Approach to the different risk groups for HBV and/or HCV

Robert J. de Knegt
Dpt. Gastroenterology & Hepatology
Erasmus MC – Rotterdam

Thursday, November 13, 2008
Chronic Hepatitis B and C
Silent Killers

- Acute infection
- Asymptomatic carrier
- Chronic Hepatitis
- Resolution
- Stabilization
- Compensated Cirrhosis
- Decompensation Transplantation Death
- Cancer
- Death

30–50 year
Increasing Treatment Strategies for HBV and HCV

- **1965**: Australia antigen
- **1980s**: Rec. vaccine approved
- **1990s**: IFN approved
- **1990s**: Ribivarin approved
- **2000**: ADV approved
- **2007**: PEG-IFN approved
- **2007**: Telb. approved
- **2007**: ETV approved
HBV and HCV are treatable diseases

HBV can also be prevented (vaccination)
FIGURE 3. Geographic distribution of chronic hepatitis B virus (HBV) infection — worldwide, 2006*

* For multiple countries, estimates of prevalence of hepatitis B surface antigen (HBsAg), a marker of chronic HBV infection, are based on limited data and might not reflect current prevalence in countries that have implemented childhood hepatitis B vaccination. In addition, HBsAg prevalence might vary within countries by subpopulation and locality.

1800 new patients reported each year
Prevention of HBV Infection

• Vaccine is highly effective – HBV incidence is declining
  – Infants and children vaccination rates high
  – In countries endemic for HBV, infant vaccination has reduced rates of liver complications
• HBV-related HCC is vaccine-preventable cancer
HBV Modes of Transmission

- Sexual
- Parenteral
- Perinatal
HBV high risk groups in the Netherlands – ca. 50000 patients

- On hemodialysis
- Hemophilia, or others who are regularly in need for blood products
- Mentally ill patients
- Down syndrome
HBV high risk groups in the Netherlands – healthy people

- Partners of HBV patients
- Newborns from HBV mothers
- People who had contact with HBV blood or blood of unknown origin
- People with multiple sex partners
- Those living in high-endemic areas
- IV drug abuse
- Family members of an HBV patient
- Children in asylum centers
- People who visit a clinic for sexual transmitted disease
- Children with one parent born in a high-endemic area
HBV high risk groups in the Netherlands

• Medics and paramedics – ca. 300,000 people
Who does the work?

- Those who take care of pregnant women
- GGD and SOA-clinics, for high risk groups
- Arbo/GGD, for medical personnel
Hepatitis B vaccination

- All infants, beginning at birth
- All children aged <19 years who have not been vaccinated previously
- Susceptible sex partners of hepatitis B surface antigen (HBsAg)-positive persons
- Sexually active persons who are not in a long-term, mutually monogamous relationship (e.g., >1 sex partner during the previous 6 months)
- Persons seeking evaluation or treatment for a sexually transmitted disease
- Men who have sex with men
- Injection drug users
- Susceptible household contacts of HBsAg-positive persons
- Healthcare and public safety workers at risk for exposure to blood or blood-contaminated body fluids
- Persons with end-stage renal disease, including predialysis, hemodialysis, peritoneal dialysis, and home dialysis patients
- Residents and staff of facilities for developmentally disabled persons
- Travelers to regions with intermediate or high rates of endemic HBV infection
- Persons with chronic liver disease
- Persons with HIV infection
- All other persons seeking protection from HBV infection — acknowledgment of a specific risk factor is not a requirement for vaccination
Reported HBV cases 2001-2007 in the Netherlands
Countries which do worse?

- Scandinavia, Baltic and Balkan
Conclusions

• HBV in special risk groups:
  – HBV: Predefined high risk groups
  – HBV: focus on prevention
## Table 1 / Table 1

Number of HCV infections reported by suspected transmission route, The Netherlands, April 1999-February 2001

<table>
<thead>
<tr>
<th>Mode de transmission</th>
<th>No. de cas</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>jecting drug users</td>
<td>440</td>
<td>64.0</td>
</tr>
<tr>
<td>Sang et produits sanguins</td>
<td>42</td>
<td>6.0</td>
</tr>
<tr>
<td>Blood and blood products</td>
<td>38</td>
<td>5.5</td>
</tr>
<tr>
<td>Others</td>
<td>12</td>
<td>5.5</td>
</tr>
<tr>
<td>Needle stick injury</td>
<td>9</td>
<td>5.5</td>
</tr>
<tr>
<td>Sexual</td>
<td>8</td>
<td>5.5</td>
</tr>
<tr>
<td>Mother to child</td>
<td>5</td>
<td>5.5</td>
</tr>
<tr>
<td>Surgery</td>
<td>4</td>
<td>5.5</td>
</tr>
<tr>
<td>Dialysis</td>
<td>170</td>
<td>24.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>185</td>
<td>26.5</td>
</tr>
<tr>
<td>Total</td>
<td>690</td>
<td>100</td>
</tr>
</tbody>
</table>

Manque 185 / Missing 185
HCV in the Netherlands

Figure 3
Cumulative incidence per 100 000 of notified hepatitis C virus infections by Municipal Health Authority, April 1999-February 2001, The Netherlands.
High Prevalence of HCV Among IDUs Worldwide

Duration of Injection Drug Use and the Prevalence of Blood-Borne Viruses

HCV Infection: High-Risk Populations in Which Screening Is Indicated

- Injection drug use
- Nasal inhalation of cocaine
- Chronic renal failure on dialysis
- Incarceration
- Multiple sexual partners, MSM, HIV positive
- Transplantation or transfusion of blood products before 1992
- Occupational exposure to blood products
- Body piercing and possibly tattoo
- Children born to HCV-positive women

Different risk groups for HBV and/or HCV

- HBV
  - Identification
  - Vaccination

- HCV
  - Identification
  - Treatment
# Demographic Factors Associated with HCV Infection

<table>
<thead>
<tr>
<th>Factor</th>
<th>Prevalence of HCV Infection, %</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≤ 30 years</td>
<td>16.7</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Age ≥ 51 years</td>
<td>63.2</td>
<td>8.57</td>
<td>3.10-23.69</td>
</tr>
<tr>
<td>Cumulative incarceration &lt; 2 years</td>
<td>11.6</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Cumulative incarceration ≥ 5 years</td>
<td>48.4</td>
<td>7.16</td>
<td>3.29-15.57</td>
</tr>
<tr>
<td>Age &lt; 15 years when first incarcerated</td>
<td>44.8</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Age ≥ 30 years when first incarcerated</td>
<td>20.4</td>
<td>0.32</td>
<td>0.15-0.68</td>
</tr>
</tbody>
</table>

Role of Methadone Programs

• Screening is recommended for all clients
• Methadone use itself can reduce risk of infection/ transmission
• Ideal setting for risk reduction counseling
• Potential setting for additional health interventions

ACTIEF TESTEN ! (ACTIVE TESTING !)
HCV SVR rates in drug users entering detoxification (50 patients)

Backmund M, Hepatology 2002
Management of HCV in high risk groups
- iv drug abusers

• Methadone maintenance
• Directly observed therapy
• Multidisciplinary management
Methadone maintenance

Maus S, Hepatology 2004
Directedly observed therapy

- Grebely J et al, J Gastr Hepatol 2004
- 40 patients
- 14 discontinued (5 toxicity, 6 illicit drug use, 3 non-response)
- SVR 22/40
Multidisciplinary management

- Guadagnino V et al, Addiction 2007
- 53 patients
- 19 drop outs, 3 non-responders
- SVR 27/53
Conclusions

• HBV and HCV in special risk groups:
  – HBV: Predefined high risk groups
  – HCV: In particular iv drug abusers, marginally housed people and prisoners
  
  – HBV: focus on prevention

  – HCV: focus on treatment
    • Methadone maintenance, directly observed therapy and multidisciplinary management
www.erasmusmc.nl/mdl