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The Effect of a Frailty Management Program on the Rehabilitation of Elderly Patients after Surgical Treatment.

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ABSTRACT

The article performs the results of rehabilitation programs realized among senile patients after videolaparoscopic cholecystectomy, based on specific for geriatrics senile patients' status assessment methods with determination of frailty and geriatric syndromes extent. Special geriatric examination was conducted using the computer program "Optimization of care in geriatrics according to the extent of frailty".

Keywords: frailty, comprehensive geriatric assessment, medico-social rehabilitation.

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INTRODUCTION

Absolute number of patients suffering from surgical disorders is increasing as a consequence of the population's average life period growth. According to statistic researches approximately 25% of elderly and 30% of senile population are afflicted by cholelithiasis. Videolaparoscopic cholecystectomy is defined as the operation of choice in patients with cholelithiasis. Cholelithiasis among aged patients is complicated by acute destructive cholecystitis considerably more often than among young and middle-aged patients and it is characterized by high frequency of complications and lethality. Cardiovascular collapse (30-35%), hepatic-renal failure (23-25%), thromboembolism (14-16%) are the main reasons of lethal outcome in this category of patients [1, 2].

The postoperative period in senile patients has its own peculiarities, aimed on prevention of postoperative complications development and decrease of lethality. Growth of polymorbidity index among patients of elder age groups stimulates cumulative forming of geriatric syndromes with frailty formation. Therefore rehabilitation measures among patients of elder age groups must be aimed not only on recovery of functions of the body disordered as a result of a surgical disease and operation but also on extension of life period and improvement of life quality [3- 5].

Use of specific geriatric methods of senile patients' status assessment with determination of frailty extent in development of rehabilitation programs can improve medico-social results of surgical treatment and individualize medico-social rehabilitation programs [6-9].

METHODOLOGY

Contingent of senile patients with cholelithiasis subjected to the procedure of videolaparoscopic cholecystectomy in surgical departments of multifield hospitals of the town of Belgorod appeared as the material of the research. Two groups of patients were formed: the study group included 36 patients, the control group – 35 patients. Patients selection criteria: age of patients from 75 to 89 years old; cholelithiasis as the main disease in occasion of which the patients were operated; frailty confirmed by the results of special geriatric examination. Exclusion criteria: pronounced cognitive deficit, grave condition, absence of frailty confirmed by the results of special geriatric exam or presence of terminal stage of frailty. Exclusion of patients with pronounced cognitive deficit is defined by the fact that patients of this group are not capable to follow doctors' recommendations. All the patients passed specialized geriatric exam using the original computer program "Optimization of care in geriatrics according to the extent of frailty" on the basis of special geriatric exam conducted [3, 7] at decree terms: 1-2 days before discharge from the hospital, every 3 months after discharge from the hospital. Patients of the control group passed standard rehabilitation in ambulatory-clinical conditions. Methods of medico-social rehabilitation, oriented on leveling of geriatric syndromes and lowering frailty extent were prescribed to patients of the study group on the basis of special geriatric examination.

Methods of rehabilitation were used in the early postoperative period. In order to prevent falling syndrome and taking into account the fact that 61,9% of senile patients suffer from movement and walk disorders in the early postoperative period patients are taught to walk according to correct pattern using compensating devices (walkers). Nutritive support is prescribed along with diet therapy characterized by very low plastic and energetic value since 77,6% of senile patients are under risk of malnutrition syndrome development. Rational psychotherapy with small groups (2-3 patients) was implemented as a method of psychotherapy. Psychotherapy was oriented on the invalid's adaptation to changes of life conditions as a consequence of surgical treatment and recovery of the patient's physical, social and psychological resources. All patients were taught self-service in order to raise motivation to rehabilitation measures.

In order to decide the question of further tactics of medico-social rehabilitation special geriatric examination determining frailty extent was conducted on ambulatory-clinical stage before discharge from the hospital (1-2 days). Patients with good state of health or pre-frailty upon the results of special geriatric exam were referred to ambulatory-clinic conditions to continue rehabilitation with use of standard non-medicinal and medicinal methods and means of medico-social rehabilitation. Patients on terminal stage of frailty were provided with special home care for the purpose of basic functions support.

The main reasons defining severity (minor, medium, heavy) of frailty were determined, non-medicinal and medicinal methods and means of rehabilitation, aimed on correction of main geriatric syndromes in home conditions involving team practice were used. The team included: district doctor, surgeon, dietitian, rehabilitologist, nurse, doctor in exercise therapy, social worker, clinical psychologist. The major non-medicinal methods and means of rehabilitation,

administered on ambulatory-clinical stage of rehabilitation: use of compensating devices, self-service training, use of exercise therapy, labor therapy, rational psychotherapy, diet correction, creation of therapeutic conditions for the patient.

Correction of treatment and efficiency control were carried out by the district doctor once per 3 months on the basis of special geriatric exam. Frequency of examinations conducted by other members of the team is determined by the necessity of their advisory support.

MAIN PART

Demographic and medical characteristics of patients of both groups are performed in Table 1.

Table 1: Demographic and medical characteristics of both groups

	Control group (n=35) N (%)	Study group (n=36) N (%)
Age	80,6 \pm 4,4 лет	82,3 \pm 3,2 лет
Female	23 (68,6)	25 (69,4)
Male	12 (31,4)	11 (30,6)
Diseases		
Coronary heart disease	25 (71,4)	27 (75,0)
Hypertension	17 (48,6)	17(47,2)
Chronic obstructive pulmonary disease	10 (28,6)	12 (33,3)
Discirculative encephalopathy	9 (25,7)	10 (27,8)

As we can see in Table 1 groups of patients are comparable by average age, gender, prevalence of concomitant pathology.

Results of medico-social rehabilitation measures with patients of the study and control groups are represented in Table 2. Stability parameters showed considerable improve, the risk of malnutrition syndrome development decreased, moral status improved among patients of the control group six months after the surgery. All indicators of geriatric status improved among patients of the study group.

Six months after the surgery patients of the study group in comparison with the patients of the control group showed better results in such indicators of geriatric status as parameters of stability, walking, malnutrition syndrome, cognitive sphere, psychic status of patients. Received medico-social rehabilitation measures had positive impact on independence of patients from outside help in everyday life.

Table 2: Score results of both groups

Parameters	Control group (n=35)		Study group (n=36)	
	after the surgery	6 months after the surgery	after the surgery	6 months after the surgery
Stability parameters	11,39 \pm 0,5	13,13 \pm 0,6*	11,26 \pm 0,5	16,04 \pm 0,6*.#
Walking parameters	9,12 \pm 0,5	9,25 \pm 0,5	9,01 \pm 0,5	12,62 \pm 0,6*.#
Malnutrition syndrome	10,79 \pm 0,4	12,63 \pm 0,4*	11,11 \pm 0,4	14,80 \pm 0,5*.#
Cognitive disorders	24,64 \pm 0,7	26,65 \pm 0,8	24,69 \pm 0,7	29,02 \pm 0,8*.#
Moral status	55,01 \pm 0,8	48,39 \pm 0,8*	55,13 \pm 0,8	47,44 \pm 0,8*.#
Independence in everyday life	54,09 \pm 0,8	65,79 \pm 0,8*	54,12 \pm 0,8	72,92 \pm 0,8*.#

*p<0,05 intragroup, #p<0,05 intergroup

Comparison of life quality of patients of the main and control groups six months after the surgery revealed that parameters of physical and psychological components of life quality authentically improved among patients of both groups. However, patients of the main group showed higher indicators of physical and psychological components of life quality except the index of social functioning (Table 3).

Table 3: Senile patients’ life quality after videolaparoscopic cholecystectomy in the early and later postoperative period

Scales SF-36	Control group (n=35)		Study group (n=36)	
	after the surgery	6 months after the surgery	after the surgery	6 months after the surgery
General health (GH)	33,7±2,1	34,9±1,9	33,1±1,8	40,6±1,4*,#
Physical functioning (PF)	3,4±1,4	26,3±1,9	22,4±1,1	32,9±1,7*,#
Role functioning, associated with physical status (RP)	3,9±0,7	3,9±1,6*	3,4±0,6	41,2±1,1*,#
Role functioning, associated with emotional status (RE)	11,3±1,7	46,2±1,9*	10,7±1,1	57,3±1,2*,#
Social functioning (SF)	46,4±1,4	47,4±1,5	46,2±1,5	47,1±1,3
Pain (BP)	26,3±1,6	45,7±1,3*	26,7±1,4	50,9±1,5*,#
Vital activity (VT)	26,7±1,7	37,6±1,6*	25,3±0,8	55,4±1,5*,#
Mental health (MH)	35,8±1,4	47,4±1,9*	35,6±1,7	67,6±1,6*,#

*p<0,05 intragroup, #p<0,05 intergroup

CONCLUSION

Results of treatment of aged patients with surgical diseases have noticeably improved lately. However despite the improvement of diagnostics taking in account age characteristics of the body, development and implementation of new methods of surgical treatment and anesthetization, the percentage of complications in the early and later postoperative period and lethality among aged and senile patients remains high [1-3]. First of all this concerns patients with serious concomitant diseases. Involutive changes, occurring in the ageing body have a negative affect on the manifestations of the surgical disease, cause difficulties in diagnosis, make specific demands to the choice of anesthetization methods, surgical treatment and postoperative following up [1-4]. Rehabilitation of patients of older age groups after videolaparoscopic cholecystectomy must include not only therapy, oriented on recuperation of body functions, injured in consequence of the surgical disease and operation. Use of special geriatric status assessment methods recommended by International Association of Gerontology and Geriatrics (IAGG) along with traditional approach is necessary in designing rehabilitation measures for the purpose of socialization, resocialization and integration of patients into society. Thus the proposed individual programme of aged patients’ medico-social rehabilitation after surgical treatment takes into account not only the surgical disease’s clinical manifestations followed by concomitant multiple pathologies, but the patient’s functional and mental status in relation with frailty syndrome [4-7].

Implementation of such rehabilitation programmes improves patients’ life quality, what includes assessment of their physical, mental and social well-being conducted by themselves [7-10].

Medical, psychological and social maintenance realized in this system appears to be the most important aspect of complex rehabilitation, aimed to bring the patient back to productive activity, keep him/her for the society and family. Herewith we can talk of the principle of holistic approach to a human, his/her treatment and rehabilitation. In other words when elaborating individual programme of aged patients’ rehabilitation it is necessary to use holistic approach, which takes account of physical, mental and social factors affecting the patient in a greater degree.

FINDINGS

1. When prescribing rehabilitation to senile patients after videolaparoscopic operations it is advisable to administer age-oriented approach which consists in application of non-medicinal methods: use of compensating devices, exercise therapy, labor therapy, rational psychotherapy, diet correction, self-service training.

2. The developed method of medico-social rehabilitation of senile patients after surgical treatment allows to level geriatric syndromes which redouble after surgical treatment, to raise the level of physical workability, independence from outside help in everyday life and a senile person’s life quality, what leads to the delay of frailty syndrome phenomenon progression

Our research is characterized by a number of restrictions. Implementation of the performed medico-social rehabilitation programme of senile patients requires to raise social and medical workers’ awareness of gerontology and geriatrics, since the quality of specialized care of senile patients with frailty is determined by the level of skills of all the specialists involved in rehabilitation [11]. Therefore development of evidence-based rehabilitation system of older age group patients, which aims to prevent progression and development of frailty syndrome complications actualizes the issue of

studying frailty syndrome with surgical profile older age group patients and requires to conduct more researches in this direction.

We offer to accept the present model of medico-social rehabilitation as a standard for senile patients after videolaparoscopic cholecystectomy.

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