Hepatitis C Burden in the Asia-Pacific Region

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Content

- Hepatitis C Prevalence in the Asia-Pacific Region
- Progression of HCV Infection to Severe Liver Disease
- Major Challenges in the Management of Hepatitis C Patients

HCV = hepatitis C virus
Hepatitis C Prevalence in the Asia-Pacific Region
Global Hepatitis C Burden

- 170 million persons chronically infected
- Major cause of cirrhosis, HCC and liver related death
- >350,000 deaths/year
- Significant impact on QoF
- Significant economic burden

Average Annual Costs for Hepatitis Patients in Each Illness Stage in Japan

- Chronic hepatitis: $1,582
- Compensated cirrhosis: $1,727
- Decompensated cirrhosis: $15,504
- HCC: $17,860
- Post-SVR: $690

* Combined inpatient and outpatient costs. Inpatient costs obtained from Niigata Medical and Dental University. Outpatient costs were estimated by simulated model.

HCC, hepatocellular carcinoma; SVR, sustained virologic response

Average Annual Costs for Hepatitis Patients in Each Illness Stage in China

It is estimated the average annual costs for HB are about 43 billion USD in China.

Average Annual Costs for Hepatitis Patients in Each Illness Stage in China

Hu M & Chen W. Value in Health, 2009
Anti-HCV Prevalence by Country

>50% of all HCV (+) individuals live in the Asia-Pacific region

Source: Center for Disease Analysis

Updated by WHO in June 2013
Anti-HCV Prevalence in Asia-Pacific Countries

*Prevalence estimates are based on a systematic review of country-specific data*

Estimated Hepatitis-Related Deaths by Virus, Asia-Pacific Region, 2010

- 60% HBV
- 27% HCV
- 8% HAV
- 5% HEV

Courtesy of IHME – Global Burden of Disease Study
Anti-HCV Prevalence by Age in Asia

Prevalence of Anti-HCV in USA and Japan According to Age

HCC prevalence

8~10 fold increase

Prevalence of Anti-HCV (%)

USA

Japan

Prevalence of anti-HCV (%)

Age (Yrs)
Reports of Acute Hepatitis C Outbreaks

Canada¹: ~30 cases; Prevalence of chronic HCV/HIV 19%; 11,200

USA¹,²: 55 cases; Prevalence of chronic HCV/HIV 15~30%; 180,000~360,000

Europe⁴⁻¹⁰: 1,068 cases; Prevalence of chronic HCV/HIV 25%; 185,500
  - UK 552
  - Germany 157
  - France 126
  - Netherland 97
  - Belgium 69
  - Swiss 23
  - Italy 21
  - Denmark 13
  - Spain 8

Lebanon¹¹ 1 case; Prevalence of chronic HCV/HIV 49%; 1,500

Australia¹²: 47 cases; Prevalence of chronic HCV/HIV <1%; 1,000

Taiwan¹³: 28 Cases; Prevalence of chronic HCV/HIV 55%; 8,800

HCV Epidemics in Some Rural Areas of China

China

- Heilongjiang
- Jilin
- Liaoning
- Hebei
- Tianjin
- Shandong
- Shandong
- Anhui
- Jiangsu
- Zhejiang
- Guangdong
- Hainan
- Guangxi
- Hainan
- Hubei
- Hunan
- Sichuan
- Guizhou
- Yunnan
- Gansu
- Qinghai
- Tibet
- Xinjiang
- Chongqing
- Shanxi
- Henan
- Shandong
- Hebei
- Tianjin
- Jilin
- Jilin
- Putian
- Fujian
- Kuancheng
- Jintan
- Woyang
- Yongcheng
- Zijinxian
- Weichang
- Qinglong
- Arongqi
- Nengjiang
- Fuyu
- Jianping
### Routes of HCV Transmission Differ by Geography

<table>
<thead>
<tr>
<th>Routes of Infection</th>
<th>US (n=970)</th>
<th>Europe Top 5* (n=2395)</th>
<th>Japan (n=2395)</th>
<th>China (n=2395)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homosexual contact</td>
<td>3%</td>
<td>4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Heterosexual contact</td>
<td>6%</td>
<td>6%</td>
<td>-</td>
<td>1%</td>
</tr>
<tr>
<td>Vertical transmission</td>
<td>1%</td>
<td>2%</td>
<td>-</td>
<td>1%</td>
</tr>
<tr>
<td>Intravenous drug use</td>
<td>48%</td>
<td>30%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>Blood transfusion</td>
<td>12%</td>
<td>15%</td>
<td>22%</td>
<td>49%</td>
</tr>
<tr>
<td>Tattoo/body piercing</td>
<td>4%</td>
<td>2%</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>6%</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Not known</td>
<td>24%</td>
<td>35%</td>
<td>67%</td>
<td>36%</td>
</tr>
</tbody>
</table>

*France, Germany, Italy, Spain and UK.

Results from a syndicated patient record study conducted among a sample of HCV physicians in Q2; Data collected from patient diaries written by diagnosed patients managed by active treaters in large cities; Syndicate HCV 2009 Global Report.
### HCV Prevalence in Multi-Transfused Patients in Pakistan

<table>
<thead>
<tr>
<th>Condition</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-transfused obstetric cases</td>
<td>15%</td>
</tr>
<tr>
<td>Beta thalassaemia major</td>
<td>24%</td>
</tr>
<tr>
<td>Hemophilia</td>
<td>25%</td>
</tr>
<tr>
<td>Chronic hemodialysis</td>
<td>45%</td>
</tr>
</tbody>
</table>

Thursz MR. EASL-AASLD Special Conference on Therapy of Hepatitis C: Clinical Application and Drug Development. September 14, 2012, Prague Czech
**Blood Bank Practices in Karachi**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Count (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participated in Study</td>
<td>24</td>
</tr>
<tr>
<td>Regularly utilized paid donors</td>
<td>12 (50%)</td>
</tr>
<tr>
<td>Actively recruited volunteer donors</td>
<td>6 (25%)</td>
</tr>
<tr>
<td>Asked donors about IV drug abuse</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>None about high risk behavior</td>
<td>24 (0%)</td>
</tr>
<tr>
<td>Facilities for HBV screening</td>
<td>23 (96%)</td>
</tr>
<tr>
<td>Facilities for HIV screening</td>
<td>13 (54%)</td>
</tr>
<tr>
<td>Facilities for HCV screening</td>
<td>6 (25%)</td>
</tr>
</tbody>
</table>

Luby SP, et al. 2000
HCV in Haemodialysis Patients

<table>
<thead>
<tr>
<th>Country</th>
<th>Anti-HCV prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>70</td>
</tr>
<tr>
<td>South Arabia</td>
<td>50</td>
</tr>
<tr>
<td>Poland</td>
<td>40</td>
</tr>
<tr>
<td>Brazil</td>
<td>40</td>
</tr>
<tr>
<td>Japan</td>
<td>33</td>
</tr>
<tr>
<td>Thailand</td>
<td>20</td>
</tr>
<tr>
<td>Italy</td>
<td>15</td>
</tr>
<tr>
<td>India</td>
<td>15</td>
</tr>
<tr>
<td>Demark</td>
<td>10</td>
</tr>
<tr>
<td>USA</td>
<td>5</td>
</tr>
<tr>
<td>Kenya</td>
<td>5</td>
</tr>
<tr>
<td>Scotland</td>
<td>2</td>
</tr>
</tbody>
</table>

Esteban in Viral Hepatitis 2005
HCV Epidemics Caused by Hemodialysis and Unsafe Injection

- **Hemodialysis, 14 cases, Baiyin**
- **Dialysis, 20 cases, Taiyuan**
- **Dialysis, 10 cases, Wulate**
- **Reuse of medical instruments, 56 cases, Hailin**
- **Mini-invasive surgery, 99/120, Donggang**
- **Dialysis, 30/75, Huainan**
- **Unsafe injection, >100 cases, Fengyang**
- **Hemodialysis, 10 cases, Xuzhou**
- **Hemodialysis, 19 cases, Huoshan; 9 cases, Shouxian; 15 cases, Anqing; 7 cases, Luan**
- **Blood transfusion, 64 cases, Pingtang**
- **Unsafe injection, 123 cases, Zixin**
Reported HCV Cases Are Increasing in China

Progression of HCV Infection to Severe Liver Disease
HCC currently represents the major cause of liver-related death in patients with HCV-related cirrhosis³

HCC = hepatocellular carcinoma;  
CHC = chronic hepatitis C

The most frequent complication is HCC which occurred in 20.5% of cirrhotic patients.

HCC represents the most frequent first complication in HCV- and HBV/HCV-related cirrhosis.

*Cirrhotic patients (N = 254 follow up of 93 months (range 14–194 months)

The Outcome of HCV Infection in Paid Chinese Plasma Donors

HCV infection

100% (N = 379)

Chronic hepatitis

78.7%

HCV spontaneous clearance

21.3%

Liver cirrhosis

10.3%

Hepatitis

68.4%

Cirrhosis

7.4%

HCC

2.9%

Other disease-related mortality

4.2%

Liver-related mortality

4.0%

Liver cirrhosis or HCC developed in one-tenth of patients, with an overall mortality of 8.2%

HCC = hepatocellular carcinoma

Major Challenges in the management of Hepatitis C Patients
Challenges in the Diagnosis and Treatment of Hepatitis C Patients

Low Awareness

Low Diagnostic Rate

Low Treatment Rate

Awareness of HCV Is Low

Public hepatitis awareness online survey in 2012 (N = 4,988)

Do you know what HCV is?

- Only 14% of people are aware of hepatitis C

Is HCV curable?

- 43% of people believe hepatitis C is not curable

- 78% of people have not been tested for anti-HCV
Importance of Expanding Testing and Treatment to Impact the Global Prevalence of HCV Infection

- 170 Million persons chronically infected

Efficacy of treatment (%)

- 2011 (70%~75%)
- 2002 (54%~56%)
- 1998 (42%)

Percentage of treatment (%)
Only 1% of Diagnosed CHC Cases Received Antiviral Treatment in China

Estimated HCV infected subjects in China: 10 M

HCV cases reported in 2013: 223,094

~1% HCV cases treated
Greater disease awareness is needed to drive screening, diagnosis and treatment for holistic management of hepatitis C patients.
Summary

- The hepatitis C burden continues to grow in the Asia-Pacific region
  - A large proportion of patients with chronic HCV infection remain undiagnosed
  - Hepatitis C infection is associated with a significant risk of progression to cirrhosis and subsequently HCC, which currently represents the major cause of liver-related death
Acknowledgments

Prof. Jidong Jia, Beijing Friendship Hospital, China

Prof. Lai Wei, Peking University People’s Hospital, China

Dr. Fuqiang Cui, China CDC, Beijing
Thank you !