

Organic personality disorders in multiple sclerosis

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The paper describes the picture of organic personality disorders in multiple sclerosis patients taking into account the influence of psychosocial factors and reaction to illness.

Key words: organic personality disorders, multiple sclerosis, psychosocial factors

Introduction

Organic personality disorders observed in patients suffering from multiple sclerosis (MS) result from the influence of a constellation of various disturbances of psychic – cognitive and emotional – functions of moderate intensity [1, 3, 10, 14, 16]. More scarcely and at the late stages of the disease they constitute an integral part of dementia [4, 5, 8]. According to numerous authors, the special feature of the clinical picture of those disorders consists in the presence of elements connected with the influence of specific situation of the patients. The patients are usually young disabled persons exposed to numerous stress events in social and occupational life, often without a chance of finding an earning job, sometimes requiring another person's help [1, 13, 15, 16, 19]. The impact of these elements is so important that it evokes a question to what extent the severity of the detected organic personality disorders is connected with the reaction to the illness and difficulties in social contacts, and to what extent – with the degree of organic brain damage [1, 13]. The most popular nowadays, interactive model of mental disorders in multiple sclerosis assumes that the brain injured by the illness reacts more strongly to negative environmental factors. In effect, it produces a rich psychopathological picture (i.a., personality disorders, depression, various psychological responses to the illness, and – at the late stages of the illness – dementia) [16].

The aim of this study is to analyse the picture of the organic personality disorders in patients with multiple sclerosis. We shall take into account the influence exerted on this picture by 29 variables including the degree of progression of the disease, social situation of the patients and their reaction to the illness.

Material

Examinations covered 60 patients treated in the Department of Neurology, Medical University of Wrocław, with a diagnosis of multiple sclerosis (34 women and 26 men) at the age from 21 to 60 years (mean age = 40 years). The duration of illness ranged from 6 months to 31 years (mean = 8 years). All patients fulfilled the criteria of clinically definite MS by Poser et al. [12]. In three patients the course of illness was slowly progressing, in the others – recurrent-remitting.

Method

The analysis of the organic personality disorders was conducted with the use of the Organic Brain Damage Rating Scale (OBDRS) for diagnostics of the organic psychopathological symptoms [7]. This method includes 21 psychopathological symptoms rated on a four-item scale: 0 – absence of the symptom; 1 – little intensity; 2 – moderate intensity; 3 – high intensity of the symptom. It also takes into account the data from the interview, physical examination and the results of additional examinations (including the result of psychological test concerning the so-called brain organics). Relations were detected between organic psychopathological symptoms and the following features: the patient's age, his/her education level, age at onset, duration of illness, intensity of symptoms, work, attitude towards his/her own illness, the family's attitude to the patient. The variables were assessed according to the following scales:

Age: up to 35 years (0 points), 35+ to 40 years (1 point), more than 40 years (2 points)

Education: primary (0 points), vocational (1 point), secondary (2 points), university (3 points).

Age at onset: up to 35 years (0 points), 35+ to 40 years (1 point), more than 40 years (2 points).

Duration of illness: up to 3 years (0 points), 3+ to six years (1 point), more than 6 years (2 points).

Intensity of neurological symptoms: distinct symptoms, slightly decreasing efficiency, the patient moves well (0 points), the patient moves with difficulty (1 point) the patient in a wheelchair (2 points), the patient confined to bed (3 points).

Work: working (0 points), part-time job (1 point), non-working (2 points).

Attitude to own illness: breakdown (0 points), passive acceptance (1 point), attempts at coping with the situation (2 points).

Family's attitude to the patient: negative (0 points), indifferent (1 point), positive, but numerous conflicts present (2 points), highly positive (3 points).

The relations between organic psychopathological symptoms and the features listed above as well as relations between couples of psychopathological symptoms were determined with the use of Kendall's rank correlation coefficient tau for particular pairs of variables, taking into account correction for bound ranks [2]. The obtained correlation matrix was submitted to factorial analysis with the use of Statgraphics statistical package [18]. Factorial loads subordinated to particular variables were determined after rotation of the co-ordinate system with Varimax method.

Results

According to the OBDRS assessment, the organic personality disorders occurred in 36 patients (60%) in a slight degree, and in 24 persons (40%) in moderate degree.

Table 1

**Intensity of organic psychopathological symptoms
and the results of analysis of the remaining variables**

A. Psychopathological symptoms	Score				Medians
	0	1	2	3	
Consciousness disturbances	59	1	0	0	0
Orientation disturbances	58	2	0	0	0
Attention disturbances	33	18	7	2	0
Memory disturbances	28	21	10	1	1
Commutations	60	0	0	0	0
Speech expression disturbances	48	11	1	0	0
Focal dystonias	52	8	0	0	0
Decrease of initiative	46	11	3	0	0
Egocentrism	38	12	8	2	0
Fatigability	25	13	13	9	1
Intellectual impairment	45	6	8	1	0
Somatic ailments	4	7	25	24	2
Mood depression	21	18	16	5	1
Affective blunting	47	10	3	0	0
Affective instability	33	17	7	3	0
Depression of higher emotionality	47	10	2	1	0
Depression of libido	40	9	7	4	0
Disturbances of other drives	44	7	7	2	0
Motor disturbances	28	17	17	0	1
Difficulties at work	4	5	7	44	3
Rhythm disturbances	22	19	17	2	1
B. The remaining variables					
	0	1	2	3	Medians
Age	21	12	27	-	1
Education	5	11	26	18	2
Age at onset of illness	39	12	9	-	0
Duration of illness	17	18	25	-	1
Intensity of symptoms	17	18	15	10	1
Work	9	7	44	-	2
Attitude to own illness	12	18	23	-	2
Family's attitude toward the patient	4	13	20	16	2

The intensity of particular symptoms is presented in table 1.

NOTE: Information concerning attitude to own illness and the family's attitude towards the patient

could be collected from 53 persons only.

Taking into consideration the medians of the obtained results, we can say that the symptoms with the highest intensity included: difficulties at work, somatic ailments, memory deficiency, fatigability, mood depression, motor disturbances and biorhythm disturbances. Part B of the table illustrates the distribution of results concerning the remaining variables: prevalence of persons with secondary and university education in the examined group, prevalence of young age at the onset of illness and prevalence of non-working patients is striking. The patients' attitudes to their illness varied – attempts at coping with the disorder and passive acceptance prevailed. The families' attitudes to the patients were often positive, but marked with numerous conflicts, or highly positive.

As regards psychopathological symptoms, the strongest correlations occurred between affective blunting and depression of higher emotionality ($\tau = 0.5981$) decrease of criticism ($\tau = 0.5677$), and intellectual impoverishment ($\tau = 0.5412$); between intellectual impoverishment and memory impairment ($\tau = 0.4883$), depression of higher emotionality, decrease of criticism ($\tau = 0.4233$) and motor disturbances ($\tau = 0.4179$); between appetite as well as sleep disorders and biorhythm disturbances ($\tau = 0.4169$); between fatigability and motor impairment ($\tau = 0.4105$) and memory impairment ($\tau = 0.3061$). The remaining variables were significantly correlated with the following psychopathological symptoms: age with affective blunting ($\tau = 0.3068$); age at onset with biorhythm disturbances ($\tau = 0.3062$); duration of illness with libido disorders ($\tau = 0.3969$) and with difficulties at work ($\tau = 0.3830$); intensity of symptoms with difficulties at work ($\tau = 0.53$), attitude towards work ($\tau = 0.4602$) and libido disorders ($\tau = 0.4023$). Age was significantly correlated with the age at onset of illness ($\tau = 0.5781$).

The factors distinguished on the basis of factorial analysis of the obtained correlation coefficients are presented in table 2. Eighteen of the 28 obtained factors explain 90.6% of variability of the results. No factor with higher significance than that of the remaining ones was detected.

Discussion of results

In the examined group of patients suffering from multiple sclerosis, the organic personality disorders occurred with slight or moderate intensity. This is in accord with the data from literature referring to global assessment of psychic functions in multiple sclerosis [10]. Severe disturbances of psychic functions are rare in this disease and occur rather in the period of advanced invalidity [4, 5].

The clinical picture of the organic personality disorders consisted mostly of memory disturbances, fatigability, mood depression, motor impairment and biorhythm disturbances. The patients complained of numerous somatic ailments. The result obtained in this area is undoubtedly connected with the applied method, which was based on the global assessment of psychopathological disturbances, without analysing the nature of these disturbances. As the analyses indicate, however, certain global ratings, including the patients' intuitive assessment of their own psychic functions (taken into account in the present study), prove to be fairly accurate [10].

The features of a random sample of patients, like young age at onset, prevalence of women as well as prevalence of persons with secondary and university level of

Table 2

The most important factors distinguished in factorial analysis (18 of 28)

Factor	% of variance	Cumulating % of variance	Features with the highest positive load	Load
1	15.8	15.8	Depression of higher emotionality Affective blunting Decrease of criticism	0.85429 0.76419 0.73316
2	10.6	26.4	Attitude towards work Difficulties at work Intensity of symptoms	0.89284 0.88383 0.61616
3	7.6	34.0	Memory disturbances Intellectual impairment	0.88824 0.53506
4	7.2	41.2	Age Age at onset	0.85282 0.85049
5	6.2	47.4	Speech expression disturbances Duration of illness	0.84349 0.54455
6	5.4	52.8	Egocentrism Orientation disturbances	0.89339 0.56204
7	5.0	57.8	Mood depression Motor impairment	0.87457 0.37652
8	4.5	62.3	Focal dysphasia	0.89351
9	4.1	66.4	Motor impairment	0.38383
10	3.9	70.3	Education	0.90346
11	3.8	74.1	Biorhythm disturbances	0.8955
12	3.0	77.1	Affective instability	0.92428
13	2.8	79.9	Attention disturbances	0.92631
14	2.5	82.4	Disturbances of consciousness	0.88187
15	2.3	84.7	Depression of libido	0.84084
16	2.2	86.9	Attitude to own illness	0.91441
17	1.9	88.8	Somatic ailments	0.91165
18	1.8	90.6	Disturbances of other drives	0.81195

education, are recognised as fairly typical for multiple sclerosis [4].

The disease made it impossible for a large proportion of patients to work, and this fact was connected with the intensity of neurological symptoms, and not of psychopathological disturbances. This is a partial answer to the question frequently posed in the literature about the role of mental and physical dysfunction in formation of functional disorders in this group of patients [1, 13, 15].

Emotional disturbances are an important feature of the clinical picture of multiple sclerosis [1, 14, 16]. In the examined group of patients these disturbances were significantly correlated with intellect impairment and the patients' age. In fact, the described correlation between emotional disturbances and the intensity of neurological symptoms was not confirmed [16]. The only exception here is the correlation between disturbances

of libido and intensity of these symptoms.

Duration of illness, the patient's age, age at onset and attitude towards work may be mentioned as significant while answering the question about medical, biological and social factors exerting their influence on particular psychopathological symptoms of multiple sclerosis [1]. However, the relatively weak correlation between psychopathological disorders and the variables characteristic of the course of illness induces us to consider the possible functional background of these disorders.

The method of factorial analysis indicated as many as 28 factors explaining the obtained values of correlation coefficients. I took into consideration 18 of these factors, explaining jointly 90.6% of variability of all results. The large number of these factors as well as the picture of features most loaded with them, presented in table 2 suggests high complexity of mechanisms determining the obtained picture of organic personality disorders. This may be connected with the too vaguely determined diagnostic criteria of those disorders and with the applied diagnostic method. The obtained results suggest a high importance of emotional factors in shaping the picture of organic personality disorders. The influence of these factors is undoubtedly complex and multifarious. This complexity of influences and interdependencies is recognised and analysed more and more frequently [6, 17]. My earlier report concerning the factors influencing the picture of psycho-organic syndrome in multiple sclerosis, presenting the results of examination of a smaller sample of patients [9], indicated a significant role of memory disturbances as the pivotal element of the syndrome. The importance of memory disturbances in multiple sclerosis is undoubtedly high, but – as the results of the present study as well as the data from literature show – their central role is not that obvious.

Conclusions

1. Organic personality disorders in the examined group of patients were of slight or moderate intensity.
2. The important elements of organic personality disorders included memory disturbances, fatigability, mood depression, motor impairment, biorhythm disturbances and numerous somatic ailments. Difficulties at work and emotional disorders were of essential importance.
3. The picture of organic personality disorders was influenced mainly by duration of illness, the patient's age, age at onset and attitude towards work.
4. The results of factorial analysis indicate high complexity of mechanisms constituting the basis for the organic personality disorders in multiple sclerosis.

Literature

1. Arias Bal MA, Vazquez-Barquero JL, Pena C, Miro J, Berciono JS. *Psychiatric aspects of multiple sclerosis*. Acta Psychiatr. Scand. 1991; 83, 4: 292-296.
2. Brzeziński J. *Elementy metodologii badań psychologicznych*. [Elements of Methodology of Psychological Investigations]. Warszawa: PWN; 1980.
3. Carroll M, Gates R, Roldan F. *Memory impairment in multiple sclerosis*. Neuropsychologia 1984; 22: 297-302.

4. Cendrowski W. *Choroby demielinizacyjne. [Demyelination Disorders]*. Warszawa: PZWL; 1991.
5. Fontaine B, Seilhean D, Tourbah A, Daumas-Duport C, Dnyckaerts C, Benoit N, Devaux B, Hauw J, Rancurel G, Lyon-Caen O. *Dementia in two histologically confirmed cases of multiple sclerosis: one case with isolated dementia and one case associated with psychiatric symptoms*. J. Neurol. Neurosurg. Psychiatr. 1994; 57: 353-359.
6. Herzyk A. *Zaburzenia emocjonalne w dysfunkcjach mózgowych. [Emotional disturbances in brain dysfunctions]*. In: Herzyk A, Kądziaława D. eds. *Zaburzenia w funkcjonowaniu człowieka z perspektywy neuropsychologii klinicznej. [Disturbances in Human Functioning in the Perspective of Clinical Neuropsychology]*. Lublin: Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej; 1996. p. 205-238.
7. Jarema M, Kramarz E, Warnecka-Przybylska M. *Próba zastosowania Skali Objawów Organicznego Uszkodzenia Mózgu w diagnostyce zespołu psychoorganicznego. [An attempt at application of Organic Brain Damage Rating Scale in the diagnostics of organic psychopathological symptoms]*. Psychiatr. Pol. 1984; 18, 5: 451-456.
8. Jaroszyński J. *Zespoły zaburzeń psychicznych. [Syndromes of Mental Disorders]*. Warszawa: Instytut Psychiatrii i Neurologii; 1994.
9. Jarzębska E. *Obraz zespołu psychoorganicznego w stwardnieniu rozsianym. [The picture of organic disorder in multiple sclerosis]*. Psychiatr. Pol. 1998; 32, 5: 597-604.
10. Kujala P, Portin R, Ruutiainen J. *Memory deficits and early cognitive deterioration in MS*. Acta Neurol. Scand. 1996; 93, 5: 329-335.
11. Mazurek BM, Szepietowska M. *Neuropsychologiczna analiza zaburzeń pamięci u pacjentów ze stwardnieniem rozsianym. [Neuropsychological analysis of memory disturbances in patients with multiple sclerosis]*. In: Klimkowski M, Herzyk A. eds. *Neuropsychologia kliniczna. [Clinical Neuropsychology]*. Lublin: Wydawnictwo UMCS; 1994. p. 213-236.
12. Poser CM, Paty DW, Scheinberg L. *New diagnostic criteria for multiple sclerosis: guidelines for research protocols*. Ann. Neurol. 1983; 13: 227-231.
13. Rao SM, Loe GJ, Ellington L, Nauertz T, Bernardin L, Unverzagt F. *Cognitive dysfunction in multiple sclerosis. II. Impact on employment and social functioning*. Neurology 1991; 41: 692-696.
14. Rao SM. *Neuropsychology of multiple sclerosis*. Current Opinion in Neurology 1995; 8: 216-220.
15. Rodriguez M, Siva A, Ward J, Stolp-Smith K, O'Brien P, Kurland L. *Impairment, disability and handicap in multiple sclerosis: a population – based study in Olmsted County, Minnesota*. Neurology 1994; 44: 28-33.
16. Ron M, Feinstein A. *Multiple sclerosis and the mind*. J. Neurol. Neurosurg. Psychiatr. 1992; 55: 1-3.
17. Sadovnick AD, Remick RA, Allen J, Swartz E, Yee IML, Eisen K, Farquhar R, Hashimoto SA, Hooge J, Kastrukoff LF, Morrison W, Nelson J, Oger J, Paty DW. *Depression and multiple sclerosis*. Neurology 1996; 46: 628-632.
18. *Statgraphics*. Rockville: STSC Inc.; 1991.
19. Warlow Ch. *Neurologia. [Neurology]*. Warszawa: Wydawnictwo Lekarskie PZWL; 1996.

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