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SHIGELLOSIS IN POLAND IN 2011

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ABSTRACT

BACKGROUND. Shigellosis, also known as bacillary dysentery, is a contagious and infectious disease. In the European Union, on the basis of the Commission Decision of 2 April 2009 and the Commission Decision of 28 April 2008, a unified system for collecting epidemiological data on infectious diseases was introduced, including shigellosis. This makes it possible to compare data collected at different times and in different countries.

AIM. The aim of the article is to evaluate the epidemiological situation of shigellosis in Poland in 2011.

MATERIALS AND METHODS. An assessment of the epidemiological situation of shigellosis was based on the results from an analysis of the yearly annual bulletins: “Infectious diseases and poisonings in Poland in 2011”, reports from bacteriological laboratories and reports from individual cases and epidemiological investigations of outbreaks linked to shigellosis, sent by Sanitary Epidemiological Stations to the Department of Epidemiology at NIZP-PZH.

RESULTS. In Poland, 17 confirmed cases of shigellosis were registered in 2011. The incidence of 0.04 per 100,000 inhabitants was lower when compared to the previous year. The number of cases is lower by 48% when compared with the median of years 2005-2009 – 35 cases (incidence 0.09/100,000). Most of the cases were registered in the Silesian province – 7 (incidence 0.15 /100,000). According to data from 16 laboratories of Sanitary Epidemiological Stations, *Shigella* was not detected among the subjects. All cases of shigellosis registered in 2011, were confirmed by a hospital laboratory at or a private laboratory.

CONCLUSIONS. In Poland, we have observed a decline in the number of cases of shigellosis and the incidence remains at a relatively steady level and constitutes less than 0.1/100,000 inhabitants. Compared to the rest of the countries belonging to the EU/EFTA, the current epidemiological situation of shigellosis in Poland is good. Poland is a country with the lowest incidence.

In spite of this, the surveillance of shigellosis required more active epidemiological measures. Special attention should be paid to the bacteriological testing of people living in rural areas, children and young people.

Keywords: *shigellosis, infectious intestinal disease, incidence, etiology, Poland, 2011*

INTRODUCTION

Shigellosis is an infectious disease caused by bacteria of the genus *Shigella*. In the European Union, on the basis of the Commission Decision of 2 April 2009 concerning dedicated surveillance networks for communicable diseases and the Commission Decision of 28 April 2008 laying down case definitions for reporting communicable diseases to the Community network, a system for collecting epidemiological data on infectious diseases was introduced, including shigellosis. This surveillance system aims to facilitate the comparison

of data collected at different times and in different countries. One of the elements of the system is a way of defining diseases for epidemiological surveillance, which should be used in countries belonging to the European Union. For shigellosis, the following clinical and laboratory criteria were adopted: isolation of *Shigella* spp from stool samples collected from patients with at least one of the following symptoms: abdominal pain, diarrhea, vomiting, and increased body temperature (confirmed case) or only clinical and epidemiological criteria (probable case).

MATERIALS AND METHODS

The evaluation of the epidemiological situation for shigellosis in Poland in 2011 was based on the results of data analysis from the annual bulletins "Infectious diseases and poisonings in Poland in 2011" (Czarkowski MP et al., Warsaw, National Institute of Public Health-National Institute of Hygiene [NIZP-PZH] and Chief Sanitary Inspectorate [GIS]). Additional sources were reports received from bacteriological laboratories in Sanitary Stations. In addition, data from individual cases and epidemiological investigations of outbreaks linked to shigellosis, sent by Epidemiological Departments in Sanitary Stations to the Department of Epidemiology at NIZP-PZH, were also included.

RESULTS

In 2011, 17 confirmed cases of shigellosis were recorded (incidence 0.17/100,000) (Tab. I). In comparison to the previous year, there were 13 cases less and in comparison to the median of years 2005-2009, there were 18 cases less. The registered incidence of shigellosis in Poland has a decreasing tendency and this has been maintained for several years. No deaths linked to shigellosis were reported.

Cases of shigellosis were registered in seven provinces. Most of the cases occurred in the Śląskie province – 7 (incidence 0.15/100,000), which last year reported one case (Tab. 1). Due to shigellosis, 11 people were hospitalized (64.7% cases). Most cases were reported in May – 4 (23.5%), and in September and October – three in each (35.2%).

As in previous years, 2009-2010 recorded fewer cases in rural areas than in the cities, 3 and 14 cases respectively. Most cases were reported from large cities,

Table I. Shigellosis in Poland in 2005-2011. Number of cases and incidence per 100,000 population (by date of registration), by provinces

Province	Median 2005-2009		2010		2011	
	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence
Poland	35	0.09	30	0.09	17	0.04
Dolnośląskie	2	0.07	-	-	2	0.07
Kujawsko-pomorskie	1	0.05	11	0.53	-	-
Lubelskie	1	0.05	3	0.14	-	-
Lubuskie	-	-	-	-	-	-
Łódzkie	-	-	-	-	2	0.08
Małopolskie	4	0.12	5	0.15	2	0.06
Mazowieckie	4	0.08	3	0.06	2	0.04
Opolskie	1	0.1	-	-	-	-
Podkarpackie	4	0.19	2	0.1	-	-
Podlaskie	-	-	1	0.08	-	-
Pomorskie	2	0.09	1	0.04	-	-
Śląskie	3	0.06	1	0.02	7	0.15
Świętokrzyskie	-	-	-	-	-	-
Warmińsko-mazurskie	-	-	1	0.07	-	-
Wielkopolskie	2	0.06	2	0.06	1	0.03
Zachodniopomorskie	1	0.06	-	-	1	0.06

Table II. Shigellosis in Poland in 2011 by age, gender and location. Number of cases and incidence per 100,000 by age: in urban and rural population

Age group (years)	Urban		Rural		Total	
	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence
Total	14	0.06	3	0.02	17	0.04
0-4	2	0.17	1	0.11	3	0.15
5-9	2	0.2	1	0.12	3	0.17
10-19	-	-	-	-	-	-
20-29	7	0.2	1	0.8	8	0.14
30-39	-	-	-	-	-	-
40-49	1	0.03	-	-	1	0.02
50-59	1	0.05	-	-	1	0.03
>60	-	-	-	-	-	-

Table III. Shigellosis in Poland in 2011. Number, etiology of cases and country of exposure by province of registration

Province	Cases in Poland		Imported cases			
	Number of cases	Etiology	Number of cases	Etiology	Number of cases	Country of exposure
Poland	17		10		7	
Dolnośląskie	2	<i>S. sonnei</i>	1	<i>S. flexneri</i>	1	Venezuela
Łódzkie	2	<i>S. sonnei</i>	1	<i>S. sonnei</i>	1	Colombia
Małopolskie	2	<i>S. sonnei</i>	1	<i>S. sonnei</i>	1	India
Mazowieckie	2	<i>S. sonnei</i>	1	-	-	-
		<i>S. flexneri</i>	1	-	-	-
Śląskie	7	<i>Shigella</i>	1	<i>S. sonnei</i>	2	Egypt (Hurghada)
		<i>S. sonnei</i>	2	<i>S. sonnei</i>	1	Turkey
		<i>S. flexneri</i>	1	-	-	-
Wielkopolskie	1	<i>S. sonnei</i>	1	-	-	-
Zachodniopomorskie	1	-	-	<i>S. flexneri</i>	1	India (Mumbai)

with more than 100,000 residents – 11 cases (incidence 0.06/100,000).

The age structure of cases of shigellosis has changed when compared to the previous years. In 2011, six children became ill with shigellosis, three of them at the age of 0-4 years, one in rural areas and two in city areas and three aged 5-9 years (Tab. II).

As in the previous year, the highest incidence occurred in the age group of 20 to 29 years – 8 cases (50%). However, unlike previous years, there were fewer cases among women – 6 (incidence 0.03) than men – 11 (incidence 0.06).

In 2011, one outbreak was observed in which the etiological agent was *S. sonnei*. The outbreak occurred in Łódzkie province, in total 4 persons were exposed, including one case and one person with asymptomatic infection.

In 2011, 7 cases of shigellosis were imported (2 *S. flexneri*, 5 *S. sonnei*) (Tab. III).

According to data received from the laboratory of the Regional Sanitary-Epidemiological Station submitted to the Department of Bacteriology, NIPH-NIH tested 26,147 person tested for *Salmonella shigella* infection no one was found infected by *Shigella* but 1,851 cases and 3,177 infected by *Salmonella*. For the first time since the introduction of sanitary testing in Poland, *Shigella* has not been isolated in these laboratories. 17 confirmed cases of shigellosis recorded in 2011 were confirmed by a hospital laboratory or a private laboratory (Tab. IV).

Table IV. Shigellosis in Poland in 2011. Positive results of bacteriological examination of cases, convalescents, carriers, contacts and food workers

Year	Total	Cases	Convalescents	Carriers	Contacts	Food workers
2009	19	12	2	3	1	1
2010	14	1	3	2	2	6
2011	17	17	0	0	0	0

SUMMARY AND CONCLUSIONS

In recent years, a decline in the number of cases of shigellosis has been observed in Poland the incidence remains at a relatively steady level and constitutes less than 0.1/100,000 inhabitants. Compared to the countries belonging to the EU/EFTA, the current epidemiological situation of shigellosis in Poland is good. Poland is a country with the lowest incidence and 20 times lower than the average in countries where the incidence was reported as 1.64/100,000 inhabitants.

It can be assumed that the negative results of testing for *Shigella* at the laboratories of Regional Sanitary-Epidemiological Stations could be a result of the application of effective antibacterial drugs in patients without diagnosis of the etiology of the disease.

Bacteriological testing in laboratories of the Regional Sanitary-Epidemiological Stations are primarily focused on the detection of the etiology of food poisoning and infections caused by infected products of animal origin. Currently, bacteriological tests are performed occasionally, especially for children with mild cases of diarrhea.

Surveillance of shigellosis required more active epidemiological measures. Special attention should be paid to the bacteriological testing of people living in rural areas, children and young people.

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