REHABILITATION APPROACHES TO PHONATION PROBLEMS AND SWALLOWING IN PATIENTS WITH PARKINSON'S DISEASE.

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Introduction. Parkinson's disease (PD) is a chronic progressive neurodegenerative disease, manifested by a wide range of motor and non—motor symptoms, combined leading to disability of the patient. Despite complex dopaminergic therapy, which can compensate for timely appointment, most of the clinical manifestations, dysphonia and dysphagia belong to the group treatment-resistant symptoms [1]. The frequency of phonation and swallowing disorders in PD patients reaches 80% [2] and their occurrence is a predictor of a more rapid and severe development of the disease. The influence of dysphonia and dysphagia on the patient's quality of life becomes evident at the advanced stages of the disease and the indicators of both parameters correlate with each other [3]. Clinically, dysphonia is a more obvious symptom, while from 15 to 33% of cases of dysphagia remain undiagnosed until the development of aspiration complications [4]. However, only 3-4% of patients in need of correction seek help from a speech therapist or a phoniatrist [5]. The data of the conducted studies indicate the effectiveness of targeted prevention of phonation and swallowing disorders, such as: Lee Silverman training (LVST), control of exhalation and voice pitch, music therapy with voice training, choral singing and breathing exercises. At the same time, a positive effect of improving phonation on swallowing function was noted.

Keywords: Parkinson's disease, dysphonia, dysphagia, neurorehabilitation, breathing exercises.

РЕАБИЛИТАЦИОННЫЕ ПОДХОДЫ К ПРОБЛЕМАМ ФОНАЦИИ И ГЛОТАНИЕ У ПАЦИЕНТОВ С БОЛЕЗНЬЮ ПАРКИНСОНА.

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Аннотация. Болезнь Паркинсона (БП) — хроническое прогрессирующее нейродегенеративное заболевание, проявляющееся широким спектром двигательных и не моторных симптомов, в совокупности приводящих к инвалидности пациента. Несмотря на комплексную дофаминергическую терапию, которую можно компенсировать при своевременном назначении, большинство клинических проявлений, дисфония и дисфагия относятся к группе симптомов, устойчивых к лечению [1]. Частота нарушений фонации и глотания у пациентов с БП достигает 80% [2], и их возникновение является предиктором более быстрого и тяжелого развития заболевания. Влияние дисфонии и дисфагии на качество жизни пациента становится очевидным на поздних стадиях заболевания, и показатели обоих параметров коррелируют друг с другом [3]. Клинически дисфония является более очевидным симптомом, в то время как от 15 до 33% случаев дисфагии остаются недиагностированными до развития аспирационных осложнений [4]. Однако

только 3-4% пациентов, нуждающихся в коррекции, обращаются за помощью к логопеду или фониатру [5]. Данные проведенных исследований свидетельствуют об эффективности целенаправленной профилактики нарушений фонации и глотания, таких как: тренинг Ли Сильвермана (LVST), контроль выдоха и высоты голоса, музыкотерапия с тренировкой голоса, хоровое пение и дыхательные упражнения. В то же время было отмечено положительное влияние улучшения фонации на функцию глотания.

Ключевые слова: болезнь Паркинсона, дисфония, дисфагия, нейрореабилитация, дыхательные упражнения.

Materials and methods. The study included 40 patients with Parkinson's disease (18 women /22 men), severity according to HenYar stage 2 (n=10), stage 3 (n=26), stage 4 (n=4) on stable drug therapy. The severity of manifestations of Parkinson's disease was assessed by Unified Rating Scale of Parkinson's disease, MDS version. All patients were screened for cognitive functions — a brief mental status Assessment Scale (MMSE), affective functions — a Hospital Anxiety and Depression Scale (HADS), a clinical examination of a speech therapist with the determination of the dysphonia degree coefficient (DSI) and dysphagia. When identifying pseudobulbar disorders in the form of dysphonia and dysphagia patients were included in the rehabilitation program, including physical therapy, music therapy, speech therapy correction with control of exhalation and voice pitch, correctional psychotherapy. The duration of the program is 8 days. The evaluation of the final result was evaluated by a speech therapist using analog scales.

Results. According to the results of the examination, dysphonia was detected in 31 (77.5%) patients with PD. The severity of dysphonia is from 1 to 3 points according to DSI. Of these, a combination of dysphonia and dysphagia was detected in 22 (55%) patients. The severity of dysphagia is from 1 to 2 points on an analog scale.

At the same time, the presence of dysphonia was determined by self—assessment in 15 patients, the presence of mild and moderate dysphagia in 7 patients. Patients with pseudobulbar disorders were characterized by more severe symptoms of the disease according to UPDRSMDS ($p<0.05$) and according to the stage of pain (HenYar scale), but were comparable in severity of anxiety, depression and cognitive status. There were also no statistically significant differences in the duration of the disease. After undergoing rehabilitation measures, the patients were divided into 2 groups according to the effect achieved. Group 1 — 18 patients — positive effect (+mean 1.0 points on DSI (dysphonia), + mean 0.5 on dysphagia scale). Group 2 — 13 patients — no effect. There were no significant differences in motor, affective, cognitive statuses in the groups. In group 2 patients, as a result of rehabilitation and psychocorrective classes, low motivational potential, tendencies to devaluation of methods were noted. The presence of behavioral dysphonia was determined in both groups.

Conclusion. Correction of pseudobulbar disorders in patients with Parkinson's disease is a complex medical and social task, since it affects not only the quality of life and survival of the patient, but also increases the burden on the caregiver. The study confirms the latent course of pseudobulbar symptoms, the low percentage of self—determination of the defect by the patient - 48.3% and the lack of awareness of patients about correction techniques. Considering the combined development of dysphonia and dysphagia in 71% of cases, the data obtained suggest that the possibility of excluding dysphagia in all PD patients with phonation disorders. The development of pseudobulbar disorders is based on sensorimotor deficiency due to reduced activation of the facial, pharyngeal and respiratory muscles, which is resistant to standard dopaminergic therapy. Based on this, only targeted training of these muscles can have a significant effect on the correction of phonation and

swallowing disorders. The lack of a clear relationship between pseudobulbar disorders and motor, affective, cognitive statuses is more obvious presents the motivational and personal aspect as a predictor of the effectiveness of rehabilitation measures at any stage of the disease. Prevention of dysphonia, including behavioral dysphonia, is a strategic task to reduce the frequency and severity of swallowing disorders in PD patients.

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