



Research Article

HEALTH RELATED QUALITY OF LIFE ASSESSMENT IN PATIENTS WITH DHS SURGICALLY TREATED PERTROCHANTERIC KYLE FRACTURE TYPE I, II

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ABSTRACT

Treatment of hip fractures is a major challenge to the health care system and society. Proper treatment of hip fractures in the elderly is still controversial.

Objectives: To assess health-related quality of life and to demonstrate any difference following a rehabilitation treatment with kinesitherapy, magnetic therapy, and interferential currents.

Material and methods: A quantitative analytical study of 28 patients, all females older than 65. Subjects were divided into two cohorts: 14 patients were treated with kinesitherapy and magnetic therapy, and 14 patients were treated with kinesitherapy and interferential currents. Standardized questionnaires, Score and Rand SF-36 with a total of 36 questions grouped into eight sections, were used for the health-related quality of life assessment.

Results: In terms of 'physical functioning', the average score indicated a very poor physical functioning. The average score for 'role limitations due to physical health' indicated major role limitations due to physical health. The average score for 'role limitations due to emotional health' indicated major role limitations due to emotional health. In terms of the 'energy / fatigue' parameter results indicated that patients felt a lack of energy which translated as a feeling of fatigue. The average score in 'emotional wellbeing' indicated that patients faced lack of emotional wellbeing. The 'social functioning' parameter suggested that patients faced problems in their social functioning. The average score in terms of 'pain' indicated the existence of pain. And in terms of 'general health', the patients considered themselves to be in poor health.

Conclusion: The results, although preliminary, indicate the importance of physical therapy in the postoperative period and its impact on the health-related quality of life, as well as the opportunity for a more efficient manner of restoring patient's condition as it was prior to the fracture.

KEY WORDS: kinesitherapy, magnetic therapy, interferential currents, questionnaire, rehabilitation



INTRODUCTION

The global ageing of the population increases the risk of fractures. Osteoporosis is one of the major causes, with compression fractures being most prevalent, followed by femoral and wrist fractures. The fractures of the proximal femur have become more common and along with femoral neck fractures represent the most common types of femoral fractures.(1)

In the elderly the consequences of a hip fracture can be a cause of a major decline in the level of functioning, including the transition from living in one's own home to nursing home living. A cohort of 2086 community-living elderly subjects were observed during a 6-year period; 120 subjects suffered a hip fracture, and a subsequent decline in function at 6 months after the fracture was noted in the 83 who survived and were available for a follow-up interview. The ability to dress independently decreased from 86% of subjects before the fracture to only 49% at 6 months following the fracture. Older patients can have less satisfactory results from surgically treating hip fractures compared to younger patients, although data vary in different studies.(2) The goal after a hip fracture is to avoid a prolonged period of immobility. Since older patients typically have difficulty walking and limited weight-bearing abilities, the choices in surgical approach, fixation, and implants should aim for enabling weight-bearing tolerance as soon as possible. Intensive geriatric inpatient rehabilitation can positively affect the ability of a patient with a hip fracture to live independently, despite a certain degree of dementia being present.(3)

In the study by Huusko et al. in 2000, patients with hip fracture and dementia were assessed at three months and one year postoperatively. As measured by the ability to live independently at one year after the hip fracture, the need for institutionalization was significantly lower in patients with moderate dementia who had received intense inpatient geriatric rehabilitation compared to the control subjects.(4)

The worldwide increase in hip fractures is a major challenge to the health care system and society. The proper treatment of femoral neck fractures in the elderly is still controversial, and even more so from an international perspective. Optimizing and standardizing the treatment to improve outcomes and reduce the need of secondary surgery is mandatory for humanitarian and economic reasons. The importance of incorporating the patient's perspective of the outcome in clinical trials has been acknowledged and there are now numerous instruments for assessing the health-related quality of life.(5)

OBJECTIVES

- i. Assess the health-related quality of life in patients with a pertrochanteric Kyle fracture type I, II treated with a DHS fixation of the fragments
- ii. To point to any differences in the health-related quality of life of patients with pertrochanteric Kyle fracture type I, II following rehabilitation

treatment with kinesitherapy and magnetic therapy, i.e. interferential currents.

MATERIAL AND METHODS

This research is a quantitative analytical study of a total of 28 patients with a pertrochanteric Kyle fracture type I, II surgically treated with DHS; all subjects were females older than 65. Subjects were divided in two cohorts depending on treatment type: one cohort consisted of 14 patients treated with kinesitherapy and magnetic therapy, and the second cohort consisted of 14 patients treated with kinesitherapy and interferential currents.

In order to determine the health-related quality of life a standardized Score and Rand SF-36 questionnaire was used with a total of 36 questions grouped according to 8 parameters: physical functioning, role limitations due to physical health, role limitations due to emotional health, energy/fatigue, emotional wellbeing, social functioning, pain, and general health.

The scoring was performed according to a prescribed coding on a scale from zero to one hundred with 100 being the highest level of functional capabilities. Each subject participated in the survey voluntarily after verbally agreeing to do so. All the participants were informed in detail about the reasons for the survey, as well as about the confidentiality and anonymity procedures regarding their statements, comments, and the obtained results.

STATISTICAL PROCESSING

The statistical processing was performed using Statistica for Windows 7.0 and SPSS 17.0. Numerical (quantitative) series were analyzed using measures of central tendency (mean and median), as well as measures of dispersion (standard deviation). In order to test the significance of the difference between the two independent cohorts, depending on the data distribution, a parametric Student's t- and nonparametric Mann Whitney U tests were used. A significance level of $p < 0.05$ was used to determine the statistical significance.

RESULTS

The score analysis of the eight analyzed parameters in both cohorts receiving a different rehabilitation treatment is presented in Table 1 below.

Regarding the 'physical functioning' parameter, the average score for cohort 1 and cohort 2 was 14.29 ± 11.07 vs. 19.30 ± 26.61 , respectively. As a result, fifty percent of the cohort 1 and cohort 2 subjects had an average score on this parameter greater than 10% and 12.5%, respectively, indicating a very poor physical functioning (Table 1).

The average score of cohort 1 and cohort 2 subjects regarding the 'role limitations due to physical health' was 26.79 ± 38.56 vs. 19.64 ± 32.78 , respectively. Only 50% of the subjects from cohort 1 and cohort 2 had an average score on this parameter greater than 0 indicating major role limitations due to physical health (Table 1).

The average score of the subjects in both cohorts in regard to the 'role limitations due to emotional health' parameter was 30.95±42.29 vs. 23.81±37.96. In both cohorts, only

50% of the subjects had an average score on this parameter greater than 0, indicating major 'role limitations due to emotional health' (Table 1).

Table 1. Cohort comparison on the basis of the average score for the eight parameters

Parameters	Number	Means	Standard Deviation	Median	p
Physical functioning					
Cohort 1	14	14.29	11.07	10.00	Mann-Whitney U Test Z=-0.2987; p=0.7652
Cohort 2	14	19.30	26.61	12.50	
Role limitations due to physical health					
Cohort 1	14	26.79	38.56	0.00	Mann-Whitney U Test Z=-0.2732; p=0.7846
Cohort 2	14	19.64	32.78	0.00	
Role limitations due to emotional health					
Cohort 1	14	30.95	42.29	0.00	Mann-Whitney U Test Z=-0.3906; p=0.0696
Cohort 2	14	23.81	37.96	0.00	
Energy/fatigue					
Cohort 1	14	48.57	23.49	50.00	t-test =-0.4481 df=26; p=0.6578
Cohort 2	14	45.12	16.72	45.00	
Emotional wellbeing					
Cohort 1	14	58.57	18.99	54.00	t-test =-0.7307 df=26; p=0.4715
Cohort 2	14	53.71	16.06	52.00	
Social functioning					
Cohort 1	14	43.75	25.36	43.75	t-test =1.8176 df=26; p=0.0807
Cohort 2	14	61.61	26.61	68.75	
Pain					
Cohort 1	14	43.75	16.86	45.00	t-test =-0.7978 df=26; p=0.4322
Cohort 2	14	37.14	25.99	38.75	
General health					
Cohort 1	14	52.86	19.19	55.00	t-test =0.0559 df=26; p=0.9558
Cohort 2	14	53.21	14.23	55.00	

*p<0.05 significance

With respect to the 'energy/fatigue' parameter, the average score in the subjects was 48.57±23.49 vs. 45.12±16.72 for cohort 1 and cohort 2, respectively. Consequently, fifty percent of the subjects in cohorts 1 and 2 had an average score for this parameter greater than 50% and 40%, respectively, indicating that the patients felt a lack of energy, i.e. fatigue (Table 1).

The average score of subjects in cohort 1 and cohort 2 regarding the 'emotional wellbeing' parameter was 58.57±18.99 vs. 53.71±16.06, respectively. Consequently, 50% of subjects from cohorts 1 and 2 had an average score for this parameter greater than 54% and 52%, respectively, indicating that the patients faced a lack of emotional wellbeing (Table 1).

With respect to the 'social functioning' parameter, the average score of the subjects in cohorts 1 and 2 was 43.75±25.36 vs. 61.61±26.61, respectively. Consequently, 50% of the subjects presented an average score for this parameter greater than 43.75% and 68.75%, respectively, indicating that the patients had certain problems in their social functioning (Table 1).

The average score of the subjects from both cohorts regarding the 'pain' parameter was 43.75±16.86 vs. 37.14±25.99. Consequently, the average score for this parameter in both cohorts was greater than 45% and 38.75%, respectively, indicating the presence of pain (Table 1).

Subjects had an average score of 52.86±19.19 vs. 52.21±14.23 regarding the 'general health' parameter. Fifty percent of the subjects had an average score for this parameter greater than 55%, indicating that patients considered themselves to be in poor health.



With a $p>0.05$ there is no significant difference between the two cohorts regarding the average score for the 'physical functioning', 'role limitations due to physical health', 'role limitations due to emotional health', 'energy/fatigue', 'emotional wellbeing', 'social functioning', 'pain', and 'general health' (Table 1).

DISCUSSION

Hip fractures represent one of the most important causes of morbidity in the elderly. These types of fractures have a substantial impact on the health, psychological, social, and economical status of the patients. Even though patient care and surgical techniques have improved in recent years compared to the past, treatment of patients with hip fractures may result in worse than what is expected. The treatment outcome is assessed on whether the patient has recovered enough to perform their daily activities as they did before the fracture or not. Studies have shown that the functional improvement is completed six months post-surgery. A study conducted by Vatansever et al. included 40 patients who were observed in a period of 6 months, divided in two cohorts: first cohort were patients with femoral neck fractures and the second cohort consisted of patients with intertrochanteric femoral fractures. In order to assess the health-related quality of life they required the patients to complete an SF-36 questionnaire based on the results from which it was concluded that the patients' physical and mental health had deteriorated 6 months following the fracture when compared to preoperative values. On the basis of this study it was concluded that there was a significant decline in the overall scores for each patient compared to the preoperative values.(6)

In a study carried out with female patients who sustained hip fractures, Kirke et al. demonstrated that hip fractures had a significant negative impact, particularly on the range of movement and daily activities of the patients.(7)

In another study conducted in 2000, Randell examined health-related quality of life (HRQoL) following hip fracture in elderly subjects, aged 82-86 years in two cohorts: 32 patients with hip fractures and 29 control subjects. The subjects completed two different questionnaires: SF-36 and a revised Osteoporosis Assessment Questionnaire (OPAQ2), on two separate occasions within one week of fracture and 12-15 weeks following fracture. SF-36 scores were significantly correlated with OPAQ2 in comparable domains of physical functioning, general health, and mental health. At 3 months following the fracture there was a significant reduction in HRQoL in SF-36 domains such as physical functioning, vitality, and social functioning; and in the OPAQ2 domains of physical functioning, social activity, and general health. It can be concluded that there was a significant deterioration in HRQoL after hip fracture in all domains. HRQoL should be a part of a comprehensive assessment of the costs of osteoporosis, including fracture-associated morbidity.(8)

Hip fractures are considered to be one of the most serious consequences of osteoporosis, and their incidence is used as an international index of the osteoporosis frequency. Most hip fractures occur after minor falls, and impose a considerable burden to the health care system due to their association with increased morbidity and mortality.(9) The proportion of elderly people experiencing immobility or

functional dependency to accomplish daily life activities rises over a period of one to two years after the hip fracture. Recently, the interest in investigating the effects of hip fractures and their treatment on the health-related quality of life as perceived by the elderly patient has grown.

In a study by da Silva Mendonça conducted in 2005, 80 patients were hospitalized, 12 of them died and 23 were excluded due to exhibiting cognitive dysfunction. Forty five patients remained as the final sample, 24 of them had femoral neck fractures and 21 had pertrochanteric fractures. There were more female than male subjects with a mean age of 75 years. Their health-related quality of life was assessed using an SF-36 questionnaire 4 months following discharge and rehabilitation. Compared to baseline, all patients scored lower in physical functioning, role limitations due to physical health, bodily pain, and vitality categories 4 months following the fracture. The HRQoL did not differ significantly between patients with femoral neck fractures and those with pertrochanteric fractures.(9)

In 2003 Tidermark conducted a study on elderly patients with hip fractures; the first cohort was treated by internal fixation and the second by total hip replacement. The HRQoL was assessed using SF-36 and EQ-5D in a two-year period, the results of which indicated that there were more postoperative complications in the internal fixation cohort compared to the total hip replacement cohort. The reduction in HRQoL was also significantly lower in all domains in the subjects from the first cohort.(5)

In our paper the results from the SF-36 questionnaire regarding HRQoL point to a decline in the physical, emotional, and social functions; therefore, in the final results there was no significant difference between the two cohorts regarding HRQoL that corresponds to the abovementioned and international studies.

CONCLUSION

These are merely the preliminary results of this paper and they have not demonstrated significant differences between the two cohorts. Nonetheless, these results, although preliminary, point to the importance of physical therapy in the postoperative period and its impact on the HRQoL, indicating this type of therapy as a more efficient manner of restoring patient's condition as it was prior to the fracture.

REFERENCES

- [1] Cummings SR et al.: Risk factors for hip fracture in white women. Study of osteoporotic fractures research group, *N. Engl. J. Med.*, 1995 Mar. 23; 332(12):767-73
- [2] Marottoli RC, Berkman LF, Cooney LM: Decline in physical function following hip fracture, *J. Am. Geriatric Soc.*, 1992; 40:861-866

- [3] Braddom L. Randall et al.: Physical Medicine and Rehabilitation, 2011, Chapter 60:1425-1426
- [4] Huusko TM, Karpilä P et al.: Randomized, clinically controlled trial of intensive geriatric rehabilitation in patients with hip fracture: subgroup analysis of patients with dementia, Br. Med. J., 2000; 321:1107- 1111
- [5] Tidermark J.: Quality of life and femoral neck fractures, Acta Orthop Scand Suppl, 2003 Apr.; 74(309):1-42
- [6] Vatansseven A, Ozic U et al.: Assessment of quality of life of patients after hemiarthroplasty for proximal femoral fractures. Acta orthopædica et traumatologica Turcica, 2005;39(3):237- 242
- [7] Kirke PN, Sutton M, Burke H, Daly L: Outcome of hip fracture in older Irish women: a 2-year follow-up of subjects in a case-control study. Injury 2002; 33:387-91.
- [8] Randell AG, Nguyen et al.: Determination in quality of life following hip fracture: a prospective study. Osteoporosis Int, 2000; 11:460-466
- [9] Tania M da Silva Mendonça, Carlos HM da Silva et al.: Evaluation of the Health-Related Quality of Life in Elderly Patients According to the Type of Hip Fracture: Femoral Neck or Trochanteric, Clinics. 2008 Oct.; 63(5):607–618.

