Current vaccination policies for healthcare workers, vaccination coverage and serological testing

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Current vaccination policies for healthcare workers: European mini-survey

Background

- HBV infection is a serious risk for HCWs

-European Directive (2000/54/EC) on the protection of workers from risks related to the exposure to biological agents at work

-Objective of the survey: to get an idea on the policy of hepatitis B vaccination in HCWs in the countries of the European Union
Current vaccination policies for healthcare workers: European mini-survey

- Questionnaire developed

- Questionnaire sent to 25 member states of European Union contacted through various channels (ICOH, study partners, ...)

- Answers were received from 6 countries: Belgium, France, Italy, Luxembourg, United Kingdom, Switzerland
Current vaccination policies for healthcare workers: European mini-survey

- Sources

- EASL study (Gunson et al; 2003)
- International Commission on occupational health (ICOH)-Scientific Committee on OH of HCWs
  - ICOH national secretaries
- EASOM (European Association of Schools of Occupational Medicine)
- Partners in European studies on HCWs
In Belgium

- Vaccination against HBV was initiated in 1983 mainly through Fund for Occupational Diseases (FOD)
- Legal basis
  - KB 28.06.1983 (FOD)
  - KB 04.08.1996 (European Directive 90/679/EEC)
  - KB 29.04.1999 (Mandatory vaccination) HBV vaccination mandatory for certain groups of HCWs
Current vaccination policies for healthcare workers: European mini-survey

- HBV vaccination mandatory for all HCW: Belgium, France

- HBV vaccination recommended: Italy, Luxembourg, United Kingdom, Switzerland

- All countries perform vaccination for HCWs at the start of job or in medical and/or nursing school
Current vaccination policies for healthcare workers: Belgium

- Description of the program
  - Vaccination: vaccine type & schedule
  - Monovalent vaccine 0,1,2,12  Bivalent vaccine 0,1,6
  - Pre-test screening for hepatitis B markers (1983-1993)
  - Monitoring of seroconversion through anti-HBs
  - Criteria for booster injections
  - Target groups
  - ± 250 000 HCW received 1 000 000 doses of HB vaccine (1983-2003)
  - IDEWE vaccinated ± 125 000 HCW (1983-now)
Current vaccination policies for healthcare workers: European mini-survey

- Description of the program (1)

- Vaccination: vaccine type & schedule:
  - Monovalent vaccine: It, UK, CH
  - Bivalent vaccine: Be, Fr, Lux

- Schedule:
  - 0, 1, 6: All 6
  - 0, 1, 2, 12: Be, UK, CH (if rapid response is needed for higher risk groups)
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Description of the program (2)

Pre-test screening for hepatitis B markers:
- No: Fr, It, Lux, CH
- Yes/no: Be, UK (EPP)

Issues:
- What are the objectives of pre-test screening?
- Which markers should be tested?
- At what prevalence level of HBV markers is pre-testing justified?
- Prevalence of anti-HBc in selected European countries ranges between 5 and 30% (Gunson et al; 2003)
- Does testing make sense in already immunized cohorts?
Current vaccination policies for healthcare workers: European mini-survey

- Description of the program (3)
  - Post-vaccination testing: protective level
    - 10 IU/l: Fr, It
    - 10-100 IU/l: Be, UK
    - 100 IU/l: CH

Post-vaccination testing: issues
- Objectives?
- Which markers?
Current vaccination policies for healthcare workers: European perspective

Occurrence of HBV infections in HCW through the analysis of serological markers of HBV infection

- Seroprevalence of HBsAg in practising HCW ranges from 0.3 to 3.0% in selected European countries (At, Fr, De, Gr, Is, It, Pt, Se) (Gunson et al; 2003)

- In a study of 132 HCWs 5 (3.8%) non-responders showed evidence of HBV infection (De Schryver et al; in press)
Current vaccination policies for healthcare workers: European mini-survey

- Description of the program (4)
  - Booster injections?
    - Yes: Be, UK,
    - No: Fr, It, CH

Management non-responders:
  - one additional dose: Be, It, Lux,
  - other strategies: Fr, UK, CH
Current vaccination policies for healthcare workers: estimation of coverage: Belgium

Up to 1990 studies show low coverage rates in HCW

“traditional” health care workers: 40%
allied hospital workers: 25%

IDEWE study (Vranckx et al; 2004)

Study in 21 general hospitals and one University Hospital in Flanders (Belgium)

n = 5068 HCW
Current vaccination policies for healthcare workers: estimation of vaccination coverage: Belgium

Hepatitis-B vaccination coverage, seroconversion and seroprotection in healthcare workers (Vranckx et al; 2004)

<table>
<thead>
<tr>
<th>Age</th>
<th>%vaccinated</th>
<th>%seroconverted</th>
<th>%seroprotected</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;25y</td>
<td>77.5</td>
<td>73.0</td>
<td>71.4</td>
</tr>
<tr>
<td>25-34y</td>
<td>88.7</td>
<td>86.6</td>
<td>84.9</td>
</tr>
<tr>
<td>35-44y</td>
<td>84.0</td>
<td>80.6</td>
<td>78.8</td>
</tr>
<tr>
<td>45-54y</td>
<td>81.6</td>
<td>79.0</td>
<td>75.8</td>
</tr>
<tr>
<td>&gt;55y</td>
<td>86.2</td>
<td>80.0</td>
<td>73.8</td>
</tr>
<tr>
<td>Total</td>
<td>84.9</td>
<td>82.0</td>
<td>80.0</td>
</tr>
</tbody>
</table>
## Current vaccination policies for healthcare workers: estimation of vaccination coverage:

### Belgium

Vaccination by task (traditional versus allied HCW) (n=5041)

<table>
<thead>
<tr>
<th>Job/task</th>
<th>% vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>39.1</td>
</tr>
<tr>
<td>Nursing staff</td>
<td>94.8</td>
</tr>
<tr>
<td>Laboratory</td>
<td>97.3</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>85.4</td>
</tr>
<tr>
<td>Maintenance-technical</td>
<td>87.7</td>
</tr>
<tr>
<td>Catering</td>
<td>44.4</td>
</tr>
<tr>
<td>Not specified</td>
<td>77.4</td>
</tr>
<tr>
<td>Total</td>
<td>84.9</td>
</tr>
</tbody>
</table>
Current vaccination policies for healthcare workers: estimation of coverage: European mini-survey

- Published data
  - Belgium: 85% (2004)
  - Italy: 65% (1998)

- Best estimate
  - Fr (90%)
  - UK (85%)
  - CH (95%)

Studies on vaccination status in HCWs having needlestick injuries could give interesting data for surveillance and monitoring.
# Current vaccination policies for healthcare workers: PubMed search (1)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of study</th>
<th>Sample</th>
<th>Profession</th>
<th>% vaccinated</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>1999</td>
<td>200</td>
<td>GP’s</td>
<td>75</td>
<td>Michiels et al; 2000</td>
</tr>
<tr>
<td>France</td>
<td>2003</td>
<td></td>
<td>HCWs (non-medical)</td>
<td>80-100</td>
<td>Denis et al; 2004</td>
</tr>
<tr>
<td>France</td>
<td>2003</td>
<td></td>
<td>Physicians in hospitals</td>
<td>55-100</td>
<td>Denis et al; 2004</td>
</tr>
<tr>
<td>Germany</td>
<td>2000</td>
<td>3617</td>
<td>Medical Housekeeping Other</td>
<td>75</td>
<td>Borchert &amp; Horst-Schaper; 2001</td>
</tr>
</tbody>
</table>
## Current vaccination policies for healthcare workers: PubMed search (2)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of study</th>
<th>Sample</th>
<th>Profession</th>
<th>% vaccinated</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>2001</td>
<td>78 93 81 88</td>
<td>GP’s Nurses Consultants Comm nusr</td>
<td>95 96 92 91</td>
<td>Smith; 2004</td>
</tr>
<tr>
<td>Turkey</td>
<td>2002</td>
<td>452</td>
<td>Nurses</td>
<td>72</td>
<td>Kosgeroglu et al; 2003</td>
</tr>
</tbody>
</table>
# Current vaccination policies for healthcare workers: studies in HCWs having needleprick

<table>
<thead>
<tr>
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<th>Year of study</th>
<th>Sample</th>
<th>Profession</th>
<th>% vaccinated</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>2000</td>
<td>223</td>
<td>All HCWs</td>
<td>38</td>
<td>Caesar et al;2001</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2003</td>
<td>98</td>
<td>All HCWs</td>
<td>17</td>
<td>Kidger-Koppelaar et al;2004</td>
</tr>
</tbody>
</table>
Current vaccination policies for healthcare workers: conclusions

- HBV vaccination policies for HCWs vary across countries of European Union

- Booster policies are not very well defined and seem to have different aims and objectives

- To monitor vaccination coverage, the follow-up of needlestick injuries seems attractive

- The objectives of serological testing pre/post-vaccination are not clearly defined
Current vaccination policies for healthcare workers

• Questions and Answers