

Rapid communications

HEPATITIS A OUTBREAK IN A ROMA VILLAGE IN EASTERN SLOVAKIA, AUGUST-NOVEMBER 2008

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We describe an outbreak of hepatitis A in Lomnička, a village in the eastern part of Slovakia. The outbreak was limited to the village and did not spread either to other districts of Slovakia or to the neighbouring countries. The number of cases reported from 28 August to 30 November 2008 was 298. All cases but one occurred in the Roma population. The outbreak was associated with low socio-economic conditions which facilitated person-to-person transmission. No common source of the outbreak was verified.

Background

In Slovakia, hepatitis A is a mandatorily notifiable disease [1]. The national surveillance is coordinated by the Chief Public Health Officer of the Slovak Republic who is the head of the Public Health Authority of the Slovak Republic (PHA SR), an institution in charge of 36 Regional Public Health Authorities (RPHAs) covering 79 districts of the country.

The case classification is in accordance with the European Union (EU) case definition of hepatitis A [2].

Physicians and laboratory microbiologists are liable to report any confirmed or suspected case of acute viral hepatitis A to the epidemiologist of territorially relevant RPHA. Data from all regions are then collected in the National Central Register. The Epidemiological Information System (EPIS) is used for the purpose of data reporting, collecting, processing and analysing. It is a real

time system and thus new data about either sporadic cases or outbreaks can be evaluated every day.

The population of Slovakia was around 5.4 million as of 30 June 2008 [3]. According to the official population census, in 2001, the number of Roma inhabitants was 260,605. However, this seems to be an underestimate and the actual proportion of the Roma population is likely to be much higher. According to the World Bank study published in 2003, there were almost half a million Roma living in Slovakia [4]. The majority (about 57%) of the Roma population lives in eastern Slovakia.

Hepatitis A in Slovakia

The overall incidence of hepatitis A in Slovakia has shown a constantly decreasing trend in the last decades. The rates declined from more than 50 cases per 100,000 population in 1988 to the lowest ever recorded incidence of 7 cases per 100,000 in 2007. However, peaks of incidence have occurred in periodical intervals (every few years) since 1988, probably due to increasing numbers of non-immune children. Each peak, however, has represented a lower incidence than the previous one (Figure 1).

In recent years, mostly sporadic cases and rare small outbreaks have been reported. The outbreaks often affected the Roma population and were associated with low hygienic conditions and person-to-person transmission.

FIGURE 1

Incidence rates of hepatitis A per 100,000 population, Slovakia, 1988 – 2008 (as of 30 November 2008)

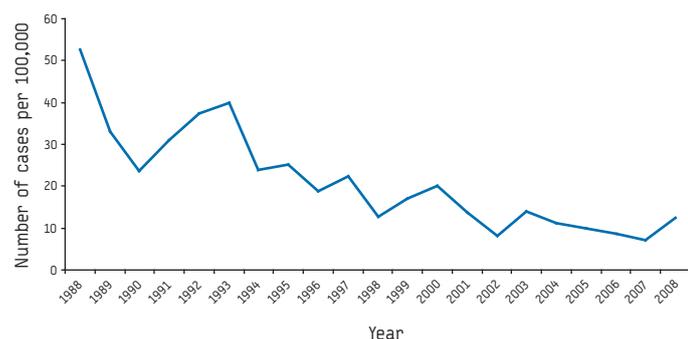
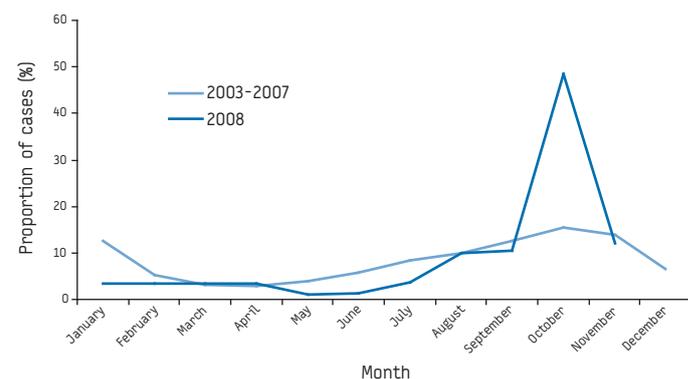


FIGURE 2

Seasonality of hepatitis A in Slovakia, 2003-2007 and January - November 2008



In 2008, a total of 667 cases of hepatitis A (incidence of 12.4 per 100,000 population) have been reported to the EPIS database, as of 30 November 2008. This includes nine outbreaks involving 485 cases.

The seasonal distribution of cases of hepatitis A in 2008 shows a typical pattern observed also in the previous years, with the highest proportion of cases reported in September, October and November (Figure 2).

The notification reports include information on whether the case is associated with "low" or "normal" hygienic standard. In 2008, 536 cases were recorded as "low hygienic standard" (80% of the total, incidence of 107.2 per 100,000 population) and 131 as normal hygienic standard (incidence of 2.7 per 100,000 population). Although the reports do not contain data on the ethnic origin of the cases, on the basis of available evidence, the Slovak public health authorities generally consider cases recorded with "low hygienic standard" to have occurred in the Roma population, reflecting the poor living conditions of this group.

Among the 131 hepatitis cases reported in 2008 and associated with "normal hygienic standard" (thus assumed to have occurred in the majority population), 14 were imported cases: nine from the Czech Republic, three from Egypt, one from Madagascar and one from Tunisia.

As many as 495 of the 667 cases reported in 2008 (74%) occurred in children below the age of 10 years, and the age-specific incidence rate was highest in this group. This can be linked with the fact that most cases were assumed to have occurred in the Roma population where children are exposed to the hepatitis A virus (HAV) at an early age, due to poor socio-economic living conditions.

The geographical distribution of cases reported in 2008 shows the highest incidence rates in two districts: Stará Ľubovňa with 720 cases per 100,000 population and Bardejov with 110 cases per 100,000 population, in comparison with the average incidence rate of 12 cases per 100,000 population for the whole country (Figure 3). The two most affected districts are situated in the Prešov region which has the highest density of the Roma population in Slovakia. Also, four of the nine outbreaks reported in 2008 occurred in these

two districts. The largest one involving 298 cases occurred in the village of Lomnička, district Stará Ľubovňa.

Hepatitis A outbreak in the village of Lomnička

Lomnička is a small village with population of 2,044 situated in the north-east of Slovakia, in the district Stará Ľubovňa. Almost all (2,034, more than 99%) inhabitants of the village are Roma, and close to 60% are below the age of 18 years.

The sanitation and living conditions in the village are very poor. There is access to running water service but the supply is often stopped in households that do not pay the fees. Waste and sewage water disposal is inadequate.

The first case in the outbreak was hospitalised on 27 August 2008, followed by further eight hospitalised in the next two days. An interval with none or very few cases was followed by an explosive wave with the peak on 17 October 2008 (26 cases hospitalised in a day). After that the occurrence of new cases gradually declined with none or single cases reported from 14 to 30 November 2008.

In all, 298 cases of hepatitis A, all of them hospitalised, were reported from the village of Lomnička between 27 August and 30 November 2008 (Figure 4). The most affected were children below 10 years of age. Of the cases, 148 were below 6 years of age, 142 were between 6 and 10 years old, seven were in the age group of 11-18 years, and only one was adult.

Control measures

The outbreak was officially declared on 28 August 2008, when the first four cases of hepatitis A occurred. Control measures were launched within 24 hours.

Control measures were carried out by the PHA SR and RPHA Stará Ľubovňa. The response action was coordinated by the Chief Public Health Officer and the PHA SR. He also called the regional anti-epidemic committee and the crisis committee, who announced an emergency situation in the district Stará Ľubovňa on 15 October 2008. This allowed potential restriction of movement of inhabitants to avoid spread of infection. The emergency situation was ceased on 22 October 2008. A temporal outpatient clinic was established in the village. The chief hygienist ordered to reprofile the hospital beds in the district of Stará Ľubovňa as well as in neighbouring

FIGURE 3
Incidence rates of hepatitis A per 100,000 population, by region, Slovakia, 2008

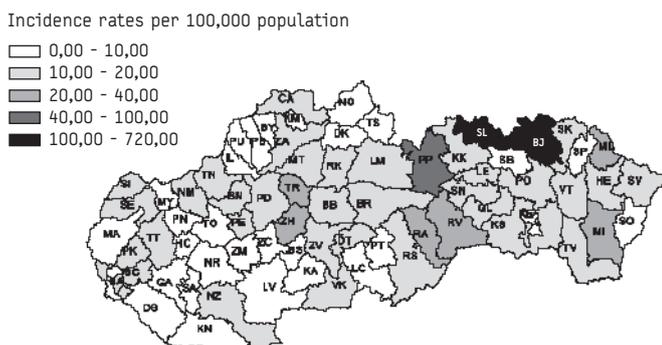
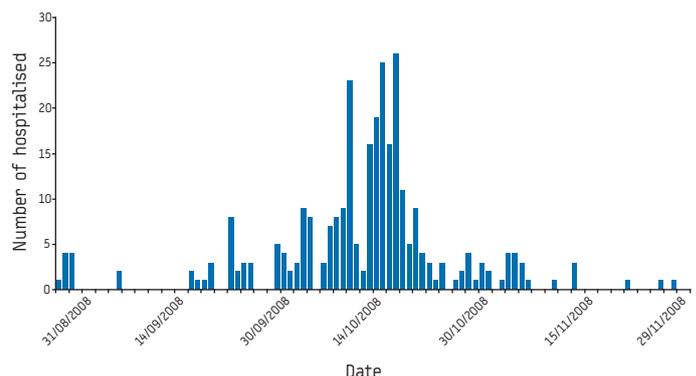


FIGURE 4
Number of hospitalised cases of hepatitis A in Lomnička village, Slovakia, 27 August – 30 November 2008 (n=298)



districts to make them ready to receive more hepatitis A patients. The EPIS served as a very good communication tool for public health professionals, medical doctors and the general public [5].

Standard control measures to be applied in the foci of hepatitis A infection [6] were implemented - hospitalisation and treatment, contact tracing, medical supervision and disinfection. To prevent further spread of infection, control measures were implemented also in the food facilities, in the kindergarten, and in the primary and secondary school. Furthermore, water tanks as source of drinking water were provided.

Post-exposure and preventive vaccination was also administered. On 6 September, the day after two hepatitis A cases were reported in children attending the local kindergarten, mass vaccination started including family members of cases and children below 15 years of age attending the kindergarten and the elementary school in the village. As the next step, vaccine was provided to all young people up to 18 years of age and health professionals. In the end, the inhabitants of the neighbouring village of Podolinec were vaccinated. As of 30 November 2008, 1,814 children (almost 80% of all children below 15 years of age) and 742 adults have been vaccinated in the district.

Information on hepatitis A was disseminated via newspapers, radio and television. Educational leaflets on hepatitis A were distributed in public places (kindergarten, primary and secondary school, hospital, outpatient clinic, post office). Information was also available at the websites of the PHA SR and the RPHA of Stará Ľubovňa.

Conclusion

The outbreak of hepatitis A described in this paper was limited to one village. Since the end of November no further cases have been reported from the area. Considering the incubation period (max. 50 days), this shows that the control measures have proven effective and the outbreak has been contained. Nevertheless, this example shows that outbreaks of hepatitis A can affect relatively large number of people, particularly in susceptible populations.

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