

Małgorzata Sadkowska-Todys, Bożena Kucharczyk

CAMPYLOBACTERIOSIS IN POLAND IN 2012

Department of Epidemiology National Institute of Public Health – National Institute of Hygiene (NIPH-NIH) in Warsaw

ABSTRACT

AIM. The aim of this paper is to evaluate epidemiological situation of campylobacteriosis in Poland in 2012, compared to the situation in previous years.

MATERIALS AND METHODS. The evaluation was based on analysis of data from the annual bulletin “Infectious diseases and poisonings in Poland” 2011-2012 (MP Czarkowski et al., NIZP-PZH and Chief Sanitary Inspectorate-GIS), information from the forms of individual cases reports from the epidemiological investigations in outbreaks of campylobacteriosis, submitted by the sanitary-epidemiological stations to the Department of Epidemiology and data from the Department of Demographic Studies of the Central Statistical Office. Cases were classified according to a surveillance case definition.

RESULTS. In 2012, 431 cases of campylobacteriosis were registered in Poland, which was 30% more than in 2011. The incidence was 1.12/100 000. All reported cases were classified. No deaths were recorded. More than 84 % of cases of campylobacteriosis occurred in four provinces – Warmińsko-Mazurskie (35%), Śląskie (22%), Mazowieckie (14%) and the Malopolskie (14%). The highest incidence was observed in the Warmińsko-Mazurskie- 6.47/100 000. As in previous years, the percentage of hospitalized cases was 57.5%. *Campylobacter* species was identified in more than 77 % of patients, and it was found that 70% of the cases were caused by *C. jejuni* and about 7 % by *C. coli*. As in previous years, the majority of cases (343, 79%) occurred in the age group 0-4. Five family outbreaks caused by *Campylobacter* were recorded in 2012.

CONCLUSIONS. In Poland Campylobacteriosis is rarely diagnosed, confirmed and reported. Routine diagnosis of infection with *Campylobacter* sp. is performed only in the two provinces.

Key words: campylobacteriosis, epidemiology, Poland, 2011

INTRODUCTION

In Poland campylobacteriosis is a notifiable disease (in accordance with the Act on the Prevention and Control of Infections and Infectious Diseases in Humans form 5 December 2008). Reported annual incidence is very low and it is about 1/100 000, as compared to the average in the European Union countries which in 2011 was 70/100 000.

The aim of the study was to assess the epidemiological situation of campylobacteriosis in Poland in 2012, as compared with the previous year.

MATERIAL AND METHODS

The estimation of epidemiological situation of campylobacteriosis in Poland is based on the analysis of the following data: the annual bulletin “Infectious Diseases and Poisonings in Poland in 2012” (Czarkowski MP et al., Warsaw, NIZP-PZH and GIS), information from the questionnaires of individual cases and reports from the epidemiological investigations of outbreaks of campylobacteriosis, which were submitted to the Department of Epidemiology, NIPH-NIH by the Regional Sanitary-Epidemiological Stations and the data from Demographic Research Department of the Central Statistical Office.

Cases of campylobacteriosis are classified on the basis of the case definition adopted by the European Commission in its decision of 28 April 2008 amending Decision 2002/253/EC, which was introduced into routine surveillance in Poland in 2009.

Table I. Campylobacteriosis in Poland in years 2011-2012. Number of cases and incidence rate per 100 000 population by province.

Province	2011								2012							
	No. of cases per quarter				No. of cases	Incidence rate	Hospitalization		No. of cases per quarter				No. of cases	Incidence rate	Hospitalization	
	I	II	III	IV			No. of cases	%	I	II	III	IV			No. of cases	%
Dolnośląskie									1	-	1	3	5	0,17	2	40
Kujawsko-Pomorskie	8	3	-	1	23	0.57	10	83.3	4	2	3	3	12	0.57	12	100
Lubelskie	-	-	-	1	1	0.05	1	100	-	1	-	-	-	0.05	1	100
Lubuskie	6	4	5	7	11	2.64	27	100	8	5	5	8	26	2.54	26	100
Małopolskie	9	6	6	16	37	1.11	33	89.2	12	12	15	29	59	1.76	49	83.1
Mazowieckie	6	8	12	7	33	0.63	24	72.7	7	16	11	27	61	1.15	46	75.4
Podkarpackie	1	1	1	1	4	0.19	4	100	3	-	-	1	4	0.17	4	100
Podlaskie	-	-	-	1	1	0.08	1	100	-	-	-	-	-	-	-	-
Pomorskie	-	-	-	1	1	0.04	1	100	3	-	-	1	4	0.17	4	100
Śląskie	15	21	36	40	112	2.42	35	31.3	33	26	43	48	150	3.25	51	34
Warmińsko-mazurskie	17	39	30	18	104	7.16	50	48.1	10	22	40	22	94	6.47	40	42.6
Wielkopolskie	3	9	6	3	21	0.61	17	81	3	2	4	4	13	0.38	10	76.9
Zachodniopomorskie	-	-	-	-	1	0.06	1	100	-	-	-	1	1	0.06	1	100
Total	63	92	98	101	354	0.92	204	57.6	84	86	123	138	431	1.12	247	57.6

Source: Infectious diseases and poisoning in Poland, 2005-2010 (MP Czarkowski et al. NIPH-NIH;CSI)

RESULTS

In Poland, 431 cases of campylobacteriosis were reported in 2012, which was over 30% more than in 2011. Incidence was 1.12./100 000. All cases met the criteria of a confirmed ones.

Cases of campylobacteriosis were reported in 11 provinces, but over 84% of notifications came from the four provinces: Śląskie 150 (almost 35%), Warmińsko-Mazurskie 94 (almost 22%), Mazowieckie 61 and the Malopolskie 59 (about 14%). The highest incidence was observed in the Warmińsko-Mazurskie: 6.47/100 000, and in Śląskie: 3.25/100.000

In Śląskie most cases (over 86 %) were reported from two districts: Bielsko-Biala - 78 cases, incidence 44.8/100 000, and from Bielski district - 52, 32.8/100 000. In the Warmińsko-Mazurskie almost 76% of cases are reported from two districts: Olsztyn - 50 cases, 28.5/100 000 and Olsztyński district 21 cases, 17.3/100 000. In total, more than 45 % of the cases reported in the country in 2012 were registered in these four districts. Moreover, upward trend of incidence continues in the districts of Bielsko-Biala and Bielski district. Since 2008, in the district of Bielsko-Biala campylobacteriosis exceed the number of cases and the incidence of salmonellosis. In the district of Bielski such a situation occurred for the first time in 2012, when were reported only 31 cases of salmonellosis, 19.5/100 000. Higher incidence of infections caused by *Campylobacter* sp. than caused by *Salmonella* is characteristic for most Western countries of the EU.

In Poland, the fraction of people hospitalized due to campylobacteriosis in 2012 reached 57.6% and was

similar as in previous years. The lowest percentage of hospitalizations was recorded in the provinces, with highest numbers of reported cases, that is, in the Warmińsko-Mazurskie - 21.8% and Śląskie - 34.8%. Except for those above and the Dolnośląskie province, in which 40% of cases were hospitalized, in all other provinces the percentage surpassed 75% (Tab.I. Campylobacteriosis in Poland in 2011-2012. Incidence and incidence per 100 000 inhabitants, the number and percentage of hospitalized by Provinces.). In 2012, there were no deaths with underlying cause of *Campylobacter* infection.

Campylobacter species was recognized in 333 cases (over 77%). In 303 individuals (about 70%) it was *C. jejuni* and 29 (6.7%) *C. coli*. In 92 cases, no species was identified (Table II. Campylobacteriosis in Poland

Table II. Campylobacteriosis in Poland in 2012. The species of Campylobacteriosis strains isolated from cases by province.

Province	Species of <i>Campylobacter</i>			
	<i>C. jejuni</i>	<i>C. coli</i>	other	not determined
Dolnośląskie	3	-	-	2
Kujawsko-Pomorskie	-	-	-	12
Lubelskie	-	-	-	1
Lubuskie	10	1	-	15
Małopolskie	19	1	-	39
Mazowieckie	56	5	-	-
Podkarpackie	4	-	-	1
Pomorskie	-	-	-	4
Śląskie	117	21	2	10
Warmińsko-mazurskie	83	1	-	10
Wielkopolskie	13	-	-	-
Zachodniopomorskie	1	-	-	-
Total	303	29	1	92

Table III. Campylobacteriosis in Poland in 2012. Number of cases by age and species

age group	Species of <i>Campylobacter</i>				total
	<i>C. jejuni</i>	<i>C. coli</i>	other	not determined	
0	89	5	-	30	124
1	86	7	-	26	119
2	32	5	-	9	46
3	23	1	-	7	31
4	16	2	-	5	23
0-4	246	20	-	77	343
05-09	26	2	-	8	36
10-19	9	3	-	6	18
20-49	12	2	-	2	16
50-59	4	-	1	-	5
>60	9	2	1	1	13

in 2012, *Campylobacter* species isolated from patients by. Provinces.).

Most cases of campylobacteriosis (343 cases, more than 79%) occurred in children 0- 4., with most cases reported in children under one year of age - 124 cases (Table III. Campylobacteriosis in Poland in 2012 Number of cases by age and species of *Campylobacter*.). In 2012, 235 cases were men and 196 women.

The predominant symptom, which occurred in patients was diarrhea. It occurred in 416 patients (over 96.5%). In 185 cases (about 43%) it was blood, or traces of blood in the stool. Fever occurred in almost 59% of patients (Table IV. Campylobacteriosis in Poland in 2012, the most common symptoms).

Table IV. Campylobacteriosis in Poland in 2012. Main symptoms

symptoms	Species of <i>Campylobacter</i>				total
	<i>C. jejuni</i>	<i>C. coli</i>	other	not determined	
diarrhoea (with blood)	296 (144)	28 (14)	2 (1)	90 (26)	416 (185)
stomach ache	98	6	-	24	128
vomiting	56	8	1	36	101
fever	174	19	-	61	254
other	45	3	-	21	69

In 2012, it was five family outbreaks of campylobacteriosis registered in Poland. These outbreaks have occurred in the four regions: Śląskie - 2, and one each in Mazowieckie, Podkarpackie and Warmińsko-

Mazurskie. In none of these outbreaks neither source nor vehicle was identified.

SUMMARY AND CONCLUSIONS

- 1 In Poland cases of campylobacteriosis are rarely recognized and reported, and the incidence is much lower than in other EU countries.
- 2 In 2012, over 84% of notifications came from four provinces - of Śląskie, Warmińsko-Mazurskie, Mazowieckie and Małopolskie. As much as 45% of all cases were reported from four districts (two from the Śląskie and two of Warmińsko-Mazurskie). This indicates that the diagnosis of infection with *Campylobacter* is routinely carried out in only a few places in the country.
- 3 In 2012 in Poland, only two districts - Bielsko-Biala and Bielski (Silesia) in the incidence of campylobacteriosis was higher than of salmonellosis, which, in relation with the National Control Programmes for Salmonella, is characteristic of many EU countries.
- 4 In recent years the species of *Campylobacter* cases was identified in more than 75% of reported cases. The dominant species of *Campylobacter* was the *C. jejuni*.
- 5 Necessary is improvement of the quality of the epidemiological surveillance of diarrheal disease with particular emphasis on laboratory diagnosis, especially regarding infections with *Campylobacter*. Expanding of laboratory diagnostics is essential for proper assessment of the epidemiological situation of this disease in Poland.

Received: 30.04.2014 r.

Accepted for publication: 05.05.2014

Address for correspondence:

Dr Małgorzata Sadkowska-Todys

Zakład Epidemiologii

Narodowego Instytutu Zdrowia Publicznego -

Państwowego Zakładu Higieny

ul. Chocimska 24, 00-791 Warszawa

mtodys@pzh.gov.pl

