



Clinical Study

Evaluation of reproductive health in female patients with multiple sclerosis in Polish population



Bartnik Paweł^a, Wielgoś Aleksandra^{a,d,*}, Kacperczyk-Bartnik Joanna^a, Szymusik Iwona^b, Podlecka-Piętowska Aleksandra^c, Zakrzewska-Pniewska Beata^c, Wielgoś Mirosław^b

^a Students' Research Group, 1st Department of Obstetrics and Gynaecology, Medical University of Warsaw, Pl. Starynkiewicza 1/3, 02-015, Poland

^b 1st Department of Obstetrics and Gynaecology, Medical University of Warsaw, Pl. Starynkiewicza 1/3, 02-015, Poland

^c Department of Neurology, Medical University of Warsaw, Banacha 1a, Poland

^d Department of Experimental and Clinical Physiology, Laboratory of Centre for Preclinical Research, Medical University of Warsaw, Żwirki i Wigury 81, 02-091, Poland

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ABSTRACT

Multiple sclerosis (MS) is a chronic disease, which affects mostly women and has an early onset. Due to progress in treatment patients maintain a high quality of life for a long period and participate in all of its fields. One of them is reproductive health with all of its aspects. The aim of the study was to evaluate the reproductive health of female MS patients with regard to various features of MS.

It was a cross-sectional study. The data was collected via anonymous survey distributed among patients with MS hospitalized at the Department of Neurology, Medical University of Warsaw and online. The study group consisted of 218 women diagnosed with MS. The survey consisted of demographic questions, questions assessing features of MS, reproductive health, sexual performance and psychological comorbidities, including depression and fatigue.

53.01% of MS patients declared interest in maternity. Patients interested in pregnancy were significantly younger ($p < .01$), often nulliparous ($p < .001$), had lower EDSS score ($p < .006$) and lower motor deficit ($p < .001$). History of at least one labour ($p < .02$) had a negative impact on the frequency of gynaecologic admissions. More advanced age ($p < .003$), unemployment ($p < .01$), at least one labour ($p < .043$), stronger balance problems ($p < .003$) and more intense motor deficit ($p < .002$) were related to less frequent Pap smears.

Reproductive health of women with MS is similar to that of background population. Therefore, the general gynaecological care in those women should not be neglected.

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1. Introduction

Multiple sclerosis (MS) is a chronic, inflammatory, neurodegenerative disease, which affects mostly women, with increasing women to men ratio [1]. It has a typical onset between 3rd and 4th decade of life, which is an obvious burden throughout the reproductive period for the majority of suffering women [2]. Poland, is known to have a very high prevalence of MS with the currently estimated morbidity rate of 109/100.000 [3].

The natural course of multiple sclerosis varies, depending mostly on the form of the disease [4]. The severity of disability is usually measured by Expanded Disability Status Scale – EDSS [5], which includes the assessment of pyramidal, cerebellar, brain stem, sensory, bowel, bladder, visual and mental functions. Typical

progress of MS leads to severe impairment, defined as EDSS score of 6.0 (the need to use a cane) with a median time of 28 years [4]. MS has a strong impact on reproductive choices of the affected women – the majority of them resign from having children after the diagnosis [6].

During the last 20 years the pharmaceutical industry has offered more than a dozen of new disease-modifying therapies (DMT), which decrease the number of relapses and which are recently expected to slow down the ultimate disease progression [7]. Furthermore, it has been inevitably proved during the last decades that perinatal outcomes in pregnancies affected by MS do not differ from those in general population [8].

Baring the above in mind, new issues of reproductive health of MS women emerge. It seems that planning maternity should be easier and more MS-affected gestations are likely to be expected. Nevertheless, pregnancies in women with MS require specialist

* Corresponding author at: Pl. Starynkiewicza 1/3, 02-015 Warsaw, Poland.

E-mail address: aleksandra.anna.wielgos@gmail.com (A. Wielgoś).

care starting from the preconception period and further careful counselling is recommended [9].

Additionally, as the life expectancy of this population increases, health problems related not to MS but to age are more likely to appear, including such diseases as reproductive tract neoplasms.

Eventually, the issue of effective contraception plays an important role for women with MS due to teratogenic potential of many DMTs and social matters including future childcare [10]. Effective contraception includes one of the following: sterilization, intrauterine device (IUD), oral hormonal pills, patches or vaginal rings, as well as hormonal injections or implants [11].

The objective of the study was to analyse the issues of reproductive health of women with multiple sclerosis in Polish population in terms of pregnancy planning, effective contraception, outpatient appointments and cervical cancer screening.

2. Material and methods

2.1. Study population

It was a cross-sectional study. The initial study group consisted of 218 women with various forms and stages of MS. A subgroup of 194 women before menopause was selected for the analysis of willingness to have children in the future. In addition, the subgroup of sexually active menstruating women was analysed with regard to contraception use (148 out of 194 cases). The following study was performed along with the research concerning sexual dysfunction in the population of women with relapsing-remitting multiple sclerosis [12]. Patients answered questions both about reproductive health and sexuality.

The survey was distributed among potential respondents using three routes. The first one was an official mean of the Polish Society of Multiple Sclerosis. Female members of the Society received an invitation to an online, anonymous survey. The second group of respondents consisted of female members of the Foundation of Urszula Jaworska, who also completed the questionnaires online and the last group comprised of patients from the Department of Neurology, Medical University of Warsaw. The proportion of surveys obtained was as follows (before and after the application of exclusion criteria, respectively): the Polish Society of Multiple Sclerosis—119 and 110; Urszula Jaworska Foundation—70 and 62; Department of Neurology—29 and 22.

All of the respondents received a set of standardized questionnaires, which consisted of modules, concerning the following issues: demographic data, symptoms, signs and course of MS, reproductive health, sexual performance and psychological comorbidities, including depression and fatigue. Questions about MS signs and symptoms and reproductive health were self-designed, following the Likert-like pattern in cases that allowed it. Patients were asked about their EDSS score. In order to verify it and categorize patients who did not provide their EDSS score, 3 questions about the locomotive status were introduced. The subjects were afterwards categorized into EDSS groups respectively according to their answers.

For the purpose of the analysis 2 definitions addressing the frequency of gynaecological visits and Pap smears were created. "Rare visits" were defined as rarer than once per year and "rare Pap smears" were defined as rarer than one in two years.

2.2. Statistical analysis

Statistical analysis was performed with the use of Statistica 12.0 (StatSoft, Inc.). U-Mann Whitney test and Student T-test were used for quantitative data comparison between two groups and Kruskal-Wallis ANOVA test was applied for the comparison of

three or more groups including quantitative data. Two-sided Fisher's exact test and Chi-square tests were used for categorical and binary data comparison as required. p value $< .05$ was considered significant.

3. Results

The characteristics of the studied group are presented in Table 1.

The first analysed issue was the willingness to have children in the future. 53.01% of respondents declared will to have at least one child. These women were significantly younger ($p < .01$, 28.45 ± 4.56 vs 37.85 ± 6.94 years old), more often had not given birth yet ($p < .001$, 74.2% vs 31.3%), had lower EDSS score, both in terms of EDSS score declared ($p < .006$; 2.2 ± 1.6 vs 3.5 ± 1.9) and in terms of assigned EDSS groups ($p < .006$) and presented lower level of motor deficit ($< .001$). The will for future maternity seemed to be associated with the area of residence ($p < .02$). No association between the education level ($p < .41$), marital status ($p < .06$), employment status ($p < .99$) and willingness to have children was observed. The detailed analysis of the above issue is presented in Table 2.

The second matter was the frequency of gynaecological outpatient appointments and taken Pap smears. 64 (29.9%) of the respondents declared rare visits. Table 3 presents the association between particular demographic parameters and severity of signs and symptoms of MS in relation to the frequency of gynaecological appointments. The only significant aspect was a history of at least one labour – women in this group visited gynaecologist less often than the rest of the analysed population ($p < .02$; 63.7% vs 42.9%). Other analysed factors, including education level ($p < .14$), area of residence ($p < .22$), age ($p < .17$), marital status ($p < .37$) and employment status ($p < .09$) were not significant.

Cervical cancer prophylaxis was also assessed through a question about the frequency of undergone Pap smear examinations. In total, 27 (12.7%) of the respondents declared rare Pap smear examinations. Table 4 presents the association between rare Pap smears and other assessed parameters. Various demographic parameters were connected with less frequent Pap smear examination: more advanced age ($p < .003$), unemployment ($p < .01$), at least one labour ($p < .043$). Higher EDSS score, both in terms of declared score ($p < .048$) and estimated EDSS class ($p < .006$) was associated with low frequency of cytological examination. Stronger balance problems ($p < .003$) and more intense motor deficit ($p < .002$) were associated with rarer Pap smears as well. Patients who rarely underwent Pap smears did not differ in terms of education level ($p < .08$), area of residence ($p < .15$) and marital status ($p < .68$).

The last analysed issue was the current use of any form of effective contraception by sexually active women with MS. Effective contraception was used by 54 (36.5%) respondents. It was most commonly oral hormonal contraception (OC, 43, 29.1% respondents). Hormonal transdermal system was used by 3 (2.0%) respondents and implants by 2 (1.4%) of them. IUD was used by 6 women (4.1%). None declared the use of hormonal injections or vaginal rings. Table 5 presents the associations between effective contraception and various parameters. More frequent use of effective contraception seems to be associated with higher EDSS score ($p < .02$). 41.9% of women receiving DMT declared the use of effective contraception in comparison to 28.3% of those without DMT. The difference was statistically insignificant ($p < .11$). Furthermore, there was no association with age ($p < .34$), educational level ($p < .93$), area of residence ($p < .81$), categorized EDSS score ($p < .44$), marital status ($p < .39$), employment status ($p < .99$) and having at least one child ($p < .70$).

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