Viral Hepatitis in the Circumpolar Region of Russia

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Presentation Outline

• Hepatitis A
• Hepatitis B
• Hepatitis D
• Hepatitis C

– Incidence and Prevalence of the Disease in Russian Federation
– Viral Genotype and Subtype Distribution

Northern Regions of Russia

Population and ethno-cultural distribution of the inhabitants in the Russian Arctic (2010)

The Russian Arctic

1. Murmanskaya region
2. Arkhangelskaya region
3. Nenetsky region
4. Republic of Komi
5. Yamalo-Nenetsky region
6. Khanty-Mansiysky region
7. Krasnoyarsky region
8. Rep. of Sakha (Yakutia)
9. Magadanskaya region
10. Kamchatskaya region
11. Chukchi region

Source: Census data, Russia, 2010

The Circumpolar World
The Russian Arctic

1. Murmanskaya region
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5. Yamalo-Nenetsky region
6. Rep. of Sakha (Yakutia)
7. Krasnosyarsky region
8. Krasnoyarsky region
9. Magadanskaya region
10. Kamchatskaya region
11. Chukski region

Hepatitis A

Incidence of Acute Hepatitis A
1989-2013, Russia

Rate of anti-HAV IgG in Different Age Groups
2004-2011, Russia

Decrease in the Seroprevalence of HAV
2004-2009, Russia

Decrease in the Seroprevalence of HAV
2004-2009, Russia
Incidence of CHB in different age groups
Russia, 2011

Incidence of HBV carriage in Russia and The Russian Arctic 1998-2013 (per 100 000 population)

Serum samples from Chukchi Region

Prevalence of HBsAg-positive people in general population of Chukchi AD

HBV Genotypes in Russia
HDV co-infection among CHB cases in Chukchi Region

HDV Genotypes in Russia

Hepatitis C

Incidence of CHC in Russia and The Russian Arctic, 1999-2013 (per 100 000 population)

Incidence of CHC in different age groups Russia, 2010

Rate of anti-HCV detection in General Population in Moscow, 2005-2009

Hepatitis C Incidence of CHC in Russia and The Russian Arctic, 1999-2013 (per 100 000 population)
Prevalence of anti-HCV-positive people in general population of Chukchi AD

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>anti-HCV (+)</th>
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</thead>
<tbody>
<tr>
<td>Indigenous, n=385</td>
<td>2.3%</td>
</tr>
<tr>
<td>Non-indigenous, n=75</td>
<td>5.3%</td>
</tr>
</tbody>
</table>

p=0.06

HCV Genotypes in Russia

HCV Genotypes in Different Age Groups

Distribution of rs12979860 SNP genotypes in Russia

Summary (1)
1. Incidence of HepA in the Russian Arctic is lower than in the other regions of Russia.
2. Genotype 1A prevails in most regions. 3A has substantial prevalence in some regions.
3. Acute HepB has been decreasing in Russia due to extensive immunization program. Incidence of chronic HepB is still high especially in Arctic region.
4. HBV genotype D is dominant in Russia; in some regions, a substantial percentage of cases belong to genotype A; genotype C is found mostly in the Chukchi region.
Summary (2)

5. The predominant genotype of HDV in Russia is 1, but in Yakutia half of the cases belong to genotype 2.

6. The rate of HDV-infection in Chukchi region is significantly higher compared to the majority of the other parts of the country.

7. Incidence of chronic Hep C has been increasing and is significantly higher in the Russian Arctic compared to the other regions of Russia.

8. For HCV, the most prevalent genotype in Russia is 1b, followed by 3a. In indigenous people of Chukchi Region the only HCV genotype found is 1b.