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Original Research Article

Assessing the Functional Status in Osteoarthritis & Rheumatoid Arthritis Patients at Tertiary Care Hospital

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ABSTRACT

Aim & Objective: To assess the physical functional status in Osteoarthritis (OA) and Rheumatoid arthritis (RA) patients and to determine the prevalence, risk factors, co-morbidity and socio-demographic characteristics of the patients selected for analysis.
Materials & Methods: The study was designed as a Hospital based prospective observational study was carried out for a period of 6 months among inpatients and outpatients in the Orthopaedics department. A total of 217 Patients were selected in this study. All Patients diagnosed with other Rheumatic disease were excluded from the study. The socio-demographic factors, risk factors, co-morbidity were reported using specially prepared data entry form and physical functional status was obtained using MHAQ (modified health assessment questionnaire).
Results: A total of 217 cases, RA & OA was more prevalent in the age group of 36-65 years (36.86%,41.47%).Whereas, the gender distribution in both OA and RA were commonly seen in females((55.15%,63.46%),and the prevalence of OA (76.03%) is more than RA (23.96%).In OA majority of the Risk factor was found to be Old age (44.84%) and in RA it was found to be female gender (63.46%). Both in RA (60.0%) and OA (61.19) cases Co-morbidities like Hypertension was found to be high. Out of 165 OA patients (94.54%) had mild functional disability where as in RA out of 52 cases (75%) had moderate functional disability.
Conclusion: The present study shows that R.A had more affect on physical functional status of patients than OA patient.

Keywords: Osteoarthritis, Rheumatoid arthritis, Physical functional status, MHAQ.

INTRODUCTION

The term arthritis can also be known as "joint inflammation," but it is generally used to refer to a family of more than 100 different conditions. Arthritis actually affects the joints and also affects muscles and other underlying tissues. So, the main cause of disability is arthritis. Day to day activities such as dressing, climbing stairs, getting in and out of bed, or walking can be terminated or limited due to arthritis. [1]

One of the chronic inflammatory arthritis with high prevalence is Rheumatoid Arthritis (RA). It irreversibly affects patient's quality of life, performance and life expectancy. [2] RA, if uncontrolled may result in the degradation of the joints causing disability. [3] Firstly, it affects joints, causing joint pain, swelling, and stiffness, but can also affect other organs in the body. Patients complain of increase disability and decreasing quality of life as the disease progresses and joint damage occurs.

Osteoarthritis (OA) is universally known as the most frequent musculoskeletal disorder. It normally implicates as pain

involving 1 or several joints, mainly occurring in the elderly with a radiographic prevalence of nearly 70% in persons over age 65. The burden of the disease is mainly related to pain occurrence leading to functional disability that varies from mild to moderate difficulties in movement of normal daily living activities. [1]

The HAQ was developed to assess functional status in adults with arthritis, but is now commonly used among many disciplines. Originally developed for use in patients with rheumatoid arthritis (RA) and osteoarthritis, the HAQ has had application in both adults and children within a wider range of rheumatologic conditions including juvenile idiopathic arthritis, systemic lupus erythematosus, systemic sclerosis, ankylosing spondylitis, fibromyalgia, and psoriatic arthritis. [4] Physical function is only one of several domains determining health-related quality of life. The MHAQ was developed as a short version of the HAQ with the goal of decreased patient and provider time commitment. The MHAQ was developed for use in patients with rheumatic disease as an assessment of functional status. [5]

The main aim of our study To assess the physical functional status in Osteoarthritis (OA) and Rheumatoid arthritis (RA) patients and to determine the prevalence, risk factors, co-morbidity and socio-demographic characteristics of the patients selected for analysis.

MATERIALS AND METHODS

Study site: The study was conducted on Orthopaedic department of tertiary care hospital at Palakkad district, Kerala, India.

Study design: The study was designed as a prospective observational study.

Study duration: The duration for data collection was 6 months.

Study population: A total of 217 cases were included in the study.

Study criteria:

Inclusion criteria: Both male as well as female with or without co-morbidities of all age groups diagnosed with RA and OA were included in the study

Exclusion criteria: Patients unwilling to participate, Patients diagnosed with other Rheumatic disease were excluded from the study

Data collection Method: A predesigned Data Entry Form was used for collecting patient details and MHAQ (Modified Health Assessment Questionnaire) used to assess physical functional status.

RESULTS

Table 1: Distribution of study subjects according to Socio-Demographic factors

Variables	RA N=52	OA N=165
	Number (%)	Number (%)
Age(years)		
<20	02(3.84%)	0(0%)
20-35	08(15.32%)	07(4.24%)
36-50	22(42.30%)	58(35.15%)
51-65	16(30.76%)	74(44.84%)
66-80	03(5.76%)	26(15.75%)
>80	01(1.92%)	0(0%)
Gender		
Male	19(36.53%)	74(44.84%)
Female	33(63.46%)	91(55.15%)
Body Mass index(BMI) kg/m^2		
<18.5:Under weight	06(11.53%)	08(4.84%)
18.5-24.9:Normal	41(78.84%)	85(51.51%)
25-29.9:Overweight	04(7.69%)	54(32.72%)
>30.0:Obese	01(1.92%)	18(10.90%)
Working status		
Employed	24(46.15%)	86(52.12%)
Unemployed	28(53.84%)	79(47.87%)
Social Habits		
Smoking	10(19.23%)	34(20.60%)
Alcoholic	08(15.38%)	09(5.45%)
Smoking +Alcoholic	01(1.92%)	26(15.75%)
None	33(63.46%)	96(58.18%)

A total of 217 patients were included in the study. Table 1 shows the distribution of patients according to socio-demographic characteristics which include age, Gender, BMI, Working status and Social habits. A total of 165 patients age distribution in OA was found to be more prevalent in the age group between 51-56 (44.84%) years and a total of 52 cases age distribution in RA was found to be more in the age group of 36-50 years (42.30%). RA is commonly seen in female patients 33(63.46%) than male 19(36.53%) and also OA was more common in female 91(55.15%) patients than male patient 74(44.84%). Both in RA and OA the majority of the enrolled had normal BMI, and in RA 06(11.53%) under weight and

01(1.92%) were obese. In case of OA 18(10.90%) were obese and 54(32.72%) had over weight.

The social history includes, in RA about 28(53.84%) were unemployed and 24(46.15%) employed, Out of 165 OA cases 79(47.87%) were unemployed and 86(52.12%) employed.

Social habits of RA patients shows that 10(19.23%) smokers, 08(15.38%) alcoholic and 01(1.92%) both smokers and alcoholic. In OA 34(20.60%) smokers, 09(5.45%) alcoholic and 26(15.75%) both smokers and alcoholic.

From table 2, a total of 217 cases the prevalence of OA 165 (76.03%) is more than RA 52(23.96%).

Table 3 shows that out of 36 RA cases majority of the risk factor was found to be Female Gender 33(63.46%).

Table 2: Prevalence of Disease distribution

Disease Condition	Number of Patients (n=217)	Percentage (%)
Rheumatoid arthritis	52	23.96
Osteoarthritis	165	76.03

Table 3: Risk factors for RA

Factors	Number of patients (n=52)	Percentage (%)
Old Age	22	42.30
Family history	14	26.92
Gender(Female)	33	63.46

Table4: Risk factors for OA

Factors	Number of patients (n=165)	Percentage (%)
Old Age	74	44.84
Obesity	18	10.90
Family history	15	9.09
Fractures	7	4.24
Others	13	7.87

Out of 165 OA cases majority of the Risk factor was found to be Old age 74(44.84%) as shown in table 4.

From the table 5 both in RA 15(60.0%) and OA 41(61.19) cases Co-morbidities like Hypertension was found to be high.

Table 5: Details of co-morbidities

Co morbidities	RA		OA	
	Number of Patients (n=25)	Percentage (%)	Number of Patients (n=67)	Percentage (%)
Hypertension	15	60.0%	41	61.19
Diabetes mellitus	03	12%	05	7.46
Hypertension and Diabetes mellitus	04	16	08	11.94
Others	03	12	13	19.40

Table 6: Degree of Disability (Functional status), According to MHAQ in RA

MHAQ Score	Number of patients (n=52)	Percentage (%)
Mild:<3	08	15.38
Moderate :1.3-1.8	39	75.00
Severe:>1.8	5	9.61

According to the MHAQ, functional analysis (Table 6) showed that maximum number of patient had moderate (75.0%) functional disability, 08 (15.38%) mild and 05(9.61%) had severe disability.

Table 7: Degree of Disability (Functional status), According to MHAQ in OA

MHAQ Score	Number of patients (n=165)	Percentage (%)
Mild:<3	156	94.54
Moderate :1.3-1.8	07	4.24
Severe:>1.8	02	1.21

A total of 165 patients, (Table 7) about 156 (94.54%) had mild functional disability, 07 (4.24%) had moderate and only 02 (1.21%) had severe disability.

DISCUSSION

Socio-demographic characteristics of the study subjects (Table 1)

From the present study age distribution in OA was found to be more prevalent in the age group between 51-56 (44.84%) years and age distribution in RA was found to be more in the age group of 36-50(42.30%) years. This study reveals that, both OA and RA were more prevalent in the age group of 36-56 years which was found to be in accordance with the study conducted by Mohamed Ahmed.et al. [1] and Sita Gurung.et al. [6]

The study shows that RA was commonly seen in female patients 33(63.46%) than male patients 19(36.53%) which was in accordance with the study conducted by Mohamed Ahmed et al. [1] and B. Premkumar et al., [7] also OA was more common in female 91(55.15%) patients than

male patient 74(44.84%). Purushottam jhanwar.et al. [8] was found out the similar results. Hence, our study revealed that the gender distribution in OA and RA found to be more in females than in male.

Both in RA and OA the majority of the enrolled had normal BMI .In RA 06(11.53%) were under weight and 01(1.92%) were obese. In case of OA 18(10.90%) were obese and 54(32.72%) were overweight. The study conducted by Baodong Qin et al. [9] suggested that an increase in BMI could contribute to higher risk for RA.A study conducted by J.Trivedi.et al. [10] in osteoarthritis patients observed that person with Body Mass Index above 25Kg/m^2 has 5.83 times greater risk of getting osteoarthritis as compared to the persons with normal BMI.

From our study the Majority of the patients in RA 28(53.84%), were unemployed. This is in agreement with the findings of Bjork et al., [11] who observed a 70% reduction in hand function in women with RA, at the initial stages of the disease, and 50% during evolution, explaining the high incidence of loss of manual labor. In case of OA out of 165 cases 86(52.12%) were employed and 79(47.87%) were unemployed, shows that the working status and productivity is impaired due to functional disability.

The Social habits of RA patients, shows that 10(19.23%) smokers, 08(15.38%) alcoholic and 01(1.92%) both smokers and alcoholic. James R. Maxwell.et al. [12] study had demonstrated that consumption of alcohol is associated with a significant and dose-dependent reduction in susceptibility to RA. Sigaranın Romatoid.et al. [13] reported that smoker patients presented more active and severe disease as evaluated by the higher total number of tender and swelling joint count, compared to non Smokers. In OA 34 (20.60%) smokers, 09 (5.45%) alcoholic and 26 (15.75%) both smokers and alcoholic. A study conducted by S Amin.et al. [14] observed that men with knee osteoarthritis who smoke sustain greater cartilage loss and have more severe knee pain than men who do not smoke.

Prevalence of Disease Distribution (Table 2)

The study shows that prevalence of OA 165 (76.03%) is more than RA 52(23.96%)which was in accordance with the conducted by Mohamed Ahmed.et al. [1] and Sita Gurung.et al. [6]

Risk factors (Table 3 & 4)

The study shows that (Table 3) out of 36 RA cases majority of the risk factor was found to be Female Gender 33(63.46%) and in OA out of 165 cases majority of the Risk factor was found to be Old age 74(44.84%) (Table 4).The results were similar with the study conducted by Sita Gurung et al. [6]

Co-morbidities (Table 5)

Co-morbidity profiles play a vital role in deciding the therapy and effectiveness of the treatment. This study reveals that the most common co-morbid conditions among RA patients were hypertension 15 (60.0%). The study conducted by Al-Bishri et al. [15] on Co-morbidity Profile among Patients with Rheumatoid Arthritis also shows the similar results, and find out that the most common co-morbidity was hypertension (HTN). From our study, a total of 165 Osteoarthritis cases hypertension occurred in 41(61.19%) and was found to be Hypertension was the major co-morbidity among OA patients, the results similar with the study conducted by Alice Abath Leite.et al. [16] their study assessed 91 patients and observed that the metabolic syndrome frequency was 54.9%. Hypertension occurred in 75.8% of the patients, dyslipidemia in 52.6%, and obesity in 57.1%.

Degree of Disability (Functional status) (Table 6 & 7)

According to the MHAQ, functional analysis (Table 6) among RA patients showed that maximum number of patient had moderate(75.0%) functional disability, 08 (15.38%) mild and 05(9.61%) had severe disability. A study conducted by María Inés Corbachol.et al. [17] more than 70% of the

patients had HAQ rates indicating moderate to severe disability. The study showed that RA is associated with higher disease burden, reflected on pain, impact on global health, and functional and working status, as well as the physical and emotional dimensions of the Health related quality of life. A total of 165 OA patients, (Table 7) about 156 (94.54%) had mild functional disability, 07 (4.24%) had moderate and only 02 (1.21%) had severe disability. A study conducted by Theodore pincus.et al. [18] reported that mean MHAQ scores were highest in patients with RA and psoriatic arthritis, followed by patients with fibromyalgia, OA, scleroderma, vasculitis, SLE, and other rheumatic diseases.

CONCLUSION

The study was conducted to assess the functional status of patients with Osteoarthritis and Rheumatoid arthritis. Age distribution in OA was found to be more prevalent in the age group between 51-56 (44.84%) and age distribution in RA was found to be more in the age group of 36-50 years (42.30%). Our study revealed that the gender distribution in OA and RA found to be more in females (55.15%, 63.46% respectively), and the prevalence of OA (76.03%) is more than RA (23.96%). In OA majority of the Risk factor was found to be Old age (44.84%) and in RA it was found to be female gender (63.46%). Both in RA (60.0%) and OA (61.19) cases Co-morbidities like Hypertension was found to be high. Out of 165 OA patients (94.54%) had mild functional disability where as in RA out of 52 cases (75%) had moderate functional disability.

Our study reveals that both Osteoarthritis and Rheumatoid arthritis badly affects the physical functional status of patients. The MHAQ score is higher in RA than OA suggested that R.A had more affect on physical functional status of patients than OA.

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REFERENCES

1. Ahmed Mohamed, Nahid Ali, Zia Ur Rahman, M D Misbahullah Khan, A study on prescribing patterns in the management of Arthritis in the department of Orthopaedics. Scholars Research Library.2012; 4(1): 5-27.
2. Ullal DS, Narendranath S, Kamath R K,Paimrsm, Kamath U,Savur Amarnath D.Prescribing Pattern for Osteoarthritis in a Tertiary Care Hospital. Journal of Clinical and Diagnostic Research. 2010; (4):2421-2426.
3. Sulaiman Wahinuddin, Ashraful Toib, Giriyappanavar Chandrashekhar, Anwar Arshad.The Trends of DMARDS prescribed in Rheumatoid Arthritis Patient in Malaysia. Oman Medical Journal. 2009; 24(4):260-263.
4. Bruce B, James F Fries. The Stanford Health Assessment Questionnaire: dimensions and practical applications. Health Quality of Life Outcomes. Bio med Central.2003; 1(20):1-6.
5. Wolfe F. Which HAQ is best? A comparison of the HAQ, MHAQ and RA-HAQ, a difficult 8 item HAQ (DHAQ), and a rescored 20 item HAQ (HAQ20): analyses in 2,491 rheumatoid arthritis patients following leflunomide initiation. Journal of Rheumatology. 2001; 28(5): 982-985.
6. Sita Gurung, Shyam Babu, Sandra Sabu, Riya Mariam Shibu, Rihanna Begum, Basavaraj K. Nanjwade. A study on prescribing pattern in the management of Osteoarthritis and rheumatoid arthritis in the Department of orthopaedics. World journal of pharmacy and pharmaceutical sciences.2016; 5(4):1472-1493.
7. B. Premkumar, M Srinivasamurthy, K Rajagopal. A Retrospective Study on Clinical Characteristics of Rheumatoid Arthritis Patients. Biomedical &

Pharmacology Journal.2013; 6(2):471-475.
8. Dr. Purushottam jhanwar, Dr.Sushma Pandey, Dr. Neelam Sharma, Dr. Ankur Jhanwar. Drug utilization study of osteoarthritis in a tertiary care teaching hospital of Rajasthan. International journal of pharmaceutical sciences review and research.2012; 14(2):35-37.
9. Baodong Qin, Min Yang, Haitao Fu, Ning Ma, Tingting Wei, Qingqin Tang, Zhide Hu, Yan Liang , Zaixing Yang, Renqian Zhong. Body mass index and the risk of rheumatoid arthritis: a systematic review and dose-response meta-analysis. Arthritis Research & Therapy. 2015; 17(86):1-12.
10. Trivedi J, D V Bala, K N Trivedi. Study of case control study of Osteoarthritis and associated risk factors. Gujarat Medical Journal. 2009; 64 (2):98-99.
11. Bjork M,I Thyberg, L Haglund, T Skogh. Hand function in women and men with early rheumatoid arthritis. A prospective study over three years (The Swedish TIRA project).Scandinavian Journal of Rheumatology.2006; 35(1):15-19.
12. James R. Maxwell, Isobel R Gowers, David J. Moore Anthony G Wilson. Alcohol consumption is inversely associated with risk and severity of rheumatoid arthritis. Journal of Rheumatology. 2010; 49 (11):2140-2146.
13. Sigaranın Romatoid A, Raouf Rahim Mirza.The Effect of Cigarette Smoking on Rheumatoid Arthritis. Cukurova Medical Journal. 2014; 39(4):736-742.
14. . S Amin, J Niu, A Guermazi, M Grigoryan, D J Hunter, M Clancy, M P LaValley, H K Genant, D T Felson. Cigarette smoking and the risk for cartilage loss and knee pain in men with knee osteoarthritis. Ann Rheum Dis. 2007; 66:18-22.
15. Al-Bishri, SM Attar, Nawal Bassuni, Yasser Al-Nofaiey, Hamed Qutbuddeen, Salma Al-Harthi, Sarah Subahi. Comorbidity Profile among Patients with Rheumatoid Arthritis and the Impact on Prescriptions Trend. Clinical Medicine Insights: Arthritis and Musculoskeletal Disorders.2013; 6:11-18.
16. Alice Abath Leite, Aline Jurema Gesteira Costa, Beatriz de Arruda Matheos de Lima,Adriana Valentina Lopes Padilha, Emidio Cavalcanti de Albuquerque, Claudia Diniz Lopes Marques Comorbidities in patients with osteoarthritis: frequency and impact on pain and physical function. Rev Bras Reumatol.2011; 51(2):113-123.
17. María Inés Corbacho, Juan José Dapueto. Assessing the functional status and quality of life of patients with rheumatoid arthritis. Bras Journal of Rheumatology.2010; 50(1):31-43.
18. Theodore pincus, Christopher Swearingen, Frederick Wolfe. Toward a multidimensional Health assessment questionnaire (MDHAQ).Arthritis & rheumatism.1999; 42(10): 2220-2230.

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