HV Epidemiology and Burden in Chelyabinsk Region

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HAV incidence/100 000 in ChR

ChR population as of October 31, 2017 – 3,5 MM, including cities (82,6%), versus Russia

Данные Управления Роспотребнадзора по Челябинской области
Acute and chronic HBV and HCV (incl. chHBV and chHCV)

Unpublished data compiled by Center for Disease Analysis and register holder
### Chronic HCA prevalence in TOP10 regions RF in 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>ChVHC/ 100 000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Сахалинская обл.</td>
<td>87,94</td>
</tr>
<tr>
<td>С-Петербург</td>
<td>84,34</td>
</tr>
<tr>
<td>ЯНАО</td>
<td>65,36</td>
</tr>
<tr>
<td>Москва</td>
<td>64,15</td>
</tr>
<tr>
<td>Новосибирская обл.</td>
<td>63,97</td>
</tr>
<tr>
<td>Челябинская обл.</td>
<td>55,42</td>
</tr>
<tr>
<td>Нижегородская обл.</td>
<td>53,41</td>
</tr>
<tr>
<td>Самарская обл.</td>
<td>53,1</td>
</tr>
<tr>
<td>Камчатский край</td>
<td>52,73</td>
</tr>
<tr>
<td>Ненецкий АО</td>
<td>48,16</td>
</tr>
</tbody>
</table>

*Estimated n HCV patients in ChR – 108660*
HCV elimination in ChR by 2030: myth or reality?

Key health sector cascade efforts: current state in ChR?

Understanding the current state in ChR involves examining various cascade efforts in the following areas:

1. **Awareness and prevention**
   - HCV burden
   - Community awareness: mass media, Internet
   - Risk group awareness
   - Primary care awareness
   - Prevention campaign

2. **Testing and diagnosis**
   - HCV burden
   - Testing rate max. 43%
   - Screening programs available
   - Integration of GP and medical specialists
   - Testing extrahepatic HCV

3. **Follow-up and access to professional health care**
   - Integration of GP and medical specialists
   - Testing extrahepatic HCV
   - Higher GP role
   - Access to care for diagnosed patients

4. **Access to treatment**
   - Providing AVT for HCV
   - Limited fibrosis
   - Access to direct-action AVT drugs
   - AVT financing
   - Patient register available
   - New tested case reporting
   - Evaluation of outcomes

5. **Monitoring and evaluation**

Road to Elimination: Barriers and Best practices in Hepatitis C Management. BCG, Boston, 2017
ChR: ChHV etiology, n = 30057

Генотип 1: 3237; 40%
Генотип 2: 4317; 53%
Генотип 3: 539; 7%
Генотип 4 - 6: 7; 0%

HVC genotypes

HCV mono-infections/ patients’ register without SVR – 21790

ChVHC fibrosis stages as comparable with the Russian HV register

Данные Федерального Регистра больных вирусными гепатитами (2016) и регионального сегмента Челябинской области (13 октября 2018)
ChHCV health care cascade in ChR in 2015

Estimated n infected: 4,5% of ChR population\(^1\)  
x viremia prevalence (71%)

Estimated n diagnosed (HCV-PHK +) = Total infected x share diagnosed (43%)\(^2\)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total infected</td>
<td>103 350</td>
</tr>
<tr>
<td>Earlier diagnosed</td>
<td>41 240</td>
</tr>
<tr>
<td>Secondary diagnosis</td>
<td>1 960</td>
</tr>
<tr>
<td>Newly detected</td>
<td>5 310</td>
</tr>
<tr>
<td>Estimated n diagnosed</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Чуланов В.П., Пименов Н.Н., и др. Терапевтический архив 2015; 11: 5-10
Projected ChHCV epidemiology pattern change in ChR: WHO scenario

- Gradual increase in treated patients up to 3,320/year;
- Gradual increase in primary cases detected up to 7,270/year;
- Gradual incidence decline down to 530 cases/year;
- ≥F2 express fibrosis treatment.

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary cases</td>
<td>1,960</td>
<td>1,960</td>
<td>2,940</td>
<td>4,400</td>
<td>6,600</td>
<td>7,270</td>
</tr>
<tr>
<td>N treated</td>
<td>110</td>
<td>970</td>
<td>1,460</td>
<td>2,550</td>
<td>3,320</td>
<td>3,320</td>
</tr>
<tr>
<td>Infected cases</td>
<td>5,310</td>
<td>5,340</td>
<td>4,810</td>
<td>2,410</td>
<td>1,060</td>
<td>530</td>
</tr>
<tr>
<td>Fibrosis stages</td>
<td>≥F1</td>
<td>≥F1</td>
<td>≥F2</td>
<td>≥F2</td>
<td>≥F2</td>
<td>≥F2</td>
</tr>
<tr>
<td>Age groups on treatment</td>
<td>15-64</td>
<td>15-64</td>
<td>15-64</td>
<td>15-64</td>
<td>15-69</td>
<td>15-69</td>
</tr>
<tr>
<td>SVR</td>
<td>59%</td>
<td>94%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
</tbody>
</table>

- Disease burden:

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>n ChHVC patients (with viremia)</td>
<td>108,660</td>
</tr>
<tr>
<td>Mortality from liver disease outcome</td>
<td>156</td>
</tr>
<tr>
<td>HCC rate</td>
<td>145</td>
</tr>
<tr>
<td>Decompensated cirrhosis</td>
<td>418</td>
</tr>
</tbody>
</table>

Unpublished data compiled by Center for Disease Analysis and register holder
Projected ChHCV epidemiology pattern: WHO strategy vs basic scenarios

- **Total treated**
  - Increased n treated (2015-2030): 22,453
  - WHO scenario: 21,351

- **SVR rate**
  - Increased n with SVR CBO (2015-2030): 21,351

- **Total infected**
  - Decrease in n infected (2015-2030): 55,078

- **Newly infected**
  - Less new cases (2015-2030): 42,122

Unpublished data compiled by Center for Disease Analysis and register holder
WHO strategy can meaningfully reverse ChHCV incidence in ChR to result in:
- 51% reduction of those infected
- 70% reduction of decompensated cirrhosis incidence
- 66% reduction in HCC incidence
Key health sector cascade efforts for HCV control: current state in ChR

**Awareness and prevention**
- VHC burden in ChR
- Community awareness: mass media, Internet
- Risk group awareness
- ? Primary care awareness
- Prevention campaigns

**Testing and diagnosis**
- HCV diagnosis rate max. 43%
- Screening programs available

**Follow-up and access to treatment**
- ? Integration of GP and medical specialists
- ? Extrahepatic HCV testing
- !! Increased role of GP
- !!! Diagnosed patient’s access to health care

**Access to treatment**
- Providing AVT HCV
  - Limited fibrosis
- Access to AVT drugs
- AVT financing
  - ChR budget/program
  - MHI
  - Patient’s copay

**Integrating health care into penitentiaries and health sector systems**

**Monitoring and evaluation**
- Patients’ register available
- Primary case reporting
- Evaluation of outcomes

Road to Elimination: Barriers and Best practices in Hepatitis C Management. BCG, Boston, 2017
VHC elimination: testing and diagnosis

Main barriers in implementation

- Screening plans or regulations unavailable (not our case: СП 3.1.3112-13 “VHC prevention"
  (Decree 58 of October 22, 2013)

- Vaguely identified groups with HCV above average incidence, including age cohorts (blood recipients, patients after physician/coach follow-up exercises)

- The patient has to go far to be screened.

- PAVT of patients lost to follow-up after screening without PCR confirmation.

- GP do not comply with screening regulations due to lack of knowledge and time, nor consider ChHCV a priority.

- Limited access to treatment results in lost motivation to screening
GP criteria for testing antibodies to HCV

- Increased liver enzymes: 96%
- HIV: 84%
- Clinical symptoms: 82%
- Behavioral and other risks: 73%
- Chronic liver diseases: 70%
- Other chronic organ and system diseases: 47%
- Age cohorts: 24%
- I do not test for VHC: 0%

GP survey in ChR, 19.05.2018
ChHCV treatments provided in 2017 - 2018

✓ Three-tier testing/treatment (also AVT) and D follow-up provided to ChVHC and viral cirrhosis patients (Decree 2111 of 13.12.2016 by ChR Ministry of Health: On VH Adult Patient Routing in ChR.

   1. Communicable disease surgeries at polyclinics (or internists and GP, if no infectious disease physician is available);
   2. Inter-district liver disease center in ChR south (Magnitogorsk);
   3. Liver Disease Center of ChR Clinic, Ministry of Health RF (Chelyabinsk).

✓ Modern VH serologic and molecular diagnosis available;

✓ Intensive use of non-invasive fibrosis testing (Fibroscan US transient elastometry) at LDC CHR;

✓ HCC screening for ChHBV (any fibrosis grade) and ChVHC (F3-F4) and subclinical Cushing syndrome (SCS);

✓ HVB and HAV vaccine prophylaxis;

✓ Systematic health worker training (all levels and specialties) by leading Russian professionals: 2017 - 2018 ChR conference: Hepatitis Virus Agenda; 2 inter-disciplinary roundtables on HCV off-liver patterns; and presentations at regional conferences of other medical specialties (nephrologists, GP);

✓ Interface with patient associations (hemophilia, nephrology).

✓ Extended collaboration of LDC ChR with other medical professionals (nephrologists, endocrinologists, rheumatologists, hematologists, etc...). Involving nephrology, endocrinology and other patient in multi-disciplinary follow-up and AVT.
GP-detected ChHCV patients under follow-up by infectious disease physician

or, if unavailable, referral for consultation to Liver Disease Center ChR Clinic

GP survey, 19.05.2018
HCV elimination: providing follow-up and access to treatment

Main barriers in implementation

1. Earlier diagnosed, not having treated due to lack of AVT drugs, not reported.
2. Patients, detected outside public health sector, do not reach medical specialists.
3. Ex-convicts.
5. Diagnosed patients do not get follow-up at their residence due to various reasons (infectious disease physician or GP unavailable).
6. Patients are not routed as required by ChR Decree 2111 of December 13, 2016.
Financing and total treated under the Public Commitments Program: Developing ChR Health Sector in 2015-2018 (ChHBV – blue, ChHCV – orange)
### Basic data, treatment regiments and SVR in H1 patients treated under the ChR Program in 2016-2017, n=99

#### Summary:
AVT effectiveness in ChVHC H1 patients, provided under Public Commitments Program: Developing ChR Health Sector in 2016-2017, matched the respective clinical trial and global clinical practice data.

| Age | 54 (29-71) |
| Liver cirrhosis, n (%) | 67 (79%) |
| Treated earlier, n (%), including | 19 (19%) |
| - Triple with ID | 4 (5%) |
| - AVT drugs without IFN | 1 (1%) |
| EVVD, n (%) | 28 (28%) |
| DM2, n (%) | 14 (14%) |
| CVD, n (%) | 31 (31%) |
| Renal problems, n (%) | 18 (18%) |
| GIT, n (%) | 43 (43%) |
| Cryoglobulinemia, n (%) | 32 (32%) |
| Early treatment termination due to SAE, n (%) | 4 (4%) – 2 SVR, 2 – no response |

#### Response to AVT, n (%):
- SVR12 | 90/91 (99%) |
- relapse | 1 (1%) |
- no data | 4 |
Thank you!