

QUALITY OF LIFE IN THE PATIENTS WITH HIP OSTEOARTHRITIS AND OTHER CHRONIC CONDITIONS

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Keywords: hip osteoarthritis, comorbidities, quality of life

Abstract: Hip osteoarthritis, a degenerative disorder of the joint, is a condition with a long-term evolution. Affected individuals, often older, are suffering from several chronic diseases. This study aimed at establishing the quality of life in the patients with hip osteoarthritis, who also had other chronic disorders and at establishing the prevalence of associated diseases. 144 patients hospitalized for hip osteoarthritis were included in the study. Demographic, clinical data and information on comorbidities were collected. 95.83% of the patients had at least one associated disease and almost 78% had two or more comorbidities. The most common categories were represented by cardiovascular disorders, other musculoskeletal diseases and osteoporosis. The morbidity count and the severity index of the diseases were statistically significantly correlated with the quality of life investigated with HAQ index. Comorbidities, pain and restrictions of occupational activities lead to the impairment of the quality of life.

Cuvinte cheie: coxartroză, comorbidități, calitatea vieții

Rezumat: Coxartroza, o afecțiune articulară degenerativă, are o evoluție pe termen lung. Persoanele afectate sunt de multe ori mai în vârstă și suferă de un cumul de boli cronice. Studiul a avut drept scop stabilirea calității vieții la pacienții cu coxartroză, care au avut și alte boli cronice și de a stabili prevalența bolilor asociate. 144 pacienți spitalizați pentru coxartroză au fost incluși în studiu. Au fost colectate datele demografice, clinice și informații privind comorbidități. 95.83% dintre pacienți au avut cel puțin o boală asociată și aproape 78% au avut două sau mai multe comorbidități. Cele mai frecvente categorii au fost reprezentate de bolile cardiovasculare, urmate de boli musculo-scheletale și osteoporoză. Numărul morbidităților și indicele de severitate al bolilor au fost corelate semnificativ statistic cu calitatea vieții investigată cu indicele HAQ. Comorbiditățile, durerea și restricția de activități profesionale duc la afectarea calității vieții.

INTRODUCTION

Osteoarthritis, the most common chronic joint disease, is a degenerative disorder of the joint characterized by degradation of articular cartilage, remodelling of the subchondral bone accompanied by changes in synovium, synovial fluid and periarticular structures, the current concepts regarding it as a disorder of the entire joint. It is a complex, multifactorial disorder, caused by multiple factors, both genetic and environmental. Osteoarthritis, especially hip osteoarthritis, has a strong familial aggregation, the genetic influence being estimated at 60% in radiographic osteoarthritis of hip in women (1), but the genetic contribution is complex, as it also influences some other risk factors. Genetic studies of the affected individuals will point out the events and mechanisms responsible for the molecular damage of the joint, for nociception and chronic pain.(2,3) The other frequent risk factors are age, overweight, injuries, chronic overuse, but also congenital anomalies, osteonecrosis, metabolic disorders.(4)

Hip osteoarthritis is a condition with a long-term evolution, symptoms evolving throughout many years, in the elderly individuals becoming increasingly common and with increasingly higher disabling potential. Its prevalence is expected to increase in our country as well as in other European countries, due to population aging.(5) Affected individuals become functionally limited and disabled and encounter difficulties in performing the activities of daily living (ADL).

Often, older individuals suffer from several chronic diseases. Previous studies reported the coexistence of osteoarthritis with many categories of comorbidities, of which cardiac diseases or diabetes were frequently encountered.(6,7) Some of these associated diseases modify pain score (e.g. osteoarthritis affecting other joints), others increase disability (e.g. cardiovascular disorders) and others affect both (e.g. osteoporosis, diabetes).

PURPOSE

The objective of this study was to establish the quality of life in the patients with hip osteoarthritis who also had other chronic disorders and to establish the prevalence of comorbidity in our patients.

METHODS

Between January 2010 and January 2011, we evaluated 144 patients, all Caucasians, with hip osteoarthritis treated in the Emergency Hospital "Avram Iancu" from the city of Oradea, Romania, who met the inclusion criteria. These were: diagnosis of hip osteoarthritis according to ACR criteria (8) and radiological criteria, age over 18 years old, with no previous rehabilitation treatment for hip osteoarthritis, possibility of evaluating the patient at least twice a year - one year, acceptance to perform a kinetic programme at home and to comply with the rules of self-management and life style changes.

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Article received on 09.08.2012 and accepted for publication on 04.11.2012
ACTA MEDICA TRANSILVANICA March 2013;2(1):279-282

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Exclusion criteria: existence of a joint arthroplasty, acute flare of associated disease, presence of disorders that contraindicate our rehabilitation centre procedures (cancer, depression, severe dementia, autoimmune diseases, heart failure NYHA class II to IV, severe kidney diseases, asthma that require oxygen continuously), patients who underwent rehabilitation treatment for other diseases, but had associated hip osteoarthritis (e.g. neurological diseases).

The data was collected according to medical ethics principles. All patients gave the written informed consent for their inclusion in the study.

The demographic and clinical data included age, gender, height, weight, BMI, other affected joints. Mitchel and Cruess disease staging was used.(9) Hip radiographies were assessed using Kellgren-Lawrence grading system.(10) Information on comorbidities that accompany osteoarthritis was gathered from each patient using the Cumulative Illness Rating Scale (CIRS), which consisted of 14 domains related to the body systems, each system rated from 0 (no impairment) to 4 (extremely severe impairment).(11) Severity index was calculated as the sum of CIRS scores divided by morbidity count.

For the functional status assessment, we used Health Assessment Questionnaire (HAQ), consisting of 20 items grouped in 8 categories regarding activities of daily living. For each of these, the score ranged from 0 (no difficulty) to 3 (unable to do that item).(12)

The statistical processing of data was made with the SPSS (version 20.0). The significance threshold for comparisons was set at 5% ($p < 0.05$). For the analysis of correlations between linear parameters, the Pearson coefficient has been calculated.

RESULTS

Demographic variables:

The overall group was formed of 144 patients with a mean age of 62.61 ± 8.48 years old, ranging between 25 and 82 years old. Other demographic and clinical data of the patients are presented in figures no. 1-3.

Figure no. 1. Distribution of patients according to age

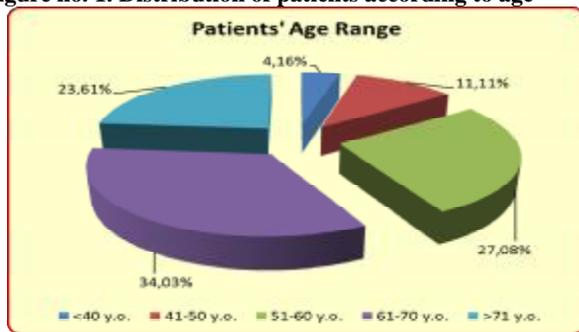
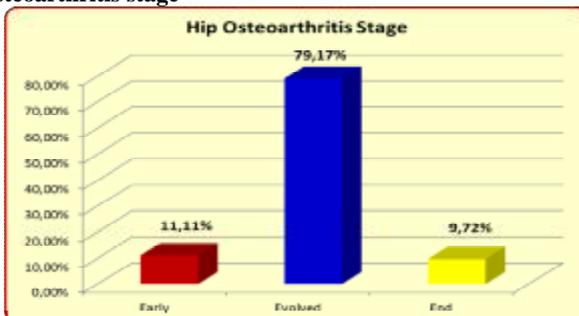


Figure no. 2. Distribution of patients according to hip osteoarthritis stage



Comorbid conditions:

95.83% of the patients had at least one associated disease ($CIRS \geq 1$). 84% of patients had at least one moderate or severe associated disease ($CIRS \geq 2$) (table no. 1, figure no. 4).

The most common category was represented by cardiac disorders (51.38%). Osteoporosis was confirmed in 33.3% of cases. Obesity was diagnosed in 27.77% of patients and diabetes mellitus in 13.1% (table no. 2). Other affected joints were found in 68.75% of all patients, of these 52.52% were women. The other joints most commonly affected were spinal column joints (66.66%) (of which spondylosis was found in 55.55% of all patients), followed by osteoarthritis with multiple locations (17.17%) and knee osteoarthritis (11.11%). 66.66% of women had other affected joints, comparable with 69.69% of men. In women, the joints most commonly affected were spinal column joints (41.02%), knee joint (12.82%), followed by more than 3 affected joints in 10.25%. Most frequently in males, spinal joints were affected (51.51%), followed by more than 3 joints affected (13.63%) and knee joint in 3.03% of them.

The association between specific coexisting disorders that occurred in more than 5% of the investigated patients and activity limitations assessed with HAQ, as well as correlations between morbidity count, severity index and HAQ are presented in table no. 3.

Table no. 1. Comorbidity data of the hip osteoarthritis batch. Values are presented as means, standard deviations, number of patients

Comorbidities	Overall group N=144	Women N=78	Men N=66
Mean morbidity count for $CIRS \geq 1$	2.34±0.86	2.22±0.87	2.50±0.86*
Mean morbidity count for $CIRS \geq 2$	1.83±0.74	1.88±0.73	1.79±0.76*
Severity index ($CIRS \geq 1$)	1.856±0.74	1.85±0.71	1.84±0.76*
Severity index ($CIRS \geq 2$)	2.30±0.50	2.26±0.48	2.33±0.51*

Figure no. 3. Number of comorbidities in hip osteoarthritis patients

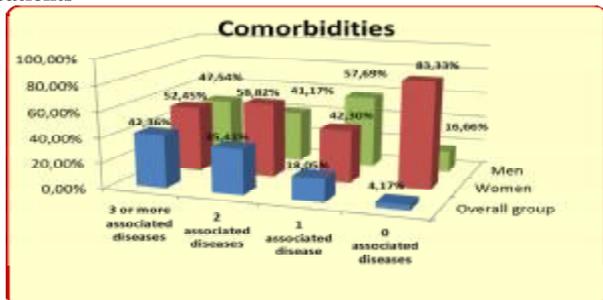


Table no. 2. Associated diseases in the hip osteoarthritis batch. Values are presented as number of patients and percentages

Comorbidities	Overall group N=144	Women N=78	Men N=66
3 or more associated diseases	61 (42.36%)	32	29
2 associated diseases	51 (35.41%)	52.45%	47.54%
1 associated disease	26 (18.05%)	30	21
0 associated diseases	6 (4.17%)	58.82%	41.17%
		11	15
		42.30%	57.69%
		5 (83.33%)	1
			16.66%

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1. Cardiac	74 (51.38%)	28	46
2. Vascular	12 (8.33%)	(37.83%)	(62.16%)
3. Hematological	0	5 (41.66%)	7
4. Respiratory	4 (2.77%)	0	(58.33%)
5. Ophthalmological and ENT	6 (4.16%)	4 (2.77%)	0
6. Upper gastrointestinal	2 (1.38%)	1 (16.66%)	5
7. Lower gastrointestinal	0	2 (100%)	(83.33%)
8. Hepatic and pancreatic	1 (0.69%)	0	0
9. Renal	1 (0.69%)	4 (57.14%)	1 (100%)
10. Urogenital	7 (4.86%)	52	1 (100%)
11. Musculoskeletal and tegumental†	99 (68.75%)	0	3
12. Neurological‡	0	(52.52%)	47
13. Endocrine, metabolic, breast	109	0	(42.85%)
14. Psychiatric	(75.69%)	70	39
	3 (2.08%)	(64.22%)	(35.77%)
		1 (33.33%)	2
			(66.66%)

* the difference between genders is not statistically significant. † all patients included in the study had hip osteoarthritis, here only those with other affected joints were included; ‡ patients with neurological diseases were not included in the study because they modify the assessment of the data and the rehabilitation procedures

Table no. 3. Relation between several comorbidities, morbidity count, severity index and HAQ index. Values are presented as means, standard deviations, correlation coefficient.

Coexisting disorders Correlation	HAQ	p
Musculoskeletal disorders*		0.05
Present-mean (SD)	1.78 (0.42)†	
Absent-mean (SD)	1.4 (0.69)	
Metabolic diseases		
Diabetes mellitus		0.3
Present-mean (SD)	1.46 (0.68)‡	
Absent-mean (SD)	1.56 (0.72)	
Obesity		0.4
Present-mean (SD)	1.42 (0.78)‡	
Absent-mean (SD)	1.47 (0.74)	
Osteoporosis		0.4
Present-mean (SD)	1.42 (0.97)‡	
Absent-mean (SD)	1.47 (0.68)	
Cardiovascular disorders		0.02
Present-mean (SD)	1.88 (0.33)†	
Absent-mean (SD)	1.33 (0.76)	
Morbidity count (CIRS≥1)	r=0.28†	0.0003
Morbidity count (CIRS≥2)	r=0.08‡	0.17
Severity index (CIRS≥1)	r=0.53†	≤0.0001

DISCUSSIONS

In the investigated group of patients, almost 96% of the cases had at least one comorbidity, compared to other studies that reported a percentage of 98.6% in 2008 (6) or 64% in 2010.(13) We believe that the percentage would have been higher in our study, but as mentioned above, because of the contraindications of the rehabilitation programme procedures, cases with certain comorbidities were not included in the study.

As in other studies, cardiovascular diseases were common, followed by endocrine, metabolic and musculoskeletal disorders.(6,7) About a quarter of our cases had obesity. Other studies report more than two thirds of men and women, overweight or obese (13), but also moderate evidence for a positive association between obesity and hip osteoarthritis.(14)

We noted that the presence of associated diseases differs between genders (92.30% in women vs. 98.48% in men), statistically not significant differences, concordant with other data.(13) Compared to other studies, we found significant gender differences for cardiac disorders, which were more frequently registered in men, and osteoporosis, which occurred more than 5.5 times as often in women than in men.(13,15)

We considered useful the assessment of the interrelation between functional capacity and associated diseases in these patients. Compared to other studies, we noted that for musculoskeletal and heart diseases, the quality of life was significantly worse than in the cases not presenting these conditions, while metabolic diseases did not significantly influence the activity limitation.(6,7)

Functional impact of comorbidities has led to the worsening of the functional status, already reduced by the degenerative hip disease. Analysing the role of comorbidity, previous studies revealed an association between higher morbidity count and the presence of moderate to severe heart diseases and worsening of limitations in activities.(16) We could not demonstrate a significant association between functional capacity (HAQ) and one moderate or severe associated disease (CIRS≥2), but it is strongly and very significantly correlated with the severity index.

Optimizing the management of the affected individuals, establishing the most efficient therapy for each case require knowledge of the course of activity limitations.(17)

CONCLUSIONS

1. The present study that used Health Assessment Questionnaire (HAQ) and Cumulative Illness Rating Scale (CIRS) for the clinical evaluation of the patients draws the attention on the impact of hip osteoarthritis and comorbidities on the functional capacity and on the quality of life, underlying the importance of early diagnosis and long-term medical rehabilitation
2. Almost all patients with hip osteoarthritis had at least one associated disease.
3. Comorbidities, pain and restrictions of occupational activities lead to the impairment of the quality of life.
4. Benefits of the rehabilitation therapy in hip osteoarthritis are shaded by the coexistence of associated diseases.

The study emphasises the need for an individualized medical rehabilitation therapeutic plan, adjusted to the characteristics and comorbidities of each patient.

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