
  - newly referred patient (first contact) with positive anti-HCV antibodies in any of the participating reference centres
- Standardised notification form
  - epidemiological and clinical data

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Flow chart

Regional inter-hospitals network

Reference centres
- Fédération des Pôles*
- AFEF**

Institut de Veille Sanitaire

Steering committee

6 monthly
- paper forms
- electronic files

Annual report

Once a year
meeting
data analysis

*French association for the reference centres; **French association for the study of the liver
Data collected/Information provided by this system

- Circumstances of HCV antibody testing and date of diagnosis
- Risk factors for HCV transmission
- Suspected year of infection
- “Clinical-biological-morphological” stages
  - completed for 87% of the patients
- ALT value, HCV RNA, genotype
- Results of the liver biopsy (Metavir)
  - completed for less than 40% of the patients
- Alcohol consumption
« Clinical » stage distribution among HCV positive patients at first referral in hepatology reference centres; France 2000-2002

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
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<tbody>
<tr>
<td><strong>Total N° of patients</strong></td>
<td>N= 2 063</td>
<td>N= 3 906</td>
<td>N= 4 259</td>
</tr>
<tr>
<td>Data available for</td>
<td>n= 1 650</td>
<td>n=3 404</td>
<td>n=3 586</td>
</tr>
<tr>
<td>Normal ALT values</td>
<td>20.5%</td>
<td>17.7%</td>
<td>22.5%</td>
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<tr>
<td>Chronic hepatitis</td>
<td>68.1%</td>
<td>70.4%</td>
<td>66.0%</td>
</tr>
<tr>
<td>Cirrhosis, primary liver cancer</td>
<td>10.7%</td>
<td>11.5%</td>
<td>12.1%</td>
</tr>
<tr>
<td>Acute hepatitis</td>
<td>0.5%</td>
<td>0.4%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

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Hepatitis B virus
Incidence of hepatitis B per 100,000 inhabitants France, 1983-1996

http://rhone.b3e.jussieu.fr/senti/php/doc/bilans/
Hepatitis B: number of cases, number of participating GPs
Réseau Sentinelles 1991-2003

Source réseau
Sentinelles http://rhone.b3e.jussieu.fr/senti/php/doc/bilans/
Mandatory notification of acute hepatitis B cases

- 1998: working group on hepatitis B surveillance → mandatory notification

  Anonymous system 2000-2002
  Revisal of all the mandatory diseases

- March 2003: implementation

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Flow chart/criteria for notification

Biologist → clinician

- IgM anti-HBc +
- Or HBs ag + with elevated ALAT

District health office

- Clinical details/exposures
- Known positivity of HBs ag?

InVS

Notification form

Part 1: anonymisation code, year of birth, gender, district code
Part 2: biology
Parts 3-5: clinical details, exposures
Parts 6-7: names of the biologist and the clinician
Mandatory notification of acute hepatitis B cases : March 2003-March 2004
http://www.invs.sante.fr/

- Criteria for notification: 418 forms
  - 167 not fulfilling the notification criteria
  - 19 insufficient data
  - 158 acute hepatitis B + 8 possible (biological data only) + 66 chronic carriage (35 reactivations)
- Sensitivity probably better for hospitalised cases
  - 46% of cases hospitalised >> expected

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Acute hepatitis B by age groups

% of cases

- 1991-94
  n= 151
- 03/2003-02/2004
  n= 158

Réseau "Sentinelles"  mandatory notification
Hepatitis B and C: National Reference Centres

• Molecular epidemiology
  – Molecular typing, collection of “strains”, contribution to investigations

• Blood donors
  – Surveillance in blood donors, residual risk, reference techniques

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Hepatitis A virus
Hepatitis A. Background

- Increase of susceptible adults

- Sentinel surveillance system
  - decline in incidence: limited number of cases notified through the system
  - no out break detection (not an objective)

- Incidence, risk factors, outbreak detection??
  - Another surveillance system needed

M Joussemet, Gastroenterol Clin Biol 1999
Prevalence of anti-HAV antibodies by age groups

D Lévy-Bruhl
Hepatitis A. Background

• Increase of susceptible adults
  – prevalence of anti-HAV by age groups and gender

• Sentinel surveillance system
  – decline in incidence: limited number of cases notified through the system
  – no out break detection (not an objective)

• Incidence, risk factors, outbreak detection??
  – Another surveillance system needed

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Incidence of hepatitis A per 100,000 inhabitants
France, 1983-1996

http://rhone.b3e.jussieu.fr/senti/php/doc/bilans/

Taux pour 100 000

- courly
- Réseau "Sentinelles"

Année

Hepatitis A: number of cases, number of participating GPs
Réseau Sentinelles 1994-2003
http://rhone.b3e.jussieu.fr/senti/php/doc/bilans/
Hepatitis A surveillance: Pilot study

• 1999-2000
• Objectives:
  – outbreak detection, incidence, potential exposures
• 14 districts in mainland
• Notification of confirmed cases (IgM anti-HAV)
• Voluntary based participation of laboratories

- biologist

- clinician
  clinical details and exposures

- district medical officer
Evaluation of the pilot system 2000

• Information provided by the system
  – Incidence by age and gender

• Objective not reached: outbreak detection
  – Lack of sensitivity due to an insufficient proportion of participating laboratories
  – Lack of capacity to identify clusters at the district level

• Willingness and acceptability of the biologists very good

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Mandatory notification?

• Conclusion of a working group 2004

• Objectives:
  – outbreak detection
  – incidence

• Mandatory notification by biologists to the district medical officer

• Contact with clinicians
  – in case of cluster
  – once every 3 years to collect data on exposures

• Proposition submitted soon to Conseil superieur d’hygiene publique de France 26/11/2004
Hepatitis A. National reference centre

• Nominated in 2001
• A (+E) (E Dussaix, hôpital Paul Brousse; E Nicand, hopital du Val de grâce)

• Role
  – Expertise: identification, typing
  – Contribution to
    • alert
    • investigation of cluster

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• and the reference centres

• Françoise Roudot-Thoraval