

Vaccine prophylaxis of hepatitis B in children in Nizhny Novgorod province

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Viral hepatitis B (VHB) occupies the leading place in the structure of Viral hepatitis morbidity in the Nizhny Novgorod province. The proportion of VHB during last several years varied from 44% to 57%. The increase of VHB morbidity was observed in the province in 1990s. The highest morbidity level was registered in 1995. The morbidity rate in the province increased up to 40.3 cases per 100,000 population when the average rate in the Russian Federation was 35.6 cases per 100,000 population (fig. 1).

The morbidity rate in the city of Nyzny Novgorod with 50% of the province population was 66.7 per 100,000 population. During last years VHB cases were registered at all administrative territories of the province with higher rates among urban population (fig. 2).

The wide spread of hepatitis B virus (HBV) in population is proved not only with the high acute VHB morbidity rates but also with the increase of HBV carriage prevalence that grew from 32.1 cases per 100,000 population in 1992 to 132.5 cases per 100,000 population in 1997.

During last 5 years 4,715 cases of acute VHB and 19,325 cases of HBV carriage were diagnosed in Nyzny Novgorod province. The official notification of chronic VHB cases was implemented in 2000; the chronic VHB morbidity rate was 35.3 cases per 100,000 population.

During last years the intensity of epidemic process was determined by young adults; their proportion varied from 70% to 80%.

In spite of some decrease of the number of cases in 1998-1999 the VHB morbidity rates among adolescents and young adults had clear trend for the growth; the rate in the population group 15-19 years of age was 182.2 cases per 100,000 population and in the group 20-29 years of age - 105 cases per 100,000 population (fig. 3). The trends in VHB morbidity correlated with the spread of injecting drug use in all districts as well as in the whole province (fig. 4).

The wide spread of the HBV was the consequence of activation of both routes of virus transmission - via drug use and during sexual contacts.

The increase in morbidity rates and low efficacy of traditional prevention measures determined the necessity of immunization against VHB in the province. According to

the provincial programme "Vaccine prophylaxis" several population groups with the high risk of HBV infection were subjects for immunization:

- children born by HBV positive mothers;
- children from orphanages, and
- health care workers.

The pilot project for children immunization against VHB was realized together with "Rostropovich - Vishnevskaya Foundation" in one district of the Nizhny Novgorod province. In frames of this project 96.7% of children up to 17 years of age were immunized. At present only new-born children are vaccinated in this district.

Taking into consideration the complex epidemiological situation and low efficacy of selective immunization of "risk groups" special plan for realization of school programme "Let's say "no" to hepatitis B!" with vaccination of schoolchildren on expenses of their parents. Special educational activity was performed in 6 districts; it allowed to realize successfully the expanded children immunization programme that was developed together with "Rostropovich - Vishnevskaya Foundation". The programme "Vaccine prophylaxis" was developed in accordance with the agreement "On donation" that was signed between the Provincial Department of Public Health and the Foundation.

According to this programme several measures were planned:

- annual immunization of newborn children that were not immunized with vaccine procured with the federal support;
- immunization of graduate schoolchildren and of graduate students of medical colleges;
- immunization of children and adolescents staying in detention centers;
- step-by-step immunization of schoolchildren from 8th to 3rd grade.

Over 500,000 children and adolescents will be immunized against hepatitis B in the province in 2000-2003.

During the preliminary and initial stages of programme realization special package of documents was prepared:

- the decree of provincial administration; joint orders of the public health, education and surveillance administration; newsletters with recommendations.

Special meetings, workshops and seminars for health care workers were organized in the province and in separate districts; educational activity was organized for general public (with participation of mass media) and for parents.

Special work-plan for realization of the programme was developed, the calendar of vaccine procurement and the scheme for vaccine dispatching.

To improve the process of vaccine dispatching six inter-district storage centers were created that were responsible for transportation of vaccine to separate districts. Additional measures were realized for improvement of vaccine transportation and storage. For this purpose 8 special big refrigerators, 140 home refrigerators and 858 cold boxes were sent to local medical institutions responsible for immunization.

It is necessary to underline that during programme development specific characteristics of hepatitis B epidemiology in the province were taken into consideration as well as recommendations of national immunization calendar. As a result during the first phase immunization of adolescents will be performed that will allow to influence the intensity of epidemic process effectively and in short time. From the beginning of programme realization over 200,000 adolescents were immunized with Engerix B vaccine (92.1% of the total number of adolescents to be immunized). The immunization of children born in the year 2000 will be completed by August 2001; this immunization was started during the second part of the year 2000 due to the financial support from federal funds and from the local fund of obligatory medical insurance.

Figure 1. Trends in viral hepatitis B morbidity in Nizhny Novgorod province

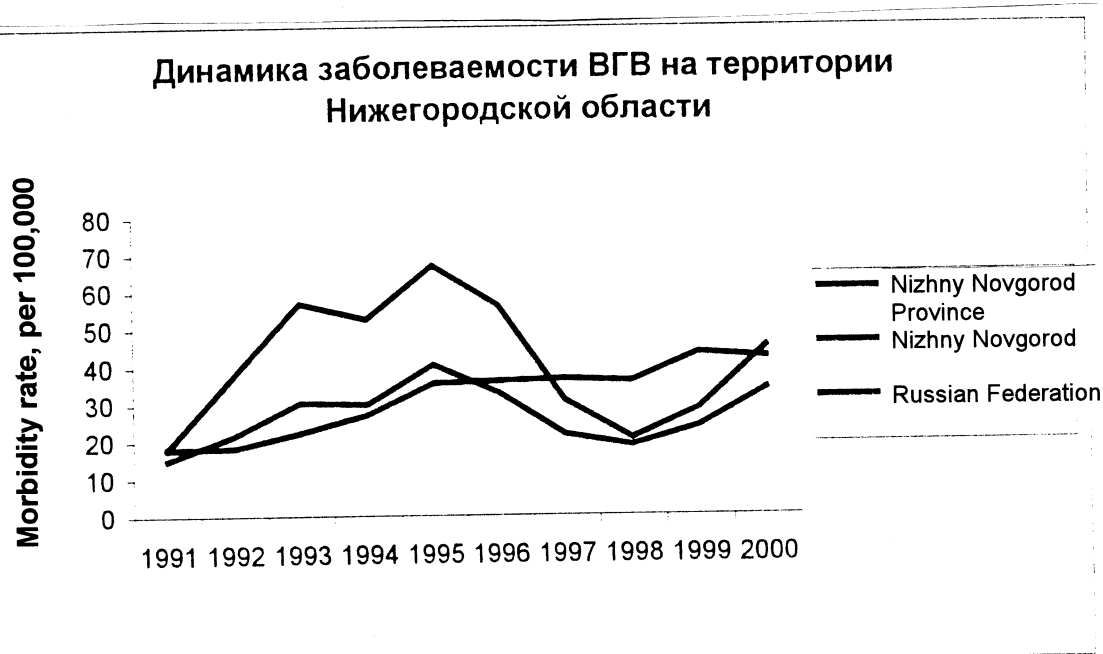
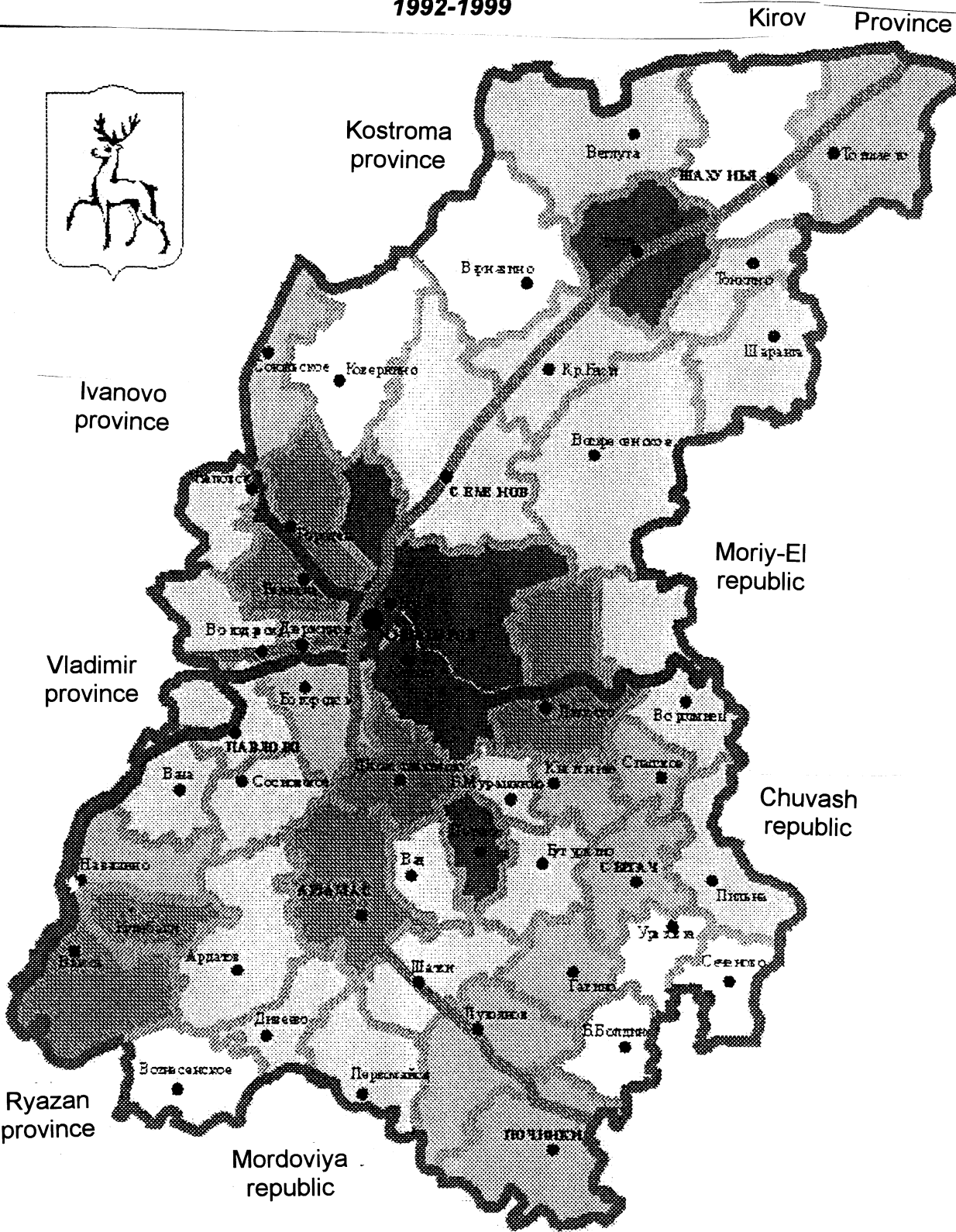


Figure 2. Viral hepatitis B morbidity rates in Nizhny Novgorod province, 1992-1999



Условные обозначения:

- Province center
- District centers
- Province border
- District borders

Hepatitis B morbidity rate
In Nizhny Novgorod province
1992-1999

- 30 and more
- 20 - 30
- 10 - 20
- 5 - 10
- 0 - 5

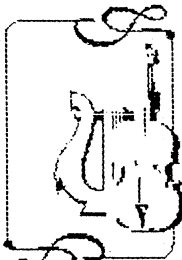


Figure 3. Viral hepatitis B cases in Nizhny Novgorod province - by age

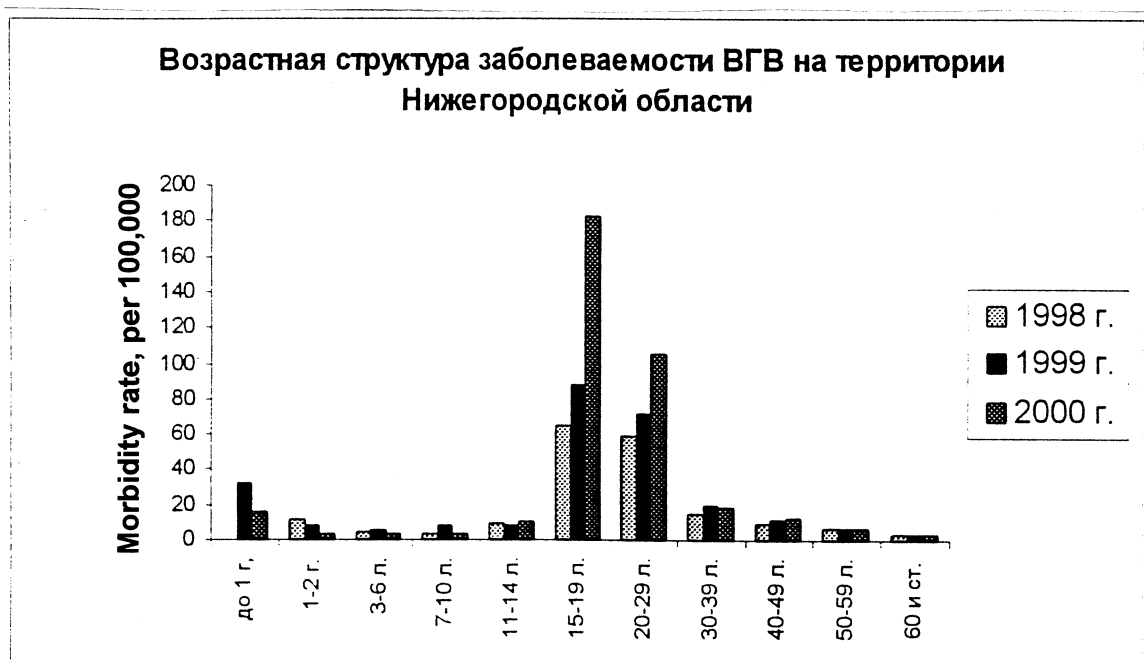


Figure 4. Viral hepatitis B and C cases and drug use in Nizhny Novgorod province

