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HEPATITIS A IN POLAND IN 2013*

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ABSTRACT

OBJECTIVE. The aim of the study is to assess the epidemiological situation of hepatitis A in Poland in 2013 compared to previous years.
MATERIAL AND METHODS. The evaluation was carried out on the basis of the results of the analysis of data from the annual bulletin "Infectious diseases and poisonings in Poland in 2013" and "Vaccinations in Poland in 2013", the information from individual diseases forms and epidemiological investigations forms for hepatitis A outbreaks, sent by sanitary-epidemiological stations to the Department of Epidemiology of NIZP-PZH.
RESULTS. In 2013, 48 cases of hepatitis A were registered in Poland. The incidence per 100000 inhabitants was 0.12, and in particular provinces it ranged from 0.05 in the Kujawsko-Pomorskie province to 0.26 in the Wielkopolska province. The incidence of hepatitis A for men and women was at a similar level and amounted to 0.13 and 0.12/100000. In 2013 imported cases accounted for 45.8% of the total number of hepatitis A cases. There were three outbreaks, where the total of 13 people fell ill.
SUMMARY AND CONCLUSIONS. 2013 saw a slight decrease in the number of cases compared to the previous year. Besides, there were no significant changes in the hepatitis A epidemiological situation. In Poland, there is still very low endemicity. Since several years, there has been a decline in the number of people vaccinated against hepatitis A. All of this affects the accumulation of a fairly large population of people susceptible to the infection, which may increase incidence. Although the current hepatitis A epidemiological situation in Poland is good, it still requires monitoring, analysis and constant observation within the structured epidemiological surveillance.

Keywords*: hepatitis A, epidemiology, public health, Poland, 2013*

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INTRODUCTION

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MATERIAL AND METHODS

The evaluation of the epidemiological situation of hepatitis A in Poland in 2013 was based on the results of the analysis of data from the annual bulletin "Infectious diseases and poisonings in Poland in 2013" and "Vaccinations in Poland in 2013" (Czarkowski MP et al., Warsaw, National Institute of Public Health-National Institute of Hygiene [NIZP-PZH] and Chief Sanitary Inspectorate [GIS]), data from individual diseases forms and epidemiological investigations forms for hepatitis A outbreaks, submitted to the Department of Epidemiology of the National Institute of Public Health-National Institute of Hygiene by sanitary-epidemiological stations. In addition, we used data from the Demographic Research Department of the Central Statistical Office.

RESULTS

In 2013 there was a downward trend in the number of registered cases of hepatitis A - 48 cases were

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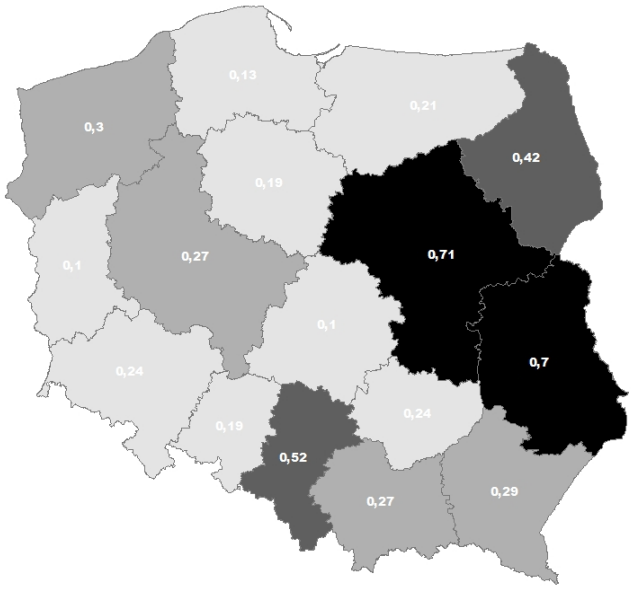

Fig 1. Hepatitis A in Poland in years 2008 – 2012. Median annual incidence per 100 000 population by province.

reported, that is, as much as 23 less than last year. All registered patients were hospitalized. The incidence per 100 000 inhabitants was 0.12 and was lower compared to the previous year, and the median for the period 2008-2011 (Fig. 1). In 2013 cases of hepatitis A accounted for 1.13% of all viral hepatitis cases in Poland. The cases of hepatitis A were registered in 13 provinces. The highest incidence was recorded in Wielkopolska - 0.26 per 100000 inhabitants. Compared with last year, a significant increase in incidence was observed in two provinces: Lodzkie and Wielkopolskie, while in three it did not change (Lubelskie, Pomorskie, Warminsko-Mazurskie) (Tab. 1).

The distribution of cases in different age groups looked differently than in previous years. Most cases were among people in the age groups 10-14, 40-44 and 45-49. The highest incidence was in the age group 10-14 years and it was 0.32/100 000. However, in the age groups 20-24, 25-29, 30-34, 35-39 years the incidence declined compared to the previous year. As in the previous year, the incidence of hepatitis A for men and women was at a similar level and amounted to 0.13 and 0.12/100 000 respectively. Larger differences were observed in the incidence by gender for each age group. In 2013 the highest incidence among men was attributable to the age of 10-14 years (0.42/100 000) and 40-44 years (0.4/100 000). In contrast, the incidence in women was highest in the age group 15-19 years (0.28/100 000) and in the group of 65-74 years (0.24/100 000) (Tab. I).

In contrast to previous years, the seasonality of disease was not clearly marked.

In 2012 a decrease was reported in the number of people vaccinated against hepatitis A. The total of 42 832 people were vaccinated, the same as in previous years most in the Mazowieckie province (36.3% of all vaccinated) (Tab. III).

Imported cases accounted for 45.8% of the total number of hepatitis A cases. Six patients were infected

Table I. Hepatitis A in Poland in 2012-2013. Number of cases, incidence per 100 000 population and hospitalization by provinces.

Provinces	2012			2013		
	Number of cases	Incidence	Number of hospitalizations (%)	Number of cases	Incidence	Number of hospitalizations (%)
Poland	71	0.18	68 (95.8)	48	0.12	48 (100)
Dolnośląskie	7	0.24	7 (100)	6	0.21	6 (100)
Kujawsko-Pomorskie	4	0.19	4 (100)	1	0.05	1 (100)
Lubelskie	3	0.14	3 (100)	3	0.14	3 (100)
Lubuskie	1	0.1	1 (100)	-	-	x
Łódzkie	2	0.08	2 (100)	4	0.16	4 (100)
Małopolskie	9	0.27	9 (100)	3	0.09	3 (100)
Mazowieckie	7	0.13	7 (100)	8	0.15	8 (100)
Opolskie	2	0.2	2 (100)	-	-	x
Podkarpackie	7	0.33	7 (100)	2	0.09	2 (100)
Podlaskie	1	0.08	1 (100)	-	-	x
Pomorskie	3	0.13	3 (100)	3	0.13	3 (100)
Śląskie	16	0.35	13 (81.3)	4	0.09	4 (100)
Świętokrzyskie	-	-	-	1	0.08	1 (100)
Warmińsko-Mazurskie	3	0.21	3 (100)	3	0.21	3 (100)
Wielkopolskie	3	0.09	3 (100)	9	0.26	9 (100)
Zachodniopomorskie	3	0.17	3 (100)	1	0.06	1 (100)

Table II. Hepatitis A in Poland 2012-2013. Nuber of cases, incidence per 100 000 population and by age, sex.

Age group (years)	2012						2013					
	Male		Female		Total		Male		Female		Total	
	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence
0-4	1	0.09	1	0.1	2	0.1	2	0.19	1	0.1	3	0.15
5-9	-	-	-	-	-	-	1	0.1	1	0.11	2	0.1
10-14	1	0.1	1	0.11	2	0.11	4	0.42	2	0.22	6	0.32
15-19	-	-	3	0.27	3	0.13	1	0.09	3	0.28	4	0.18
20-24	5	0.36	8	0.6	13	0.48	-	-	3	0.23	3	0.11
25-29	5	0.31	7	0.44	12	0.38	2	0.13	1	0.07	3	0.1
30-34	9	0.56	3	0.19	12	0.38	1	0.06	3	0.19	4	0.12
35-39	4	0.27	1	0.07	5	0.17	3	0.2	-	-	3	0.1
40-44	5	0.41	2	0.17	7	0.29	5	0.4	2	0.16	7	0.28
45-49	2	0.17	2	0.17	4	0.17	3	0.25	2	0.17	5	0.21
50-54	2	0.15	-	-	2	0.07	1	0.08	1	0.07	2	0.08
55-59	1	0.07	5	0.33	6	0.21	-	-	1	0.07	1	0.03
60-64	-	-	-	-	-	-	-	-	-	-	-	-
65-74	-	-	1	0.06	1	0.04	-	-	4	0.24	4	0.13
75+	1	0.12	1	0.06	2	0.08	-	-	1	0.06	1	0.04
Total	36	0.19	35	0.18	71	0.18	23	0.12	25	0.13	48	0.12

in Italy. Other cases, as in the previous years, were imported from the areas with high or intermediate endemicity. The infection occurred most often during tourist trips (Tab. IV).

In 2013 three hepatitis A outbreaks were recorded, including one where cases were associated with an outbreak of the international concern. From January 2013 to August 2014, the total of 1589 cases associated with the outbreak were registered in 13 European countries. In Poland in 2013 were six cases associated with this outbreak, five of which were classified and registered as one outbreak, as they occurred among persons staying at the same integration trip in Italy. The comparative analysis showed that hepatitis A virus strains isolated from three patients from Poland were identical to strains isolated in an outbreak of hepatitis A in Italy. Strains characteristic of outbreak sequence were also isolated from people in other countries, both those who have travelled to Italy and who have not. Sequenced strains belonged to genotype IA. In the course of the international epidemiological investigation, it was established that carriers in this outbreak were probably frozen berries. In the other two outbreaks, recorded in 2014 in Poland, 8 people fell ill.

Table III. Number and percentage of persons vaccinated in Poland against hepatitis A in the years 2012-2013, by voivodeship.

Voivodeship	2012		2013	
	Number of vaccinated	%	Number of vaccinated	%
Poland	39 362	100	42 832	100
Dolnośląskie	2781	6.5	2788	6.5
Kujawsko-Pomorskie	1715	4.0	1203	2.8
Lubelskie	589	1.4	745	1.7
Lubuskie	385	0.9	634	1.5
Łódzkie	1728	4.0	1989	4.6
Małopolskie	4161	9.7	3888	9.1
Mazowieckie	13991	32.7	15564	36.3
Opolskie	461	1.1	622	1.5
Podkarpackie	851	2.0	1022	2.4
Podlaskie	478	1.1	471	1.1
Pomorskie	3447	8.0	4079	9.5
Śląskie	3706	8.7	3880	9.1
Świętokrzyskie	422	1.0	354	0.8
Warmińsko-Mazurskie	831	1.9	769	1.8
Wielkopolskie	2421	5.7	2589	6.0
Zachodniopomorskie	1395	3.3	2235	5.2

Table IV. Number of imported hepatitis A cases in Poland in 2013 by country of exposure.

Continent	Country	Number of cases
Africa n=8	Egypt	5
	Morocco	1
	Cape Verde	2
Asia n=4	Israel	1
	Thailand	1
	Tajikistan	1
	Kazakhstan	1
Europe n=10	Bulgaria	1
	Croatia	1
	Italy	6
	Russian Federation	2
Total		22

SUMMARY AND CONCLUSIONS

1. In 2013 there was a decline in the incidence. In Poland, there is still very low endemicity, characterized by the low incidence (0.12/100000), the presence of local endemic outbreaks and a high percentage of imported cases.

2. In 2013, in Europe, there were three outbreaks of the HAV infections of the international concern. First of them was recorded in the Nordic countries (Finland, Denmark, Sweden and Norway), while another occurred among travelers returning from Egypt to several European countries. Each of these outbreaks had more than 100 cases. Vehicle of infection in both outbreaks were properly frozen and fresh strawberries. The third outbreak has been described above, and affected 13 European countries.

   The HAV virus is very resistant to environmental conditions, as well as to food preservation methods used in the food industry, such as freezing. Therefore, effective decontamination of berries is very difficult. Given the long shelf life and a wide distribution of these products, contaminated batches of fruits may cause point outbreaks of infection at the national or international level, even after several years of storage.

   Poland is one of the largest exporters of frozen fruits in Europe. Countries importing fruits often use them to produce fruit salads, which contain fruits from different countries, also Polish. Therefore, in the event of an outbreak after their ingestion, fruits from Poland are often indicated as a potential source of mixtures contamination, especially since so far there has been no molecular identification of hepatitis A virus strains circulating in Poland, both recently, as in the past. Given the lack of this type of information, it is extremely difficult to refute allegations put forward by the countries, where people fell ill after consuming mixtures containing Polish fruits. Therefore, it is necessary to take steps to strengthen surveillance of hepatitis A, including the identification strains of HAV circulating in Poland.
3. Given the possibility of the subclinical course of infection, particularly in small children, and the low level of the population vaccinated against hepatitis A, it is essential to intensify epidemiological surveillance. A decreased incidence and the low number of people vaccinated against hepatitis A facilitate the accumulation of the relatively large population of people susceptible to the infection, which is connected with the possibility to increase the number of cases of hepatitis A.

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