Migration and viral hepatitis

Tanja Wörmann

Department of Public Health Medicine; School of Public Health; University of Bielefeld
Outline

- Composition of the Dutch population
  - according to migration background
  - main countries of origin of first generation migrants

- Viral hepatitis
  - Global distribution of HBV, HDV and HCV

- Some results
  - Hepatitis B
  - Hepatitis C

- Conclusions
Composition of the Dutch population

Natives: 13,189,983
+ First generation migrants: 1,619,314
+ Second generation migrants: 1,596,102
= Total Dutch population: 16,405,399

(CBS 01.01.2008)
Dutch population by nationality

- 4.2% (688,375) of the Dutch population has a Non-Dutch-nationality;

- Most of them have another European citizenship (55.2%), followed by those with an African (14.9%), Asian (10.9%), American (5.8%) and Oceanian (0.6%) nationality.
Main countries of origin of FGM

- Turkey: 12.0%
- Suriname: 11.4%
- Morocco: 10.3%
- Indonesia: 7.6%
- Germany: 6.3%
- Netherlands Antilles/Aruba: 4.9%
- Former Yugoslavia: 3.3%
- Poland: 2.6%
- UK: 2.6%
- Belgium: 2.3%
- China: 2.0%
- Iraq: 2.2%
- Former Soviet Union: 2.3%
- Afghanistan: 1.9%
- Others: 28.3%
Prevalence of chronic infection with hepatitis B virus, by country (2006)

Source: www.cdc.gov/travel/yellowBookCh4-HepB.aspx#363
HCV: A global health problem
Impact of migration on the HBsAg-prevalence in the Netherlands

In the Netherlands:
1995 serosurveillance study (Pienter project)
=> 0.2% HBsAg+ (van Marrewijk et al. 1999)

First generation migrants (foreign born) and other risk-groups are underrepresented
=> Underestimation!
Objectives

1. Calculate (age-specific) HBsAg-prevalence rates for migrant groups

2. Provide an adjusted prevalence estimate for the Netherlands
Assumptions

- (Age-dependent) prevalence of chronic carriers of first generation migrants reflects (age-dependent) prevalence of country of origin

- Second generation migrants are comparable to the Native Dutch population (Baaten et al. 2007)
Migrants of the first generation: Main countries of origin and HBsAg-prevalence levels
Age distribution of different population groups in the Netherlands

- FGM: Low endemic countries
- FGM: Intermediate endemic countries
- FGM: High endemic countries
- Remaining population

Age groups:
- 0 to 10
- 10 to 20
- 20 to 30
- 30 to 40
- 40 to 50
- 50 to 60
- 60 to 70
- 70 to 80
- 80 to 90
- >90

Graph showing the distribution of different population groups across various age ranges.
Age-dependent prevalence for low, medium and high endemic countries

Comment: we chose studies on the low end of the WHO scale
Estimated numbers of HBsAg-carriers in migrants from different areas (low, intermediate, high HBsAg-prevalence)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Population low endemic</th>
<th>Calc. Carrier</th>
<th>Population middle endemic</th>
<th>Calc. Carrier</th>
<th>Population high endemic</th>
<th>Calc. Carrier</th>
<th>Total first generation</th>
<th>Calc. carriers</th>
<th>HBsAg-prev (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15</td>
<td>21 699</td>
<td>n.d.a.</td>
<td>52 872</td>
<td>1 616</td>
<td>13 395</td>
<td>822</td>
<td>87 966</td>
<td>2 438</td>
<td>2.77</td>
</tr>
<tr>
<td>15 to 24</td>
<td>27 000</td>
<td>71</td>
<td>127 036</td>
<td>5 617</td>
<td>37 131</td>
<td>3 117</td>
<td>191 167</td>
<td>8 805</td>
<td>4.61</td>
</tr>
<tr>
<td>25 to 34</td>
<td>54 106</td>
<td>310</td>
<td>246 330</td>
<td>7 906</td>
<td>45 210</td>
<td>4 980</td>
<td>345 646</td>
<td>13 196</td>
<td>3.82</td>
</tr>
<tr>
<td>35 to 44</td>
<td>61 664</td>
<td>598</td>
<td>276 043</td>
<td>10 713</td>
<td>42 476</td>
<td>7 268</td>
<td>380 183</td>
<td>18 579</td>
<td>4.89</td>
</tr>
<tr>
<td>45 to 54</td>
<td>47 548</td>
<td>389</td>
<td>195 735</td>
<td>8 257</td>
<td>25 081</td>
<td>4 366</td>
<td>268 364</td>
<td>13 012</td>
<td>4.85</td>
</tr>
<tr>
<td>55 to 64</td>
<td>38 580</td>
<td>185</td>
<td>131 733</td>
<td>2 490</td>
<td>8 101</td>
<td>810</td>
<td>178 414</td>
<td>3 485</td>
<td>1.95</td>
</tr>
<tr>
<td>65 to 74</td>
<td>19 349</td>
<td>56</td>
<td>73 699</td>
<td>510</td>
<td>2 845</td>
<td>285</td>
<td>95 893</td>
<td>851</td>
<td>0.89</td>
</tr>
<tr>
<td>&gt;75</td>
<td>18 363</td>
<td>n.d.a</td>
<td>37 034</td>
<td>n.d.a.</td>
<td>1 229</td>
<td>65</td>
<td>56 626</td>
<td>65</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>288 309</td>
<td>1 609</td>
<td>1 140 482</td>
<td>37 109</td>
<td>175 468</td>
<td>21 713</td>
<td>1 604 259</td>
<td>60431</td>
<td>3.77</td>
</tr>
</tbody>
</table>
HBV in the migrant population

- 58% to 72% of all chronically with HBV infected individuals in the Netherlands belong to the group of FGM (Marschall et al. 2008)

- Almost 70% of the chronic HBV patients were born abroad, mostly in intermediate or high-endemic countries (Koedijk et al. 2005)

- In 60% of all by heterosexual contact new infected HBV-cases, the source of infection was a partner originating from a hepatitis B-endemic region (Veldhuijzen et al. 2005)
HCV in the migrant population

Estimated prevalence rates of HCV in the most important non-western countries of origin of the Dutch population with migration background:

Turkey => 1.5-2.9%
Suriname => 1.0-5.5%
Morocco => 1.1-2.9%
Indonesia => 2.1-2.9%
Neth. Ant./Aruba => 1.0-1.9%

(Kok et al.; Ned Tijdschr Geneesk 2007; 151:2367-71)
HCV (II)

- Estimated prevalence of 2.16% in FGM
- Highest numbers in migrants from Suriname, Turkey, Indonesia, Egypt and Morocco
- FGM are responsible for 56% of all HCV infections in the Netherlands

(Kretzschmar et al. 2004; RIVM)
HCV in the migrant population (III)

- IDUs, transfusion recipients and immigrants were identified as major HCV risk groups in the Netherlands
- Study of van de Laar et al. (2006): 12% of all respondents are born in endemic countries
- Long-time residence abroad may also be a risk-factor
Conclusions

- Migrants and their close contacts are a very important target group for screening programmes and treatment for chronic hepatitis B and C;
- Universal screening and/or vaccination of all new entering migrants could be good possibility to avoid new HBV cases;
- It is also important to provide information materials on diagnosis, clinical course of the disease, treatment and prevention also in foreign languages to support an adequate medical care for migrants.
THANK YOU FOR YOUR ATTENTION!