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CHANGES IN THE PARAMETERS OF THE FUNCTIONAL ABILITY OF THE UPPER EXTREMITY AFTER A OF THE DISTAL METAPYPHYSIS RADIUS FRACTURE IN ELDERLY WOMEN WITH MANIFESTATIONS OF DEMENTIA UNDER THE INFLUENCE OF A PHYSICAL THERAPY PROGRAM

ЗМІНИ ПАРАМЕТРІВ ФУНКЦІОНАЛЬНОЇ ЗДАТНОСТІ ВЕРХНЬОЇ КІНЦІВКИ ПІСЛЯ ПЕРЕЛОМУ ДИСТАЛЬНОГО МЕТАЕПІФІЗУ ПРОМЕНЕВОЇ КІСТКИ У ЖІНОК ПОХИЛОГО ВІКУ З ПРОЯВАМИ ДЕМЕНЦІЇ ПІД ВПЛИВОМ ПРОГРАМИ ФІЗИЧНОЇ ТЕРАПІЇ

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Introduction. Fractures of the distal metaepiphysis of the radius (FDMR) occupy one of the leading places in the structure of bone fractures of the upper limb. At the same time, there is a steady trend of increasing the number of cases of these injuries among patients over 50 years old, especially women [3, p. 32; 4, p. 107–115].

An important factor in the risk of fractures should be considered an increase in the number of falls in elderly and senile people, which occur in household conditions from the height of their own height (low-energy injuries). In such patients, the largest number of unsatisfactory results of treatment of FDMR fractures are registered, which are associated with the development of post-traumatic osteoarthritis, complex regional pain syndrome, carpal instability, etc. [1, p. 23–31]. These factors inevitably lead to a decrease in the quality of life of the elderly and their dissatisfaction with the quality of medical care and, in particular, rehabilitation.

The wide prevalence of FDMR in the elderly population, complicated by geriatric syndromes – cognitive deficit, risk of falling, etc., justifies the relevance of the problem of rehabilitation of these persons, created from the standpoint of traumatology and geriatrics [3, p. 32].

The purpose of the study is to evaluate the effectiveness of the developed physical therapy program on the parameters of the structural and functional characteristics of the distal parts of the upper limb in elderly women with dementia as a result of an osteoporotic fracture of the FDMR in the post-immobilization period.

Materials and methods. During the research, 61 elderly women (70.4±0.8 years old) were examined. The control group consisted of 23 women without FDMR and dementia. The comparison group (CG) consisted of women with an osteoporotic FDMR, but without signs of dementia according to the Mini-mental State Examination (MMSE), who received rehabilitation according to the Unified Clinical Protocol of primary, secondary (specialized) and tertiary highly specialized) medical care for a fracture of the distal radial metaepiphysis bones [2, p. 178–197]. The main group (MG) consisted of women with an osteoporotic FDMR, with signs of dementia according to the MMSE, who received rehabilitation according to the principles of the Clinical Protocol, taking into account the features of the clinical course of dementia and geriatric status.

The developed rehabilitation program lasted 2 months. The rehabilitation intervention was carried out in three directions – restoration of post-immobilization changes of the injured limb, improvement of balance and reduction of the risk of falling (because the result was a fracture), improvement, if possible, of women's cognitive state, increase of their perceived independence and reduction of dependence on caregivers.

The program used therapeutic exercises and functional training for the wrist and fingers, forearm, shoulder, all joints of the upper limb, in particular with the use of elastic expanders with different elasticity "Thera-Band", mechanotherapeutic table "MAPS THERAPY"; PNF therapy (Proprioceptive Neuromuscular Facilitation); mobilization of the carpal joint and massage of the upper limb; kinesiological taping; treatment of position with the help of individual orthoses made of low-temperature plastic. The rehabilitation block, aimed at correcting the risk of falling, included daily therapeutic exercises for the body and legs, gait, balance, and coordination training.

The functional ability of the forearm was determined by the Patient-Rated Wrist Evaluation (PRWE) questionnaire.

Research results. The results of the PRWE forearm function questionnaire, which characterizes the consequences of fractures of the bones of the forearm, showed a low level of its ability – out of the maximum possible 50 points for each subscale, patients scored only half for the assessment of conditions related to pain and functional impairment (Table 1).

Table 1

Dynamics of PRWE parameters in FDMR in the post-immobilization period

Score	CG		MG	
	before rehabilitation	before rehabilitation	before rehabilitation	before rehabilitation
Pain	30,11±0,74	39,48±0,81●	31,85±0,63	44,15±0,86●°
Function	25,77±0,80	37,15±0,83●	23,10±0,70	38,21±0,72●
Total	55,88±83	76,60±0,78●	54,95±0,92	82,36±1,32●°

Notes: ● – statistically significant difference relative to the corresponding indicator before rehabilitation ($p<0.05$); ° – a statistically significant difference relative to the corresponding CG indicator ($p<0.05$).

When re-examining according to the PRWE questionnaire, the result of the "Pain" subscale in the CG improved by 31.1%, the "Function" subscale – by 44.4%, the total score – by 37.1% (in the MG, respectively, by 36.8%, 65 .4%, 49.9%) (Table 1). When evaluating the "Function" subscale, difficulties were noted that arose when women characterized the performance of movements of everyday activity. Therefore, for their assessment, simulated movements were used.

Conclusions. In women with the consequences of an osteoporotic fracture of the distal metaepiphysis of the radial bone in the post-immobilization period, deterioration of the functional capacity of the forearm (according to PRWE) was found, which is a factor in the disruption of the normal functioning of the upper limb. The application of a physical therapy program for elderly women with dementia and the consequences of a low-energy fracture of the radius bone, created taking into account the presence of a cognitive defect, demonstrated its effectiveness according to a statistically significant improvement relative to the initial result of the parameters of the functioning of the forearm.

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