Keynote: Viral Hepatitis

Dr Daniel Lavanchy
Switzerland
Viral Hepatitis Burden

- today well defined but unknown to many including health professionals
- 900’000 – 1.2 million deaths annually
- ~ 500 million chronically infected
- Economic impact huge when analyzed
End-stage liver disease

- Cirrhosis > 783'000 deaths / year
- Liver cancer > 619'000 deaths / year
- ~1 of every 40 death worldwide
- No good breakdown according to etiology
## Ranking of the global cancer deaths by site, 2000

Shibuya et al., BMC Cancer 2002, 2:37

<table>
<thead>
<tr>
<th>site</th>
<th>No</th>
<th>deaths (000s)</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trachea, bronchus, and lung</td>
<td>1</td>
<td>1211.5</td>
<td>17.2</td>
</tr>
<tr>
<td>Stomach</td>
<td>2</td>
<td>835.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Liver</td>
<td>3</td>
<td>611.4</td>
<td>8.7</td>
</tr>
<tr>
<td>Colon and rectum</td>
<td>4</td>
<td>608</td>
<td>8.6</td>
</tr>
<tr>
<td>Breast</td>
<td>5</td>
<td>473.8</td>
<td>6.7</td>
</tr>
<tr>
<td>Oesophagus</td>
<td>6</td>
<td>430.4</td>
<td>6.1</td>
</tr>
<tr>
<td>Lymphomas and myeloma</td>
<td>7</td>
<td>329.9</td>
<td>4.7</td>
</tr>
<tr>
<td>Mouth and oropharynx</td>
<td>8</td>
<td>320</td>
<td>4.5</td>
</tr>
<tr>
<td>Prostate</td>
<td>9</td>
<td>264</td>
<td>3.8</td>
</tr>
<tr>
<td>Leukaemia</td>
<td>10</td>
<td>263.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Cervix uteri</td>
<td>11</td>
<td>254.2</td>
<td>3.6</td>
</tr>
<tr>
<td>Pancreas</td>
<td>12</td>
<td>222.3</td>
<td>3.2</td>
</tr>
<tr>
<td>Bladder</td>
<td>13</td>
<td>179.4</td>
<td>2.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>14</td>
<td>30.1</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Attributable Fractions of Cirrhosis

Perz et al, 2006
Attributable Fractions of Hepatocellular Carcinoma

Source: Perz et al, 2006
## HBV vs. HCV History

<table>
<thead>
<tr>
<th></th>
<th>HBV</th>
<th>years</th>
<th>HCV</th>
<th>years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discovered</td>
<td>1968</td>
<td></td>
<td>1989</td>
<td>21</td>
</tr>
<tr>
<td>Vaccine</td>
<td>1982</td>
<td>15</td>
<td>?</td>
<td>&gt; 11?</td>
</tr>
<tr>
<td>Treatment</td>
<td>1985</td>
<td>17</td>
<td>1990</td>
<td>1</td>
</tr>
<tr>
<td>Global policy</td>
<td>1991</td>
<td>23</td>
<td>2010</td>
<td>11</td>
</tr>
<tr>
<td>Vaccine implemented</td>
<td>2005</td>
<td>37</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Global control</td>
<td>2020?</td>
<td></td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>
HBV Vaccine Coverage
Local HCV Prevalence in China

- Non-injection drug users: 0% (Anhui), 40% (Fujian)
- Overall prevalence
  - 0.58% in 6 regions
  - 2.1% (Fujian)
  - 9.6% in Henan
  - 25% in rural elderly
- 2.7% estimate by WHO?
- Geographic distribution is heterogeneous
  differs in rural and urban settings

Bao et al, 2009
Local HCV Prevalence in India

- Prevalence highly variable ("patchy")
  - (0.09-7.89%)

- Most studies conducted in blood banks
  - prevalence rates of < 2%,
  - professional donors: 55.3% - 87.3%
  - WHO estimate: 1.85% ?

- Chronic HCV infection will likely show increase in morbidity & mortality in India
Changing Prevalence

Changing trends over past 50 years:

- **Japan**
  - HCV Prevalence lower in younger vs older (>55) (0.2% vs. > 2%).
  - HCC has steadily increased, but incidence of HCC is now decreasing in Japan

- **Pakistan**
  - 10 million (5.9%) people infected with HCV

- **England**
  - pilot study: HCV prev. 15% in pharmacies vs. 4% in GP surgeries

- **Taiwan & Italy**
  - decrease of HBsAg prevalence and of HCC
Local HCV Prevalence in Iran
### Estimated Cumulative HCV Infection-Related Mortality and Costs

(United States): 2010–2019

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic liver disease deaths</td>
<td>165,900</td>
</tr>
<tr>
<td>Hepatocellular carcinoma deaths</td>
<td>27,200</td>
</tr>
<tr>
<td>Cost*</td>
<td>$10.7 billion</td>
</tr>
</tbody>
</table>

*In 1999 US dollars.

Increase in Future Disease Burden 1998 vs 2008

- Need for Liver Transplantation: 528%
- Decompensation: 279%
- Liver-Related Deaths: 223%
- HCC: 68%
- Cirrhosis: 61%

Doing nothing has a cost too

- Drug use related costs in 10 EU countries
  - € 1.8 billion annually
  - HBV: € 36 million
  - HCV: € 750 Million, excluding drug therapy & monitoring

- even with no public health actions hepatitis causes significant costs to society

European Monitoring Centre for Drugs and Drug Addiction, 2001
Doing nothing has a cost too

EMCDDA, 2004

D. Lavanchy
Action is needed

Goals
- Improve individual’s health
- Improve public health security
- Reduce future costs

Basics required
- Data & facts
- Policies & guidelines in place
- Overall goals clearly communicated
- Funding secured
- Use available experience
  - Avoid past mistakes, use existing facilities & trained staff
Data are necessary for

- Decision making & policy development
  ★ baseline, disease burden, trends, risk factors, specific population groups

- Development, implementation & evaluation of prevention & control measures
  ★ goals definition, screening, blood safety, treatment, prevention, harm reduction

- Avoidance of heterogeneity in availability / quality of data
  ★ consistent goals & opinions
  ★ harmonized policies
Data are necessary for

- **Disease control**
  - outbreak detection, investigation and response
  - identify and follow-up infected persons

- **Choice of appropriate strategy & management**
  - HCW including primary care clinicians & nurses
  - governments, NGOs, public health officials, advocacy groups

- **Link & interaction with public health research**
  - help prioritize > allocation of resources
  - research project definitions
Clear and consistent messages must be communicated to:

<table>
<thead>
<tr>
<th></th>
<th>general public</th>
<th>governments</th>
<th>NGOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>public health officials</td>
<td>health care providers</td>
<td>advocacy groups</td>
<td></td>
</tr>
</tbody>
</table>

- offer the *same, complete information*
- raise awareness and understanding
- overturn misconceptions
- set clear, quantifiable targets for actions
Chronic Hepatitis Concerns

- Affecting every strata of society
  - Individual drama
  - Population groups: stigmatized
  - National levels: socio-economical burden
  - International problems: travel, migration

- Implications for
  - Society
  - Economies
  - Public Health
Lessons Learned

● Prevention & control of viral hepatitis
  ✴ complex task requiring multi-sectorial cooperation

● National government commitment
  ✴ currently missing in many countries

● International assistance
  ✴ private / public health components

● What is the overarching goal?
  ✴ Strategies may differ in countries
Public Health Goals

- Public recognition of hepatitis as important public health issue
- Holistic strategy for prevention, control & management
- Government lead for a national strategy for awareness raising, screening, diagnosis, referral and treatment policy
- Involve professionals and scientific societies
  - define the problem
  - develop goals, impacting advocacy messages & control measures
- Involve advocacy groups
  - reducing incidence and prevalence
  - reducing morbidity & mortality
  - treatment compliance
Conclusions:

- New viral hepatitis infections continue to occur
- Most subjects who need treatment do not get it
- Implementation of comprehensive national programs to prevent & control viral hepatitis still needed in 2010
- Data are essential
- Include patient support groups & “traditional / local” communities with high proportions of immigrants & other vulnerable populations
- Insure respect of human rights and civic liberties
Conclusions (2):

- Do NOT wait for additional datasets to start implementation of comprehensive national prevention & control programs
- Monitor control measures
  - insure compliance & sustainability (treatment)
- Research is still necessary to define best practices
  - Need for “independent” research
Outlook

- It is difficult to learn from the past
- It is difficult to remember, particularly about bad things
- We learn by mistakes
- Implementing change cannot be done in an office
- Without a clear benefit, no need for change
- First do no harm
- VHPB is a good model for implementing change
- Let’s be innovative