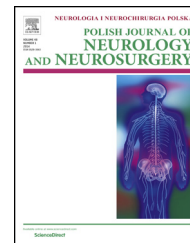


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Short communication

Increasing prevalence and incidence of multiple sclerosis in Poland

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ARTICLE INFO

Article history:

Received 14 July 2016

Accepted 9 November 2016

Available online xxx

Keywords:

Multiple sclerosis

Prevalence

Incidence

Epidemiology

Poland

ABSTRACT

Epidemiologic data on multiple sclerosis (MS) in Poland are limited. Our objectives were to assess a mean annual incidence rate, and MS prevalence on December 31, 2015 in the Swietokrzyskie province (central Poland). We analyzed data of 1525 patients, collected in the Polish Multiple Sclerosis Registry. On December 31, 2015, overall crude prevalence of MS was not less than 121.3/100,000 (95% CI, 114.6–128.4). Significantly higher prevalence was recorded in females (167.1; 95% CI, 155.6–179.1) than in males (73.2; 95% CI, 64.2–82.6; $P < 0.001$). The age-adjusted prevalence standardized to the European standard population was 114.2/100,000 (95% CI, 106.2–121.5). The female–male ratio was 2.4:1. The mean annual incidence was 4.5/100,000 (95% CI, 3.8–5.2). Increased MS prevalence and incidence compared to 2010 and previous studies from Poland confirmed that central Poland is a high risk area for MS.

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1. Introduction

Data on MS in Poland are scarce. It is estimated that there are 40,000–50,000 MS patients in Poland, and the prevalence is estimated at 37–91 cases per 100,000 citizens [1]. Most epidemiological studies of MS in Poland were conducted many years ago, and provide data from only some regions of Poland [2–8]. Systematic collection of epidemiological data in Poland started in 2010. With the goal of long-term observation of MS patients, we designed the Polish MS Registry. The

registration of patients began in the Swietokrzyskie province (central Poland). This study investigated prevalence, incidence, and other epidemiological data of MS in this region. The data were also compared with the results obtained earlier from other regions of Poland.

2. Methods

The survey was conducted in the Swietokrzyskie province (51°34′–50°18′ north latitude and 19°70′–21°87′ east longitude).

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<http://dx.doi.org/10.1016/j.pjnns.2016.11.005>

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The population on the prevalence day (December 31, 2015) was 1,257,179 inhabitants (613,217 men and 643,962 women) [9]. Informed consent was obtained from each participant or the next of kin before any interview or neurological examination was conducted. The study was approved by the Regional Medical Ethics Committee of the Swietokrzyskie Medical Council in Kielce.

Patients with MS, according to the 2010 McDonald criteria, were prospectively and retrospectively registered via the web-based portal of the Polish Registry of Multiple Sclerosis (<http://www.rejsm.pl>) and followed at each visit. The data were recorded by an experienced neurologist. The scope of the registered data included: age, sex, family status, place of residence, level of education, and family history. Disease related data were collected: date and nature of first symptoms, date of diagnosis, type of disease, comorbid conditions, relapses, additional examination (MRI, examination of cerebrospinal fluid, evoked potentials), type of therapy (modifying course of disease, symptomatic, treating relapses). All participating centers took responsibility for their data verification. The MS specialists responsible for data collection had been previously trained in data collection, patient monitoring, and treatment procedures. The data from the Registry were validated by verifying data concordance between the electronic database and medical documentation. In the case of incomplete information, the coordinators contacted the data providers by telephone and interviewed them to confirm the details. Next, within 1-year of the prevalence day, all subjects were clinically examined by a neurologist specializing in MS to verify the diagnosis of MS according to McDonald's criteria. The patients were evaluated with the EDSS proposed by Kurtzke. All patients with a definite diagnosis of MS who were born and lived in the Swietokrzyskie Voivodeship were recruited into the study on the prevalence day (December 31, 2015). A total of 1525 MS patients were included in the estimation of prevalence and incidence.

Crude sex and age area-specific prevalence values were calculated as the number of cases on prevalence day per 100,000 inhabitants, and adjusted using the European population as a standard [10]. Incidence was calculated annually (on December 31) based on the number of newly diagnosed cases each year between January 1 and December 31, as the numerator and the size of the population as per the official data every year from 2010 to 2015, according to the Polish Central Statistical Office [9]. The 95% confidence intervals (CIs) for prevalence and incidence were calculated. Statistical significance was set at $P < 0.05$. Statistical analysis was performed with STATISTICA software, version 8.0 (2007; StatSoft, Inc.).

3. Results

On the prevalence day (December 31, 2015), there were 1525 MS patients (449 men and 1076 women; mean age: 44.2 ± 12.6 years, range: 14–78) living in the study area. The mean duration of MS from onset to the prevalence day was 14.4 ± 9.2 years (range: 0–52 years). The mean length of time between onset of the first symptoms and diagnosis was 27.4 ± 51.2 months, with a median of 21 months (range, 1–164 months). The female–male ratio was 2.4:1. The mean EDSS

Table 1 – Age- and sex-specific prevalence of MS per 100,000 inhabitants in the Swietokrzyskie province on 31 December 2015.

Age (years)	Women			Men			Both sexes					
	Cases	Population	Prevalence	95% CI	Cases	Population	Prevalence	95% CI	Cases	Population	Prevalence	95% CI
0-14	1	84,578	1.2	0.8-1.6	0	89,054	-	-	1	173,632	0.6	0.4-0.9
15-24	51	72,587	70.3	58.2-82.6	22	75,887	28.9	20.4-37.4	73	148,474	49.2	38.1-59.6
25-34	270	91,758	276.2	263.2-289.4	120	99,221	120.9	110.8-130.4	390	190,997	204.2	187.8-220.6
35-44	314	88,598	354.4	334.8-372.6	150	94,400	158.0	146.6-169.4	464	182,998	253.6	237.4-269.8
45-54	270	77,213	349.7	334.4-364.9	87	78,357	111.0	99.2-122.6	357	155,570	229.4	215.7-243.4
55-64	144	97,673	147.4	136.2-158.3	52	92,032	56.5	48.6-64.4	196	189,705	103.3	94.5-112.4
65+	26	131,555	19.8	14.6-25.2	18	84,266	21.2	16.6-25.8	44	215,821	20.3	15.4-25.3
Total	1076	643,962	167.1	155.6-179.1	449	613,217	73.2	64.2-82.6	1525	1,257,179	121.3	114.6-128.4
CI, confidence interval.												

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