ORIGINAL ARTICLE

Prevalence of rheumatoid arthritis in population with arthralgia presenting to a tertiary care hospital

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Abstract

Objective: To evaluate patients presenting to healthcare facilities because of joint pain and subsequently diagnosed with rheumatoid arthritis.

Method: The prospective study was conducted from August 1, 2013,to January 20, 2014, at Jinnah Postgraduate Medical Centre, Karachi, and comprised patients presenting with joint pain. A questionnaire was used to collect data, and patients were diagnosed using American College of Rheumatology / European League Against Rheumatism Rheumatoid Arthritis Classification Criteria. Data was analyzed using SPSS 20.

Result: Of the 320 patients approached, 316(98.7%) filled the questionnaire. Eighty five (26.9%) were diagnosed as rheumatoid arthritis. Sixty (70.5%) were females and 25 (26.3%) were males. The frequency of rheumatoid arthritis was higher in people in 4th, 5th and 6th decades of life. Twenty five (7.9%) patients had positive family history, 77 (90.2%) were chronic sufferers and only 53 (16%) agreed to follow recommended immunosuppressive therapies. 212 (67.1%) patients belonged to highly literate class.

Conclusion: Proper guidance regarding the disease was found to be lacking in the urban centre.

Keywords: Rheumatoid arthritis, Tertiary care hospital, Joint pain, Literate class. (JPMA 65: 1202; 2015)

Introduction

The term arthralagia is a medical synonym for joint pain and it is among frequent musculoskeletal complaints and reportedly one of every six patients visit a primary care physician with the complaint.[1] Musculoskeletal conditions have an enormous and growing impact worldwide and musculoskeletal impairments is the top-ranked chronic impairment in the United States.[2] It is relatively more common in women[3] and majority of the cases seem to be self-reported.[4] It is playing quite an important role in imposing substantial economic and social burden on society.[5] Amidst the large population approaching healthcare, majority misunderstand arthritis as just musculoskeletal pain.[1] Arthritis covers the wide boundary of musculoskeletal complaints, with an estimated 15% (40 million) Americans having some form of arthritis in 1995, and by 2020 an estimated 18.2% (59.4 million) will be affected.[6] In third world countries like Pakistan which are not purely self-sufficient to compete with the increasing global burden and monitoring the changes in the disease statistics, prevalence of different forms of arthritis is largely unknown. Severity of arthritis-related impairment indirectly affects the quality of life through mediating variables.[7]

The occurrence and manifestations of rheumatoid arthritis (RA) are temporally and geographically variable.[8] RA is more common in the north and similar to the frequency amongst Pakistanis resident in England. Ethnic and genetic susceptibility might have accounted for this.[9] The urban population was less of a factor regarding its prevalence.[10] Unlike osteoarthritis, the disease has a milder course and lower incidence. RA is a complex disorder involving joints with multiple risk factors which can be widely divided into three major forms: genetic predilection,[11] constitutional causes which include race, age and gender,[12,13] and immunological risk factors.[14] The risk of work disability increased with increasing age, more severe disease, greater complexity of involvement with things at work, reduced work hours, and desire not to be working outside the home.[15]

Data suggests that new therapies are unlikely to be of general benefit in the developing world. This is primarily because of the financial constraints and also because of the increased risk of infections, particularly tuberculosis associated with the use of tumour necrosis factor alpha (TNFα) blockers.[16] RA mortality rates are well established[17] and are raised at least 2-fold, particularly because of cardiovascular manifestations observed in these patients.[18] Rheumatoid disease can affect any age group[19] but the prevalence of arthritis in older adults is reported to range from 25% to 44%.[20] RA has a considerable impact on work status; a study indicated that work disability is dependent on disease characteristics and on the educational level of the patient.[21]

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The current study was planned to focus on the population having RA presenting to healthcare services with joint pain in an urban setting.

Patients and Methods

The prospective study was done from August 1, 2013 to January 20, 2014, in the outpatient department (OPD) at Jinnah Postgraduate Medical Centre, a tertiary care hospital in Karachi. A questionnaire was used for interviewing patients presenting to the Medical OPD. The diagnosis was later confirmed by consultants on the basis of general physical examination. Non-probability purposive sampling was employed to raise the study population. Patients included were both male and female aged 20-83 years and calculated in decades of 10 to 90. Pregnant females or participants having any serious chronic disease and on a drug regimen for that or admitted to some other ward were excluded. Also excluded were those with history of addiction, psychiatric illness, untreated malignancy or neurological disorder.

The questionnaire was used as a diagnostic tool as it is inexpensive and does not require inter-rater validity. The questionnaire included informed consent and had the questions related to signs and symptoms as well as previous investigations' results. Signs and symptoms enquired about included joint pain, site of pain, duration of pain, intensity of pain, relation to mobility, length of morning stiffness and tenderness of joint, presence of skin nodules. Investigations evaluated included X-rays of joint, erythrocyte sedimentation rate (ESR), Cyclic Citrullinated Peptide antibody (Anti-CCP antibody) testing, Vitamin D and calcium (Ca) levels. The patients were categorised as RA-positive with the help of 2010 American College of Rheumatology / European League Against Rheumatism (ACR/EULAR) Rheumatoid Arthritis Classification Criteria.[22] This classification incorporates 4 components to be checked in patients presenting with joint pain before labelling them as RA patients. These components are joint involvement; serology in which rheumatoid factor (RF) and anti-citrullinated protein antibody (ACPA) are interpreted; acute phase reactants in which C-reactive protein (CRP) and ESR are interpreted; and duration of symptoms. Scores from all 4 components were added to get the final score for every patient. According to this classification criteria, a total score of $\geq$6/10 is needed to classify a patient as having definite RA. The data was entered and analysed using SPSS 20.

Results

Overall 320 patients presented with joint pain, but 4(1.25%)had incomplete investigations done. The final study sample, as such, stood at 316(98.75%). A total of 63(20%) patients were in the 4th decade of their life with a mean age of 36.97±3.131 years; 113(36%) were in the 5th with a mean age of 47.29±2.88 years; and 74(23.4%) were in the 6th decade with a mean of 55.49±3.02 years (Table-1).

Overall, 212(67%) patients had literacy level over fifth grade, while 104(33%) were below fifth grade; 263(83.2%) patients were taking over-the-counter analgesics; 53(16.8%) had got immunosuppressive therapy i.e. steroids, methotrexate, lefulonamide etc. previously; and

Table-1: Distribution of patients with joint pain in age groups.

	n	Mean ±SD	%
2nd decade	3	20.0 ± 0.00	0.9
3rd decade	24	25.83 ± 3.319	7.6
4th decade	63	36.97 ± 3.131	19.9
5th decade	113	47.29 ± 2.884	35.8
6th decade	74	55.49 ± 3.026	23.4
7th decade	28	66.96 ± 3.191	8.9
8th decade	10	74.20 ± 2.974	3.2
9th decade	1	83.0 ± 0.00	0.3
TOTAL=	316	47.97 ± 12.214	100

Table-2: ACR/EULAR classification score in population with joint pain.

Scores	Frequency	Percent
Score 1	35	11.1
Score 2	59	18.7
Score 3	67	21.2
Score 4	41	13.0
Score 5	29	9.2
Score 6	10	3.2
Score 7	28	8.9
Score 8	15	4.7
Score 9	16	5.1
Score 10	16	5.1
TOTAL=	n=316	100%

ACR: American College of Rheumatology
EULAR: European League Against Rheumatism

Table-3: ACR/EULAR classification score in rheumatoid arthritis diagnosed patients.

Scores	Frequency	Percent
Score 6	10	12
Score 7	28	33
Score 8	15	17
Score 9	16	16
Score 10	16	16
TOTAL=	n=85	100%

ACR: American College of Rheumatology
EULAR: European League Against Rheumatism.

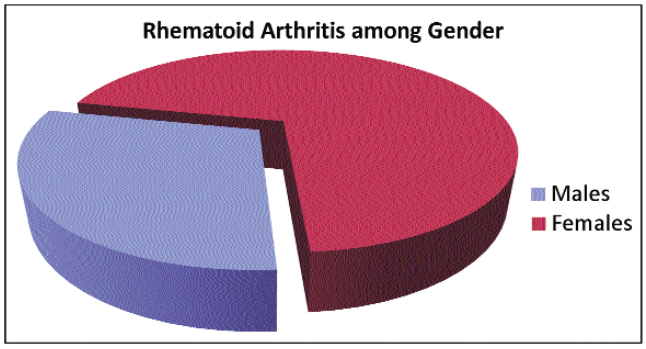

Figure-1: Distribution of rheumatoid arthritis with respect to gender.

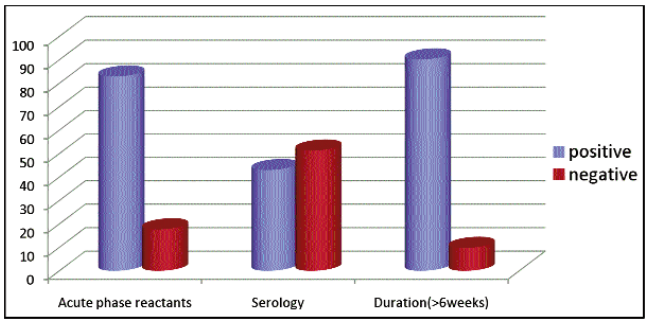

Figure-2: Prevalence of components of diagnostic criteria in rarthritispatients.

25(7.9%) showed positive family history for different joint diseases.

Of the total study population, 85(26.9%) patients were diagnosed RA-positive, while 231(73.1%) were negative (Table-2). The mean age of these RA-positive patients was 47.97±12.214 and 60(70.5%) were females compared to 25(29.5%) males (Figure-1).

Of the 85(26.9%) RA-positive patients, 10(12%) were with a total score of 6; 28(33%) with a total score of 7;15(17%) with a total score of 8; and 16(19%) with total score of 9 and 10 each (Table-3).

Of the total RA-positive patients, 34(40%) had >10 joints; 37(43%) had high-positive RF or high-positive ACPA; 70(82%) patients had abnormal CRP or ESR; and 77(90%) patients suffered symptoms for ≥6 weeks (Figure-2).

Discussion

The results showed that 26.9% (n=85) patients had RA and approached health services at public-sector tertiary care hospital for joint pain. This shows a little raised proportion of these patients in our community in comparison with previous studies done in the similar setup.[23] People in the fourth, fifth and sixth decades showed higher prevalence of joint pain. The study showed high prevalence of the disease in females (70.5%) which is in line with past studies.[24] As the study was conducted in Karachi, which is a highly populated city and has several types of educational institutions, the literacy level of these patients was also enquired which classified their literacy into educational level above and below the fifth grade. More people (67%) with joint pain had literacy above the 5th grade which might help in future studies to exclude low literacy as a risk factor for the progression of disease.

Overall 40% patients had several joints (>10) involved which showed the presentation of disease in its progressive phase. And, 90% of these patients showed the occurrence of disease process in the chronic phase i.e. duration more than six weeks. Less than half of the RA-diagnosed patients had RF positive or ACPA positive, which showed the extraneous behaviour to its occurrence in the disease and hence the delayed referral due to its absence in most of them could be the cause of late presentation in the course of their disease. Further, 82% patients had high level of ESR or CRP. Hence, all of this showed that majority of the patients who were diagnosed with RA were in the worst presentation of disease. As majority of the patients had the use of over-the-counter medication in their past medical records, it may have some influence on the delayed disease presentation.

As previous studies have shown, the diagnosis of the sero-negative patients requires greater care.[25] On the other hand, RA is predominantly associated with other autoimmune disorders such as Crohns disease, asthma,[26] Coeliac disease,[27] vasculitidis,[28] Insulin Dependent Diabetes Mellitus[29] etc., and, last but not the least, are the psychosocial problems which determine the final outcome of the disease.

So, it may be the first presentation of associated disorders, especially in females who are more prone to developing autoimmune disorders. The increasing prevalence of disease in population with joint pain shows that joint pain is not just an age-related phenomenon; it is one of the serious symptoms which underlie some significant pathology related to them. Ignorance or misdiagnosis may have hazardous consequences.

Conclusion

Majority of the patients diagnosed with RA were females. Proper guidance regarding the disease is still lacking in the population. Further studies are required to find out the prevalence of cured and un-cured population and their confounding factors to prevent the multi systemic involvement in disease as it has its own role in morbidity and mortality in this population.

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