Hanna Stypułkowska-Misiurewicz[1], Anna Baumann – Popczyk[2]

SHIGELLOSIS IN POLAND IN 2012

Department of Bacteriology[1] and Department of Epidemiology[2]
National Institute of Public Health – National Institute of Hygiene in Warsaw

ABSTRACT

BACKGROUND. Shigellosis according to European Centre for Disease Control (ECDC) Report is registered in all countries of the European Union (EU) and of the European Free Trade Association (EFTA) with exception of Italy and Luxemburg. The incidence rate in Poland below 0.1/100 000 of population is the lowest among the EU/EFTA countries.
AIM. To assess epidemiological situation of shigellosis in Poland in 2012 in comparison to preceding years.
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 2012", 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 2012 the tendency that the number of registered cases of shigellosis was lower than in the former years continued - only 13 confirmed cases of shigellosis were registered (incidence rate 0.03 per 100 000 inhabitants but in the previous year the 18 cases (incidence rate 0.05). Cases were registered only by 6 provinces, most of the cases by the Lodz province – 4. All together 5 persons nearly 40 % were infected in travel to the foreign countries. According to data from laboratories of Sanitary-Epidemiological Stations, *Shigella* was detected only 4 convalescents and 2 carriers. All cases of shigellosis registered in 2012, were confirmed by a hospital laboratory or a private laboratory.
CONCLUSIONS. In our opinion the above mentioned data concerning the cases of shigellosis in Poland in 2012 are not reflecting the true epidemiological situation of shigellosis in Poland. The sanitary situation was changing nearly every year for better than in former years but the surveillance of dysentery require more active epidemiological measures.

Key words: *shigellosis, infectious intestinal disease, incidence, etiology, Poland, 2012*

INTRODUCTION

Shigellosis according to European Centre for Disease Prevention and Control Surveillance (ECDC) Report is registered in all countries of the European Union (EU) and of the European Free Trade Association (EFTA) with exception of Italy and Luxemburg. The incidence rate in Poland below 0,1/100 000 of population is the lowest among the EU/EFTA countries. For registration of a case the clinical and laboratory criteria are necessary: 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 2012 was based on the results of data analysis from the annual bulletins "Infectious diseases and poisonings in Poland in 2012" (Czarkowski MP et al., Warsaw, National Institute of Public Health-National Institute of Hygiene [NIZP-PZH] and Chief Sanitary Inspectorate [GIS]). Additional sources also included were reports received from bacteriologi-

cal laboratories in Sanitary-Epidemiological Stations analyzed in Bacteriological Department NIZP-PZH, and data from epidemiological reports concerning the 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.

RESULTS

In 2012, the 13 confirmed cases of shigellosis were recorded (incidence 0.03/100 000). 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 (Tab. I).

Table I. Shigellosis in Poland in 1985-2012. Number of cases, incidence per 100 000 population and number of death

Years	Median *		Number of death
	Number of cases	Incidence	
1985-1989	8217	21.8	3
1990-1994	3210	8.3	4
1995-1999	534	1.4	5
2000-2004	121	0.3	0
2005-2009	35	0.09	0
2010	30	0.09	0
2011	18	0.05	0
2012	13	0.03	0

* median in years 1985 - 2009

Cases of shigellosis were registered only in six provinces. Most of the cases occurred in the Lodz province – 4 (incidence 0.16 per 100 000 inhabitants) where in 2011 only 2 cases were registered. From 5 provinces in one 3 cases in two-2 cases in every one were registered (Tab. II). Due to shigellosis, 7 persons were hospitalized (53.8% cases). Most cases were reported in September - 4 (30.8%).

In 2012, there were two outbreaks of shigellosis that occurred in Lodz and Mazowieckie provinces. In each became ill 2 people and the etiological agent was *S. sonnei.*

As in previous years fewer cases were recorded in rural areas -3 (incidence 0.02 per 100 000) than in the cities - 10 cases (incidence 0.04). Most of the cases were from big cities of more than 100 000 inhabitants – 7 cases, incidence 0.06 per 100 000.

The age structure of cases of shigellosis has changed when compared to the previous years when most cases were recorded in children. In 2012, only 4 children became ill with shigellosis, all in the towns: two boys at the age of 0-4 years, and two girls aged 5-9 years .

As in the previous year, the highest incidence occurred in the age group of 20 to 29 years – 4 cases (30%) two men and two woman. However, unlike previous years, there were fewer cases among women – 5 (incidence 0.03) than men – 8 (incidence 0.04).

In 2012, 38,5 % of all cases of shigellosis were imported (1 S.*flexneri*, 3 S.*sonnei,* 1 S.*boydii)* (Tab. II).

According to data received from the laboratory of the Regional Sanitary-Epidemiological Station submitted to the Department of Bacteriology NIPH-NIH follows the testing for *Shigella* were not effective. From 23274 persons with diarrhea tested for *Shigella*/ *Salmonella* no one was found infected by *Shigella* but 1509 patients were infected by *Salmonella* (7.5%). In two provinces *Shigella* were found in 4 convalescents (Kujawsko-pomorskie province: *S. flexneri* and *S. boydii*, Malopolskie province: *S.sonnei*). *Shigella* has not been isolated from no one examined persons in laboratories of 14 provinces (Tab. III). The cases of shigellosis recorded in 2012 were confirmed by a hospital or a private laboratory.

SUMMARY AND CONCLUSIONS

In recent years, a decline in the number of cases of shigellosis has been observed in Poland and the incidence below 0.1 per 100 000 inhabitants remains the lowest in European countries. And 20 times lower than the median of the average of countries belonging to the EU/EFTA, where the incidence was reported as 1.63/100,000 inhabitants.

It can be assumed that the negative results of testing for *Shigella* at the laboratories of the Provincial Sani-

Table II. Shigellosis in Poland in 2012.Number, etiology of cases and country of exposure by province of registration

Province	Number of cases	Domestic cases		Imported cases		
		Etiology	Number of cases	Etiology	Number of cases	Country of exposure
Poland	13	8		5		
Łódzkie	3	*S. sonnei*	2	*S. sonnei*	1	Egypt
Małopolskie	3	*S. sonnei*	1	*S. boydii*	1	Egypt
		-	-	*S. sonnei*	1	Romania
Mazowieckie	3	*S. boydii*	1	*S. sonnei*	1	Turkey
		S. flexneri	1			
Śląskie	2	*S. sonnei*	2	-	-	-
Wielkopolskie	1	-	-	*S. flexneri*	1	Egypt
Zachodniopomorskie	1	*S. sonnei*	1	-	-	-

Table III. Shigellosis in Poland in 2012. Positive results of bacteriological examination of cases convalescent carriers, contacts and food workers

Years	Laboratory performing testing for *Shigella*						
	Laboratory of the Provincial Sanitary Epidemiological Stations						Other laboratory
	Cases	Convalescens	Carriers	Contacts	Food workers	Total	Cases
2009	12	2	3	1	1	19	-
2010	1	3	2	2	6	14	-
2011	0	0	0	0	0	0	18
2012	0	4	2	0	0	6	13

tary-Epidemiological Stations could be a result of the application for treatment of cases effective antibacterial drugs without diagnosis of the etiology of the disease.

Bacteriological testing in laboratories of the Provincial Sanitary-Epidemiological Stations are primarily focused on the detection of the etiology of food poisoning and infections caused by infected products of animal origin, are ineffective for testing cases of shigellosis. Currently, bacteriological testing people ill with symptoms of diarrhoea are limited. Especially children with mild cases of diarrhea are rarely examined and etiology determined prior to treatment with drugs empirically used. The same applies for imported cases of shigellosis from other countries. It can be presumed that the presented data do not reflect actual epidemiological situation of shigellosis in Poland. Therefore there is a need to strengthen the epidemiological surveillance of shigellosis in Poland.

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Address for correspondence:
Prof. dr hab. med. Hanna Stypułkowska-Misiurewicz
National Institute of Public Health
– National Institute of Hygiene
24 Chocimska St.
00-791 Warsaw, Poland
phone number: 0-22 5421 376, fax: 0-22 5421 307
e-mail: hstypulkowska@pzh.gov.pl