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Pattern of arthralgia in an urban community in Southwestern Nigeria

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Abstract

Background: Arthritis is a common presentation among Nigerians, most especially in the elderly population. Easy access to over-the-counter drugs, paucity of data, and non-orthodox medical practice have underscored the need to examine the magnitude of the problem toward morbidity reduction risk factors. The objective of the study was to determine the pattern of arthralgia in Osogbo community in Southwestern Nigeria.

Materials and Methods: This was a descriptive cross-sectional study conducted between September 2010 and August 2011. Respondents were serially recruited as they presented to the randomly selected healthcare facilities. Interviewer administered questionnaires, and modified checklist were used for collecting clients information, physical examination, X-ray, and laboratory results. Data were analyzed using the SPSS software.

Results: A total of 90 cases were screened, with a male to female ratio of 1:1.5 and age range of 50-59 years. Females were more affected among the studied respondents, and this was statistically significant ($p < 0.05$). About half (48.9%) used non-steroidal anti-inflammatory drugs (NSAID) for the pain, while about 17.8% used traditional herbs. Osteoarthritis of the knee was the most common radiological finding, constituting about 86.7% of the 30 respondents that had X-ray done. Only one case tested positive to rheumatoid factor in high-dilution titer. Notable complication of arthralgia in this study was loss of time off work in 46.6% of the respondents.

Conclusion: Arthralgia of the knee joint was most common in the studied area, followed by that of hip and the ankle. Weight reduction strategies and prompt diagnosis and treatment were advocated. Since about half of the respondents used NSAID, the use of enteric-coated NSAID tablets would go a long way to minimize the unwanted side effects of NSAID, notably peptic ulceration and erosion.

Keywords: Arthralgia, pattern, urban community

Résumé

Fond : L'arthrite est une présentation commune chez les Nigériens, plus particulièrement dans la population âgée. Un accès facile aux médicaments en vente libre, la rareté des données et non orthodoxes pratique médicale ont mis en évidence la nécessité d'examiner l'ampleur du problème vers des facteurs de risque de réduire la morbidité. L'objectif de l'étude était de déterminer le modèle d'arthralgie dans la communauté d'Oshogbo dans le sud-ouest du Nigeria.

Matériel et méthodes: C'est une étude transversale descriptive, menée entre septembre 2010 et août 2011. Répondants ont été recrutés en série qu'ils ont présenté à des établissements de santé choisis au hasard. Questionnaires intervieweur administré et mis à jour le liste de vérification ont été utilisés pour la collecte des informations clients, examen physique, des rayons x et les résultats de laboratoire. Données ont été analysées à l'aide du logiciel SPSS.

Résultats: Un total de 90 cas ont été examinés, avec un mâle/femelle ratio d'ordre 1: 1.5 et l'âge de 50-59 ans. Femelles ont été plus touchées chez les répondants étudiés, et c'était statistiquement significative ($P < 0,05$). Environ la moitié

(48,9%) utilisé des médicaments anti-inflammatoires non stéroïdiens (AINS) pour la douleur, alors qu'environ 17,8% herbes traditionnelles. L'arthrose du genou a été la constatation radiologique plus courante, constituant environ 86,7% des 30 répondants qui avaient fait de radiographie. Qu'un seul cas avérés positifs pour le facteur rhumatoïde dans le titre de haute dilution. Complication notable d'arthralgie dans cette étude a été la perte de jours de congé à 46,6 % des répondants.

Conclusion : Arthralgia de l'articulation du genou est plus commun dans la zone étudiée, suivie par celle de la hanche et la cheville. Stratégies de réduction de poids et un diagnostic rapide et le traitement ont été préconisées. Depuis environ la moitié des répondants ont utilisé les AINS, l'utilisation de comprimés d'AINS entérosolubles irait un long chemin à réduire au minimum les effets indésirables des AINS, ulcération peptique notamment et l'érosion.

Introduction

Many hospital-based studies have shown that arthritis is a common presentation among Nigerians, most especially among the elderly population.^[1,2] These are chronic degenerative joint diseases of two major types: osteoarthritis (OA), which is the “wear and tear” arthritis, and rheumatoid arthritis, an inflammatory type of arthritis that occurs when the body’s immune system is compromised. The patho-physiology of these and other forms of arthritis are well documented in the literatures.^[3,4]

OA is the most common form of arthritis and a leading cause of disability.^[5] It affects both the larger and the smaller joints of the body, including the hands, feet, back, hip, and knee. Generalized OA with multiple joint involvements was found to represent a relatively large subgroup of patients.^[6-9] In a Nigerian study of OA, the knee was the joint most often affected, while the hip and hand diseases were uncommon. All studied age groups, especially the elderly, were affected, while joint disease was predominantly monoarticular, although no patient had three or more sites affected.^[10] On the other hand, rheumatoid arthritis that occurs mostly in people aged ≥ 20 years often affects joints in the fingers, wrists, knees, and elbows, with an often symmetrical presentations that can lead to complications in a few years if not treated. Common factors for the common arthritis include the female gender, prior joint trauma, obesity, and a sedentary lifestyle.^[11]

The acceptance of traditional healthcare to the generality of Yoruba tribe and obvious easy access to over-the-counter drugs could make a client suffering from arthralgia to go on self medications. Since treatment modalities are long-termed, exposure to complications is common if not treated early. This also underscores the need for prompt investigations of complaints of arthritis in order to arrive at a definitive diagnosis, thus showcasing the true picture of prevalence and pattern of arthralgia. This

study examined pattern of arthralgia in the Osogbo community in the Osun state in southwestern Nigeria.

Materials and Methods

This is a descriptive cross-sectional study of the pattern of arthralgia in the Osogbo community of Osun State in southwest Nigeria. Osun state was carved out of the Old Oyo State in 1991 and has a population of about 320,000, with a male to female ratio of 1:1 and a population pyramid similar to the national pattern of developing country of Nigeria.^[12] There is a teaching hospital, one general hospital, and about 20 primary healthcare centers (PHC) in the two local government areas in the town.

This health facility-based study was carried out within a 1-year period between September 2010 and August 2011. Inclusion criteria included a patient voluntarily presenting in the health facility with current or previous history of joint pain. The two PHCs already running geriatric clinics and the geriatric clinic of the teaching hospital were excluded from the study to generate new sets of clients. All eligible consenting clients who presented in the sampled health facilities within the study period were recruited into the study.

Two PHC facilities from each local government were selected using simple random sampling (employing simple balloting). These, in addition to the GOPDs of the secondary and tertiary health facilities, were finally selected and used for data collection. Research instruments employed was a pre-tested semi-structured interviewer administered questionnaires to collect data on the pattern of arthralgia, and a checklist to collect information of clinical physical examinations, laboratory, and X-ray data carried out on subjects. Trained resident doctors were employed in data collection, as they could do physical examinations, make a presumptive diagnosis, and report results of laboratory investigations. Validity of research instruments was also done by translating the

questionnaire into the local language and a back translation into English, as well as a pre-test of questionnaire in the geriatric clinics of the two PHCs not selected. Ethical clearance was obtained from Ladoke Akintola University Teaching Hospital (LTH) ethical review committee, while informed consent was also obtained from all eligible subjects. Study variables include the socio-demographic data, pattern of arthritis, physical examinations, and laboratory and X-rays investigations. For the physical examination, each of these five abnormalities (deformity, swelling, tenderness, warmth, and crepitus) were considered (presence or absence) per subject in an affected joint. Study limitation was inability of some of the subjects to afford laboratory and X-rays investigations in addition to the fact that this research was self-funded and could not assist subjects financially. Data analysis was done with the aid of SPSS computer software package after sorting out the questionnaire and modified checklist. Validity of data was ensured by double entry and manual, random checks. Frequency tables were generated. The chi-square test statistics of significance was used to test for possible associations at a level of significance set at 5%.

Results

A total of 90 respondents who met the inclusion criteria for the study were reported.

Table 1 shows that majority of the respondents 54 (60.0%) were females and the male to female ratio was 1:1.5. The age group of 50-59 years was most

commonly affected ($n = 22, 24.4\%$); overall, those belonging to the age of ≥ 40 years accounted for 59 (65.6%) of all cases. Traders and artisans made up 33 (36.7%) and 32 (35.6%) cases, respectively. Majority of the respondents ($n = 43, 47.8\%$) had secondary education and above. However, about one-third respondedents ($n = 28, 31.1\%$) had no formal education at all.

Table 2 shows the pattern of arthritis. About one-third ($n = 28, 31.1\%$) of the cases could not say specifically what caused their joint pain. Seventeen (18.9%) of the respondents attributed the cause of the pain to old age, 13 (14.4%) attributed their arthralgia to excessive stress while travelling, 9 (10.0%) thought the pain was caused by black blood, and only 2 (2.2%) attributed it to too much weight. About one-fourth ($n = 24, 26.7\%$) of the respondents had a positive family history of arthralgia. The symptomatology and the joints of the body affected in the study population showed that the knee joint was the most commonly affected joint in 57 (63.3%) of the cases. Other joints equally involved were the spine, hip, and shoulder joints in 11.1, 11.1, and 6.7% respondents, respectively. Treatment of joint pain by the respondents included drugs in 54 (60.0%) respondents, of which 44 (48.9%) reported use of non-steroidal anti-inflammatory drugs (NSAID), 16 (17.8%) reported use of traditional herbs and balms, and 20 (22.2%) reported no medication. The most notorious complication reported by the respondents was loss of time off work in 42 (46.6%). More than one-third ($n = 39, 43.3\%$) of respondents felt that an arthritis club should be set up.

Table 3 shows the findings from physical examination, X-rays, and laboratory investigations. All respondents were examined for abnormalities (deformity, swelling, tenderness, warmth, and crepitus) in the affected joints. Each of these five abnormalities were considered (presence or absence) per subject in an affected joint. Abnormalities of the knee joint was the most common in 197 (43.8%) of the respondents, followed by abnormalities of the hip, ankle, and shoulder joints in 18.7, 15.6, and 9.1% respondents, respectively. Abnormalities of the wrist joint was the least found ($n = 6, 1.3\%$). Anemia was recorded in five (5.6%) respondents. Laboratory findings inclusive of radiological and serological examinations revealed that OA of the knee joint was the most common radiological finding in 26 (86.7%) of the 30 cases that had X-ray; while only one case had positive rheumatoid factor in high-dilution titer. Table 4 showed selected differentials in the profile of respondents with arthralgia. Old age and female gender were found

Table 1: Socio-demographic characteristics of the respondents

Variables ($n = 90$)	Frequency (f)	Percentage (%)
Age group of respondents (yrs):		
<20	5	5.6
20-29	16	17.8
30-39	20	22.2
40-49	22	24.4
50-59	17	18.9
60+		
Sex		
Male	36	40.0
Female	54	60.0
Education level		
Nil formal	28	31.1
Primary	19	21.1
Secondary	33	36.7
Tertiary	10	11.1
Occupation		
Trading	33	36.7
Artisan	32	35.6
Students	10	11.1
Civil servants	8	8.8
Farming	7	7.8

Table 2: Knowledge, perception, symptoms, and location of arthralgia

Variables (n = 90)	Frequency (f)	Percentage (%)
Knowledge about causes of arthralgia:		
Cannot say specifically	28	31.1
Other causes (e.g., fever and too much walking)	21	23.4
Old age	17	18/9
Excessive stress while travelling	13	14.4
Black blood	9	10.0
Too much weight	2	2.2
Family history of joint pain:		
Yes	24	26.7
No	34	37.8
Don't know	32	35.5
Location of Joint pains		
Knee and hip	21	23.3
Knee and ankle	17	18.9
Knee joint only	16	17.8
Hip and shoulder	10	11.1
Spine	10	11.1
Right shoulder joint	6	6.7
Ankle	4	4.4
Knee and shoulder	3	3.3
Limbs and right elbow	2	2.2
Foot	1	1.1
How respondents managed their arthralgia		
Non steroidal anti-inflammatory drugs (NSAID)	44	48.9
No drugs	20	22.2
Herbs and balms	16	17.8
Analgin/Novalgin	10	11.1
Complications suffered due to joint pains		
Loss of time off work	42	46.6
Nil	41	45.6
Others	7	7.8
Respondents felt that arthritis club should be inaugurated		
Yes	39	43.3
No	18	20.0
Don't know	33	36.7

Table 3: Findings from physical examinations and investigations

Variables	Frequency	%
*Abnormalities (multiple response)		
Abnormality found in the knee joint (n = 450)	197	43.8
Abnormality found in the hip joint (n = 450)	84	18.7
Abnormality found in the ankle joint (n = 450)	70	15.6
Abnormality found in the shoulder joint (n = 450)	41	9.1
Abnormality found in the hand (n = 450)	18	4.0
Abnormality found in the spinal joint (n = 450)	17	3.8
Abnormality found in the elbow joint (n = 450)	17	3.8
Abnormality found in the foot (n = 450)	7	1.6
Abnormality found in the wrist joint (n = 450)	6	1.3
Rash (n = 90)	6	6.7
Anemia	5	5.6
Fever (n = 90)	4	4.4
Result of X-ray in respondents (n = 30)		
Osteoarthritis of knee joint	26	86.7
Non-specific findings	4	13.3
Result of blood/serology tests (n = 8)		
Rh Factor positive in high-dilution titer	1	33.3
FBC/swab for m/c/s	1	33.3
Genotype and biopsy	1	33.3

*Physical examination of affected joints involves looking out for each of the following: deformity, swelling, tenderness, warmth, and crepitus, with the option of multiple responses

to have statistically significant association with joint pain, while there was no positive relationship

between joint pain and professional status or with educational status.

Table 4: Selected differentials in the profile of respondents with arthralgia

Variables	Joint Pains		X ²	P-value
	Yes	No		
Age group (years):				
<40	14	17	11.08	0.001
40+	47	12		(S)
Sex:				
Male	20	16	4.10	0.04
Female	41	13		(S)
Occupational Group:				
Student/Civil servant	13	10	1.79	0.18
Farmer/artisan/trader	48	19		(NS)
Educational Group:				
Nursery/Primary	28	19	3.03	0.08
Secondary and above	33	10		(NS)

S = Significant ($P < 0.05$), NS = Not significant

Discussion

Joint pain (arthralgia) causes great discomfort to the sufferer and it interferes with daily living and lifestyle. The common presentation of arthritis in this study agrees with that in another study^[13] and supports it as a significant public health challenge. However, majority of the cases in this study were aged ≥ 30 years, with the highest incidence being among those aged 50-59 years, during which time degenerative joint disease is very common. This age grouping of occurrence also agreed with that reported in another study.^[10] Females were more affected, and this was statistically significant ($P < 0.05$). The fact that females live longer than males, are more resistant to illnesses, and easily express their illnesses could explain why females were more affected.^[14] About one-third of the respondents had no formal education and therefore it was not surprising that as many as one-tenth of the respondents believed that black blood was responsible for their joint pains. It is likely due to superstition, which unfortunately has come to stay in our culture. The knee joint was the most commonly affected joint in about two-third of the cases, and this agrees with earlier survey confirmed by X-rays.^[15]

In this study, only one case had positive rheumatoid factor in high-dilution titer. This suggests that arthralgia secondary to rheumatoid arthritis is very rare in this environment and thus agrees with the findings in the Ibadan study, where it was found that patients presenting with rheumatoid arthritis were less commonly rheumatoid factor positive,^[16] although some other medical conditions (such as parasitic infections) that could cause lower prevalence and modulation of auto-immune diseases in Africans were not excluded in this study. It is also noted that no cases of gouty arthralgia or psoriatic arthralgia or Reiter's disease or tuberculosis arthritis among others were encountered. This

pattern of arthralgia should be borne in mind when considering differential diagnosis of joint pain in this environment. That patients could easily buy drugs over the counter without prescription could explain why almost half of them resorted to self-management with NSAID. Availability of enteric-coated NSAID is recommended in managing arthralgia. Systemic reviews of NSAIDs in rheumatoid arthritis continue to demonstrate that NSAIDs reduces short-term pain in OA in comparison with placebos, but there is limited evidence of benefit over simple analgesics.^[17] There was no statistically significant association between joint pain and respondents' education or occupation. This would tend to support the belief that arthralgia is genetically determined or else familial. As a matter of fact, genetic predisposition may be a factor in OA.^[18]

About one-fifth of the respondents also resorted to traditional herbs and balms for the management. The improvement they might have experienced might be psychological in that determination to get well rests in the mind, and the general belief in the efficiency of these herbs translates into improvement. Also, it is possible that some of these herbs might have accidentally contained anti-prostaglandins.^[19] The knee joint was the most commonly affected joint in 57 (63.3%) of the cases in this study. Despite preventive, non-pharmacological treatment, and drug therapy, some patients with OA became disabled, as seen in this study. It has been documented that for patients with progressive joint destruction, modern surgical techniques with hip and knee replacements provide enormous relief in terms of pain alleviation and reduction of disability.^[20]

In this study, clinical anaemia was discovered in 5 (5.6%) cases and fever in 4 (4.4%) of the cases. Some authors discovered that few patients with chronic joint pain do suffer from anemia, possibly on account of unbalanced diet or loss of appetite from nagging pain.^[21] In addition, only 2 (2.2%) attributed their arthralgia to too much weight. This underscores the importance of obesity as a risk factor for development and progression of knee OA in particular, and it is relevant that weight reduction can significantly lessen pain and disability.^[22] Given the increasing prevalence of obesity around the world, obesity remains an important consideration in OA prevention and management.

Conclusions

This study concluded that arthralgia of the knee joint was most common in the studied area, followed by that of the hip and the ankle. Degenerative joint disease predominated, whereas autoimmune disease causing joint pain was rare. Since about half of the

respondents used NSAID, therefore the use of enteric-coated NSAID tablets would go a long way to minimize the unwanted side effects of NSAID, notably peptic ulceration and erosion.

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