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temat pracy: „*Wybrane aspekty epidemiologiczne stwardnienia rozsianego w województwie podlaskim*”

### **SUMMARY**

Multiple sclerosis is a chronic inflammatory demyelinating disease of the central nervous system that leads to oligodendrocyte degeneration and the destruction of neurons and axons. It occurs mainly in Caucasians, two times more often in females than males. The disease is most commonly diagnosed around 20-40 years of age. The estimated number of people with MS in the world is about 2.3 million. Prevalence is highest in North America and Europe (140 and 108 per 100,000, respectively) and lowest in Sub-Saharan Africa and East Asia, at 2.1 and 2.2 per 100,000, respectively. The highest prevalence in Europe is 189 per 100,000 in Sweden. In Poland, the number of patients with multiple sclerosis is unknown, as there have not been systematic long-term epidemiological studies of the entire population.

The aim of the study was to analyze selected aspects of the epidemiology of multiple sclerosis in Podlaskie Voivodeship, including an assessment of comorbidity and availability of drug treatments and rehabilitation.

The study involved 815 patients with a clinically definite diagnosis of MS, according to McDonald's criteria (2010), living in Podlaskie Voivodeship. Data were collected from patients treated at the Department of Neurology, Medical University of Białystok, and Outpatient Clinic, on the basis of standardized medical history, neurological examination, and evaluation of the Expanded Disability Status Scale (EDSS), which was performed by a neurologist. Furthermore, information from the patients was compared with National Health Fund data, which included all patients presenting to health care facilities with ICD 10 G35 in 2012-2013. In addition, these data were recorded in the Polish Multiple Sclerosis Registry (REJSM).

Comparison of the collected data (sex, age, number in each age group) with National Health Fund data indicates that the survey is a representative sample of approximately 62% of the population of multiple sclerosis patients in Podlaskie Voivodeship. The survey showed that prevalence rates confirm that Podlaskie Voivodeship is a high risk area for multiple sclerosis. The prevalence rate was 108.6/100 000 on December 31, 2013. A significantly higher prevalence rate was recorded in females than males. Mean age of the study participants was 47.7±12.2 years. The number of patients born in April / May was higher than those born in October /

November. The average age of disease onset was  $32.3 \pm 10.1$  years, and mean disease duration was  $11.1 \pm 8.2$  years. The time interval from onset of first symptoms to diagnosis was  $3.7 \pm 5.3$  years.

Monofocal onset was the most common symptom of multiple sclerosis, and the most common disease course was relapsing-remitting. Mean EDSS was  $3.33 \pm 2.15$ . Familial MS was observed in 10.7% of cases. MRI was performed in 98.8% of patients and cerebrospinal fluid analysis in 60.8%, and oligoclonal bands were demonstrated in 93.4% of patients.

Most of the patients with multiple sclerosis did not suffer from any other diseases. The most common comorbidity in multiple sclerosis was hypertension. Diabetes and hyperlipidemia were higher in men than women. Immunomodulatory therapy was given to a small number of multiple sclerosis patients (14.4%) in this region. About a quarter of patients received annual rehabilitation services.

Patients from Podlaskie Voivodeship usually have a secondary education (42,1%). Among patients with multiple sclerosis, 40.5% continued to be employed, 49% were receiving disability pension, 8.2% were unemployed. Two-thirds of patients were married, and women usually had two children. Nicotine addiction was reported by 23.2% patients. 7.7% of patients living in Podlaskie Voivodeship declared membership in the multiple sclerosis support group.

The results indicate a need for further long-term epidemiological studies to know the exact population of patients with multiple sclerosis and to develop a model of care in this region. An element that could facilitate this is creating a local branch of The Polish Multiple Sclerosis Society in our voivodeship. Whereas, the key task for all neurologists specializing in MS patient care and treatment is to create a Polish national registry of multiple sclerosis patients, which would also include patients from our region.