Epidemiology of Parkinson's Disease

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Parkinson's disease (PD) is one of the most common neurological diseases and second in frequency among neurodegenerative diseases, after the most common, Alzheimer's disease (AD) [1]. Also, PD is the second most common extrapyramidal disease, after the most common movement disorder - essential tremor. The incidence and prevalence of PD increase proportionally with age [2]. The disease occurs as a dominantly hyperkinetic, hypokinetic or mixed type. PD is characterized by typical signs - tremor at rest that always occurs unilaterally at first, rigor and bradykinesia, and in a later stage postural instability.

Epidemiological data on PD largely depend on the method systematization and tracking of encrypted data. Exact indicators rely on relevant sources from Health Statistical Yearbook of the Croatian Institute for Public Health (HZJZ) and European Statistical System (ESS) EUROSTAT (EU) [3]. The most comprehensive and up-to-date study on epidemiological indicators of PD is a study published in 2018 in The Lancet Neurology, study Global, regional, and national burden of Parkinson's disease, 1990 - 2016: a systematic analysis for the Global Burden of Disease Study 2016 [4]. Thus, the prevalence of PD varies from 41 to 100 000 in the fifth decade of life, up to 1.900 patients per 100 000 inhabitants aged 80 and over, given that the incidence of the disease generally increases with age and so that all neurodegenerative disorders are associated with the so-called "aging". Despite this, in about 4 % of patients PD is diagnosed under the age of 50. Recent indicators estimate that around six to seven million people suffer from PD in the world [4]. The distribution in all studies shows a more frequent occurrence in men, in whom PD occurs on average 1.5 times more often. The reason for this external distribution is not known, but given that the exact cause of PB is not known and that the disease is caused by the interaction of some kind of genetic predisposition and environmental factors, it is speculated about a possible greater environmental impact. This is supported by the fact that, for example, men are more often employed in environments with exposure to toxins [1,2,5]. According to the results of a large multicentre multi-year study, a rapid progressive increase in the number of PD patients after the age of 60 in both sexes was showed, with a "peak" of prevalence at the age of about 80 years and then an expected decline due to the shortening of further life expectancy [4]. A comparison of the number of deaths, DALYs (disability-adjusted life-years) between 1990 and 2016 shows an increase in the number of deaths by an average of 19.5 %, an increase in the prevalence of diseases by an average of 21.7 % and a change in DALYs by 22.1 % [4]. Also, global YLDs (years lived with disability) and YLLs (years of life lost) show a significant increase with age, but with a greater representation in the female sex, which is justified by the fact that women live longer compared to men and therefore live longer with PD, i.e., with more years lived with disability and lost years of life [4]. Differences are also noticeable when comparing underdeveloped, medium-developed and developed countries, primarily due to differences in the standard and availability of treatment and medical care. The data for Croatia show an increase in the number of deaths from PD in the mentioned monitored period with an average of 7.9 %, increase an average of 7.9 % prevalence, and an average of 8.6 % DALYs [4]. It is known that dyskinesia occurs more often in women, see due to lower body mass and the effect of the drug dose on it. Conversely, dopamine dysregulation syndrome (DDS), a type of levodopa addiction, occurs more often in younger men.

Epidemiological and statistical data show an increase in the incidence and prevalence of PD with age, and more frequent occurrence of the disease in males [5]. Accurate and relevant epidemiological and statistical data are a necessary prerequisite for good and realistic indicators, which indicates the extreme importance of decided diagnostic criteria for PD, good coding of the disease, regular updating of data, as well as internationally defined and uniform monitoring criteria for all disease indicators, which will guarantee credibility and consistency of all epidemiological and statistical indicators of PD and contribute to a better overall approach to patients with this disease. This contributes to a better understanding of the disease, which is key to better treatment of patients with PD and improvement of the overall quality of life not only for PD patients, but also for family members, caregivers and the community as a whole on a local and global level.

References

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