

## POINT OF VIEW

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**NON-COGNITIVE DISORDERS IN PATIENTS WITH DEMENTIA HOSPITALIZED IN THE CENTRE OF NEURODEGENERATIVE DISEASES OF THE YAKUT SCIENTIFIC CENTRE FOR COMPLEX MEDICAL PROBLEMS FOR 2019 -2021**

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A specific problem of the therapy of neurodegenerative disorders is mental symptoms, which significantly worsen the social adaptation of patients and further prognosis, require additional therapy with antipsychotics, often giving various side effects. For the period from 2019 to 2021, 51 clinical cases of various nosological forms of dementia were analyzed in the neurodegenerative center Yakut scientific center. Alzheimer's disease was most often diagnosed - 29 cases (56.8%), patients with frontotemporal dementia were most often admitted in second place - 9 people (17.6%), dementia with Levi's corpuscles (7.8%) and vascular dementia (7.8%) were most often diagnosed in third place. The average overall score on the Moca scale was 10.08±5.9 points, which corresponds to severe cognitive impairment. The difference in the age of manifestation in different ethnic groups of patients was established, as well as clinical and psychopathological features of patients with various nosological forms of dementia, taking into account ethnicity, as well as features of corrective therapy. Of the non-cognitive neuropsychic disorders, the symptom of agitation and aggression was most often detected.

**Keywords:** non-cognitive symptoms, dementia, Alzheimer's disease, frontotemporal dementia.

**Introduction:** One of the urgent problems of health care and social protection is to render qualitative medical and social help to patients with neurodegenerative diseases (NDD). It is known that neurodegenerative diseases are age-dependent and affect people of older age group. In 2019, the Center for Neurodegenerative Diseases at YSC CMP began its activities to provide specialized medical care to patients with NDD. The Center is the main link in the proposed improved organizational model of specialized care for patients with NDD and represents a single block of specialized care, including psychiatric care, where all stages of medical care are interconnected [1]. A separate problem in NDD therapy is mental disorders, which significantly worsen patients' social adaptation and further prognosis and require additional therapy with antipsychotics, often with various side effects.

Behavioral and psychiatric symptoms of dementia (BPSD) include a heterogeneous group of non-cognitive manifestations: behavioral disorders and agitation, anxiety, irritability, depression, apathy, disinhibition, delusions, hallucinations, sleep and appetite disorders [5]. Ninety to 97% of patients with dementia have at least one PPSD, with apathy, depression, irritability, agitation, and restlessness being observed more frequently [6]. In 70% of patients with dementia, agitation is the most severe symptom [4]. The causes of behavioral and psychiatric symptoms are usually manifold and include biological, psychological, social, and environmental factors. To correct non-cognitive symptoms in patients with dementia, it is extremely important to characterize the social and physical environment that causes or aggravates behavioral and mental symptoms [3].

**Materials and methods:** the material of the study were clinical cases of patients hospitalized in the Center for Neurodegenerative Diseases between 2019 and 2021 years. The Montreal cognitive assessment scale was used to analyze the structure and degree of cognitive impairment. Statistical processing of the study results was performed using Statistica 6.0 software. Spearman rank correlation analysis, Mann-Whitney coefficient and Kolmogorov-Smirnov were used in the analysis. Differences were considered statistically significant at  $p < 0.05$

**Results and Discussion:** A total of 51 clinical cases of dementia in patients hospitalized in the Department of Neurode-

generative Disorders of YSC CMP from 2019 to 2021 were analyzed. The mean age at the time of the first hospitalization with this syndrome was 73.21±7.37 years. There were 39 women (76.5%) and only 12 men (23.5%). Mostly urban residents were hospitalized - 40 people (78.4%). The number of rural residents among the patients was small - only 11 people (21.5%). By nationality representatives of the yakut ethnic group (39 persons (76.5%)), the russian group (10 persons (19.6%)), other ethnic groups (2 persons) (Ukrainian, Korean) were mostly admitted for inpatient examination and treatment. Moreover, this trend persisted among urban patients as well. Thirteen people (24.5%) had secondary school education, 17 people (33.3%) had specialized secondary education, and 21 people (41.2%) had higher education. Only 9 persons were previously engaged in low-skilled labor, the rest worked as specialists, with school teachers being the most common occupation (17.6% or 9 persons). There were 25 married at the time of hospitalization (49%), 19 widows/widowers (37.2%), and only 7 single persons (13.7%).

Most often Alzheimer's disease was diagnosed - 29 cases, which accounted for more than half of all dementia cases (56.8%), in the second place we had 9 patients with frontotemporal dementia (17.6%), in the third place most often dementia with Levi's corpuscles (7.8%) and vascular dementia (7.8%) were diagnosed. The total duration of the disease averaged 2.3 ± 1.3 years. According to

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the degree of severity, moderate (cognitive disorders were already pronounced, criticism was reduced or absent, but the patient still retained self-care skills) and severe (severe cognitive disorders, loss of self-care skills, need for constant supervision and care) were diagnosed most frequently, which was 37.2% each. Mild degree of dementia was diagnosed (initial memory and attention disorders, the presence of full and partial criticism) less frequently and was identified in 13 people (25.4%). Cognitive impairments were assessed in almost all patients using the Moca scale. The mean total score was  $10.08 \pm 5.9$ , corresponding to severe cognitive impairment. No significant differences in the overall score by gender were found, with an average score of 11.4 for males and 10.1 for females.

A correlation analysis revealed statistically significant correlations between the degree of dementia severity and the overall Moca score ( $r = -0.544$ ). Indeed, as the degree of dementia became more severe, the Moca score decreased. A statistically significant direct correlation was also found between the degree of aggression expression and morbid ideas. Indeed, the more aggressive the behavior, the more frequent the occurrence of painful ideas in the structure of the mental status.

When comparing patients of the yakut ethnic group and the russian group, no significant differences in the clinical picture were revealed. The only thing that was found was a statistically significant difference between the age of manifestation of dementia. Thus, the age of manifestation in the yakut group was  $74.7 \pm 6.6$ , while in the russian group it was  $68.4 \pm 8.1$  ( $p < 0.05$ ). This difference was probably due to the large difference in the number of patients in these two groups.

Patients without pronounced behavioral and psychopathological symptoms were most often admitted to the department, since the department is not designed to treat patients with severe psychiatric disorders. But due to the fact that dementia is quite often accompanied by mental disorders, especially at a moderate and severe degree, patients were quite often diagnosed with some or other moderate mental disorders. Aggressive behavior was observed in 12 patients, which was approximately 23.5%, i.e., approximately  $\frac{1}{4}$  of the patients. Aggression was mostly verbal, and was more frequently detected in patients with frontal temporal lobe degeneration. Aggressive behavior in patients was fairly well controlled by the use of the atypical antipsychotic quetiapine and the minor

neuroleptic sulpiride. Anxiety states were also observed quite frequently in patients with dementia and accounted for 23.5%. Hallucinatory experiences were much less frequently observed in patients and were diagnosed only in five clinical cases and mainly in patients with dementia with Levy corpuscles, in which hallucinatory symptoms are pathognomic. A characteristic feature of hallucinations in dementias is extracranial projection and predominantly lesions of the visual analyzer. Delusions (most often unsystematized, unstable, and polymorphic) were diagnosed in 5 (9.8%) patients and in all cases were accompanied by marked aggression. We would like to note that the delusions were mainly formed on the basis of memory disorders, and were extremely unstable, of domestic content, directed toward caring relatives. Self-care skills were preserved only in 11 (21.5%) patients, while severe disorders were observed in 10 (19.6%) cases, in all other cases partial preservation of primitive self-care skills was observed, when complex ones were already lost. Such impairments were characteristic of dementia of moderate severity. Only 8 (15.6%) out of 51 patients had previously applied or were already registered in the psychiatric hospital due to some or other mental disorders and consequently received psychotropic medications. It should be noted that only two patients from our sample underwent inpatient treatment in the psychiatric hospital after diagnosis, i.e. their psychiatric symptoms were so severe that they required urgent hospitalization in the psychiatric hospital. One patient was subsequently deprived of legal capacity. In general, it is possible to note low frequency of various productive psychopathological disorders in the patients. At the analysis of emotional-volitional disorders, it appeared that the majority of patients had some disorders, while the remaining patients (43.1%) had no expressed disorders. The most frequently diagnosed was a dullish complacent mood (23.5%), which accompanied a severe degree of dementia and was indicative of a loss of critical faculties. In the second place, apathy, passivity, with no apparent decrease in mood was most frequently observed, which was detected in 9 cases (17.6%). We would like to note that in our study moderate or severe depressive states were practically not encountered, probably this feature is related to the fact that depression is characteristic mainly at the very beginning or in the prodrome of dementia disorders and to some extent reflects the preservation of critical

faculties. Since severe and moderate depressive disorders were not detected, accordingly, suicidal tendencies in dementia patients were also not established during examinations. In general, it can be noted that many authors also note rare suicidal behavior in this category of patients, especially in moderate and severe dementia. Early onset of loss of criticism, apathy, indifference, and emotional dullness on the background of rapidly progressing cognitive disorders are protective factors against suicidal behavior. The established risk factors for suicidal behavior in dementia are: depressive disorders, relatively young age (age of onset of the disease up to 65 years), concomitant somatoneurological pathology, lack of positive dynamics from the ongoing therapy, loss of autonomy and social isolation [2].

Practically all patients with one or another mental symptoms received therapy with modern psychotropic drugs. To relieve aggressive behavior and productive symptoms, we used the drug quetiapine in doses ranging from 25 to 100 mg and sulpiride in doses ranging from 50 to 150 mg/s. For the correction of disorders of the emotional sphere, the most frequently used drugs were Grandaxin, Fevarin, Spitomine, and Velaxin, which also corresponds to modern standards of therapy of mental disorders. It also can be noted when prescribing nootropics, choline donors, some patients had worsening of behavior in the form of aggression, appearance of hallucinations, mainly in patients with Alzheimer's disease of average, severe degree of severity, which regressed after discontinuation of the drug.

**Conclusions:** 1. Patients who lived in Yakutsk were most often admitted, and most of the patients belonged to the yakut ethnic group. It is likely that such a pronounced difference in the ethnic composition of patients with dementia is due to the fact that many elderly people who are not from the yakut ethnic group move to other regions of the Russian Federation for permanent residence, while patients of yakut nationality in most cases remain resident in the Republic.

2. No differences were found in the clinical picture of dementias between the yakut and russian groups. The only difference that was found was the difference in the dementia manifestation. Thus, the age of dementia manifestation in the yakut group was  $74.7 \pm 6.6$ , and in the russian group was  $68.4 \pm 8.1$  ( $p < 0.05$ ), but due to the small number of patients in the russian sample, this difference found in our study requires further testing on larger patient samples.

3. Among psychiatric disorders, aggressive (agitated) behavior was the most common, occurring in 23.5% of all patients. Of all patients, only 15.6% (8 people) were at the time of hospitalization or were subsequently taken for outpatient observation in the psychiatric hospital of the Republic of Sakha (Yakutia) and regularly received medication correction of mental disorders.

4. No clinically significant depression was detected among the patients, which was due to the fact that most patients were admitted with a moderate to severe degree of dementia.

5. In case of early manifestations of cognitive disorders at the outpatient level, it is necessary to refer to the department of YSC CMP, in order to make an early diagnosis, to select appropriate therapy to suspend the progression of these diseases, to prolong patients' independence. If marked psychotic and

behavioral disorders are detected, refer for treatment to psychiatrist at the regional psychiatric hospital of the Republic of Sakha (Yakutia).

## References

1. Davydova T.K., Kononova S.K., Sidorova O.G., Romanova A.N., Schneider N.A. Opyt sozdaniya specializirovannogo centra medicinskoj pomoshchi dlya bol'nyh s nejrodegenerativnymi zabolevaniyami na baze nauchnogo uchrezhdeniya [Experience in creating a specialized medical care center for patients with neurodegenerative diseases based on the Clinic of scientific institution. Yakut Medical Journal. 2020; 4: 53 – 57 (In Russ.).]
2. Golenkov A.V., Filonenko V.A., Sergeeva A.I. Suicidal'noe povedenie pri demenciyah [Suicidal behavior in dementia]. Suicidologiya [Suicidology. 2021; 2: 91 – 113 (In Russ.).]
3. Mendelevich E.G. Kognitivnye i nekoognitivnye nejropsihicheskie rasstrojstva pri demencii i metody ih korrekcii [Cognitive and non-cognitive neuropsychic disorders in dementia and methods of their correction]. Nevrologiya, nejropsihiatriya, psihosomatika [Neurology, neu-

ropsychiatry, psychosomatics. 2017; 9 (2): 65-70 (In Russ.).]

4. Davydova T.K., Kononova S.K., Sidorova O.G. [et al.]. Experience of creating a specialized center of medical care for patients with neurodegenerative diseases on the basis of a scientific institution. Yakutsk medical journal. 2020; 4: 53 – 57.

5. Golenkov AV, Filonenko VA, Sergeeva AI [et al.]. Suicidal behavior in dementia. Suicidology. 2021; 2: 91 – 113.

6. Mendelevich E.G. Cognitive and non-cognitive neuropsychiatric disorders in dementia and methods of their correction. Neurology, neuropsychiatry, psychosomatics. 2017; 9 (2): 65- 70.

7. Acharya D, Harper D, Achtyes E. [et al.]. Safety and utility of acute electroconvulsive therapy for agitation and aggression in dementia. Int J Geriatr Psychiatry. 2015; 30 (3): 265-73. doi: 10.1002/gps.4137.

8. Cerejeira J, Lagarto L, Mukaetova-Ladinska E. Behavioral and Psychological Symptoms of Dementia. Front Neurol. 2012; 7: 69 – 73. doi: 10.3389/fneur.2012.00073.

9. Steinberg M, Shao H, Zandi P [et al.]. Cache County Investigators. Point and 5-year period prevalence of neuropsychiatric symptoms in dementia: The Cache County study. Int J Geriatr Psychiatry. 2008; 23(2): 170-175.

## A CASE FROM PRACTICE

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## BOTULINUM THERAPY FOR WRITING SPASM

The article presents a clinical case of a writing spasm, examines the clinical features of this disease at the present stage, and also provides modern methods of treatment that facilitate the patient's condition and quality of life.

**Keywords:** dystonia, hyperkinesis, botulinum therapy, botulinum toxin type A, focal dystonia, writing spasm, dyskinesia.

**Introduction.** Writing spasm is a type of focal dystonia characterized by a violation of the motor skills of the leading hand, in view of which the act of writing and small movements of the brush are greatly hindered or become impossible. It was first described by Bernardino Ramazzini in 1713 and was called the "scribal disease" manifested by pronounced fatigue of the hand when writing.

This disease affects not only those who write long and fast, it can also occur in musicians, machinists, programmers. It occurs equally in both men and women. The main characteristic of the writing spasm is the gradual development, often

patients do not notice the appearance of the first symptoms, the disease initially manifests itself with slight changes in handwriting, a feeling of awkwardness when performing small movements of the brush, symptoms disappear after the termination of writing, changing position or shaking the hand. Then gradually the handwriting becomes rough, the movements become sharp and difficult to control, a pronounced kinetic tremor appears, and twisting of the brush can also be observed. Patients use corrective gestures, thereby reducing hyperkinesis. And they can also feel relief when changing the position of the hand when writing, using pens of certain shapes or changing the angle of inclination [7].

When this disease occurs, many factors precede it. First of all, it should be noted the nature of the work - as previously mentioned, musicians, programmers and professions related to writing mostly suffer. The monotony of actions against the background of emotional tension has a special effect. There are also a

number of other reasons—features of the shoulder muscles, scoliosis, mental injuries, personal characteristics [3].

According to the Govers classification, writing spasm is divided into 4 types: convulsive – characterized by hypertonicity in the muscles of the hand, a feeling of heaviness and awkwardness of the hand. Paretic - sharp weakness in the muscles of the hand when writing. Tremor – tremor in the working hand. Neural – accompanied by pain during work [3].

It is noteworthy that with palpation, the muscles of the hands of normal consistency are painless. Patients are completely free to perform other motor acts. Further, these properties are gradually lost and other motor functions that require a high level of coordination of movements begin to suffer.

**Diagnostics.** In addition to a thorough neurological examination, it is necessary to test the letter - the quality of the handwriting, the speed of writing, the presence of corrective gestures are evaluated. You should also consult a psychiatrist

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