Osteoarthritis Prescribing Habits in the Western Region of Saudi Arabia

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Abstract

Objective: Osteoarthritis prescribing habits in Western Region of KSA and whether they match the guidelines or not.
Methods: Qualitative using structured questionnaire via face to face interviews, the study included 100 doctors interfering with OA management. Interviews were conducted in Jeddah & Mecca Hospitals between July and December 2012.

Results: 71% of doctors mentioned that they depend on their personal experience and don't follow International Guidelines (p value < 0.05).
All doctors use both Non-pharmacological and Pharmacological measures in the treatment of OA. Non-pharmacological measures are weight reduction (96%), patient's education (74%), exercise (73%), heat / ice application (39%) and rest (31%).

81% of doctors mentioned that they start treatment with mono-therapy in the form of NSAIDs (36 – 44.44%) which is not matching the guidelines, followed by Paracetamol (32– 39.51%) and Celecoxib (10– 12.35%).
14% mentioned that they start treatment with combined therapy. The most common combination is Glucosamine + Diclophenac/ Celecoxib (4-28.57%) followed by Paracetamol + NSAIDs (3 - 21.43%), Ibuprofen/ Diclophenac + Celecoxib (3-21.43%) and Paracetamol + Celecoxib (2 - 14.29%).

Conclusions: Non-pharmacological measures recommended by doctors are weight Reduction, patient education, physiotherapy, exercise, heat application, and ice therapy, which match the international guidelines. Pharmacological measures in form of NSAIDs whether selective or non-selective are the 1st line choice for doctors unlike the international guidelines that recommend Paracetamol as 1st line.

Keywords: Doctors, Treatment, Knee, Recommended and International Guidelines.

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Introduction

Osteoarthritis (OA) is the most common chronic degenerative musculoskeletal joint disorder [4] characterized by degeneration of cartilage and its underlying bone within a joint as well as bony overgrowth. The breakdown of these tissues eventually leads to pain and joint

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stiffness; causing a decreased joint range of motion (ROM), peri-articular muscle weakness and atrophy, joint effusion and swelling, and impaired quality of life afflicting an increasingly older population[1,4,5]. OA is characterized by structural changes of the entire joint. The typical clinical and radiological signs are partial to full thickness loss of articular cartilage, sub-chondral bone sclerosis, osteophyte formation, and thickening of the capsule[1]. The joints most commonly affected are the knees, hips, and those in the hands and spine. The specific causes of osteoarthritis are unknown, but are believed to be a result of both mechanical and molecular events in the affected joint. Pathological joint impact and shear forces as well as post-traumatic risk factors cause early cartilage degeneration and "joint aging". To date, the pathogenesis of the disease is not entirely understood [1].

The prevalence of OA increases with age, typically manifesting after the sixth decade of life[2] that up to 40% of people aged over 70 years are being affected[3] and women appear to be more susceptible than men [2]. As there is no curative measure for OA, its treatment ranges from non-pharmacological to pharmacological measures as well as surgical interventions. The pharmacological measures are going to be discussed in details later as it is the objective of the study.

The study aims to know the insight of doctors prescribing habits in the management of OA in Western Region of Saudi Arabia (Jeddah and Mecca cities) and whether they match the guidelines or not. Some doctors follow international guidelines and some others have their own protocol.

Materials and Methods

A qualitative study using a designed structured questionnaire was conducted upon a sample of 100 doctors through face-to-face interviews. Inclusion criteria includes that the respondent doctors should interfere with the diagnosis and/or treatment of OA. Exclusion criteria are doctors who are practicing outside the western region of Saudi Arabia.

The study is following to principles of Helsinki Declaration.

All respondents were randomly selected from the target population. All of them were volunteers.

A sample size of 100 doctors would give a confidence level of 95% and reliability (margin of error) of 5.85% considering population size 5000 doctors.

Continuous variables were summarized using the number of valid observations, mean, standard deviation, median, minimum, and maximum. Categorical data variables were coded and were summarized using frequency and percentage.

Chi-squire test was used to calculate *p*-value in case of categorical data variables and t-student test was used to calculate *p*-value in case of numerical data. *P*-value less than 0.05 is considered to be statistical significant.

Interviews were carried out in Jeddah & Mecca health care (6 hospitals and 10 primary care centers) between July 2012 and December 2012; interviews were conducted by final year medical students, the time of the interview was 15-20 min, interview transcripts were done by the corresponding author, and then statistical analysis was performed on the overall sample.

Doctors were asked about Guidelines as

EULAR, OARSI, NICE, AAOS or ACR guidelines.

The doctor's experience and qualifications ranged between 1 year of experience to 40 years with an average of 12.47 +1.02 years and their qualification ranged from Bachelor of Medicine and Bachelor of Surgery (MBBS), Medicine Doctor (MD) and Fellowship of the Royal College of Surgeons (FRCS).

All doctors were seeking certain elements in the history of the disease. Involvement of other joints, stiffness duration, and effect of the disease on the quality of life, drugs previously taken, occupational history, family history and the history of regular exercises were the elements asked about in order of their importance to the doctors (Table 1).

Table 1. Points that doctors would like to ask in Patient's History

Points to ask in patient history	Number	%
Base	100	
Other Involved Joints	89	89%
Duration of Stiffness	88	88%
Effect on Quality of life	76	76%
Previous Drugs	67	67%
Occupational History	67	67%
Family History	60	60%
History of Regular Exercise	57	57%

BMI was documented by 83% (83 Dr.) as one of the parameters in OA cases. Doctors request X-ray (93%), ESR (76%), Uric Acid (63%), CRP (40%), Ca/Phosphate level (39%), CBC (32%) and Creatinine (28%) as seen in the table below.

Table 2. Ordered Tests

Overall Tests	Number	%
Base	100	
X-ray	93	93%
ESR	76	76%
Uric Acid	63	63%
CRP	40	40%
Ca / Phosphate level	39	39%
CBC	32	32%
Creatinine	28	28%
LFT	16	16%
Others	2	2%
None	1	1%

Results

71% of the doctors (71 Dr.) mentioned that they don't follow any guidelines and follow their own experience and protocol whereas 29% of doctors (29 Dr.) mentioned that they follow international guidelines as EULAR, OARSI, NICE, AAOS or ACR guidelines. Results are significant (*p* value = 0.000 ***).
All doctors use both Non-pharmacological and Pharmacological measures in the treatment of OA.

Table 3 shows that doctors use conservative treatment in their regimen, such as weight reduction, patient education, physiotherapy, thermal therapy, and rest, as illustrated in the table below.

Table 3. Conservative treatment

Conservative Treatment	Number	%
Base	100	
Weight Reduction	96	96%
Patient Education about the Disease	74	74%
Physiotherapy / Exercise	73	73%
Heat / Ice	39	39%
Rest	31	31%

The table below shows the percentage of doctors using monotherapy or combined.

Table 4. Mono Vs Combined pharmaceutical therapy in their 1st line of treatment

First line of treatment	Number	%
Base	100	
Mono-therapy	81	85.3%
Combined therapy	14	14.7%
Total	95	100%

Table 5 shows the frequency of mono-therapy used as a 1st line.

Table 5. Mono-therapy treatments used as a 1st line

Mono-therapy as a 1st line	Number	%
Base	81	
Ibuprofen / Diclophenac	36	44.44%
Paracetamol/ Acetaminophen	32	39.51%
Celecoxib /Meloxicam	10	12.35%
Etoricoxib	2	2.47%
Intra-articular Medication (Chondroitin Sulphate)	1	1.23%
Total	81	100%

Table 6 shows the frequency combined therapy used as a 1st line.

Table 6. Combination therapy as a 1st line

Combination therapy as a 1st line	Number	%
Base	14	
Glucosamine + Diclophenac/Celecoxib/Meloxicam	4	28.57%
Paracetamol / Acetaminophen + Ibuprofen/Diclophenac	3	21.43%
Ibuprofen/Diclophenac + Celecoxib/Meloxicam	3	21.43%
Paracetamol / Acetaminophen + Celecoxib/Meloxicam	2	14.29%
Intra-articular (Steroid and Hyaluronic Acid) + Paracetamol	2	14.29%
Total	14	100%

19% (19 Dr.) of the doctors do not use glucosamine at any level while the rest use it at a certain point in the treatment. 31% (31 Dr.) use it with mild/ early knee OA, 38% (38 Dr.) use it in moderate knee OA, while 22% (22 Dr.) use it in severe / advanced cases of OA.

In case of hyaluronic acid; 20% (20 Dr.) do not consider using it, while 19% (19 Dr.) consider it in mild / early knee OA, 35% (35 Dr.) in Moderate cases and 20% (20 Dr.) use it in severe / advanced knee OA.

Although Intra-articular Hyaluronic Acid is considered more in moderate cases, however; chondroitin sulphate, is more prescribed in severe / advanced cases of knee OA with a percentage of 28% (28 Dr.), while 25% (25 Dr.) in moderate cases and 20% (20 Dr.) in mild / early knee OA. 29% (29 Dr.) don't consider chondroitin sulphate in their treatment.

Arthroscopic Lavage is a surgical treatment that was recommended by 50% (50 Dr.) and Joint Aspiration is done by 41% (41 Dr.), out of which 80% (33 Dr.) do joint aspiration in patients with severe knee effusion, 31.71% (13 Dr.) do it in moderate knee effusion and only 9.76% (4 Dr.) in mild knee effusion.

Discussion

Many reviews, randomized control trials and evaluations have been undergone and published to come up with the best guidelines for the treatment of OA.

The aim of treatment of OA is to reduce joint pain and stiffness, maintain and improve joint mobility, reduce physical disability and handicap, improve health-related quality of life, limit the progression of joint damage, and educate patients about the nature of the disorder and its management [6].

Non-Pharmacological Treatment

Patient's education about the disease

Self-management, education and provision of information about OA, its treatment objectives, change in lifestyle, exercise, weight reduction and other measures [6] are widely promulgated as core recommendations for the treatment of OA in the hip and knee in recent guidelines from National Institute of Health and Clinical Excellence (NICE)[7] and the American Academy of Orthopedic Surgeons (AAOS) [8] as well as in the OARSI guidelines[6] and in many previously published guidelines[9] . In this study 74% of the doctors have recommended "patient education about the disease".

Exercise

Non-pharmacological, non-surgical interventions, such as the treatments offered by physiotherapists, are recommended as a first line of treatment for hip and knee osteoarthritis[10].

Decreased pain and increased muscle function have been reported for both strengthening and aerobic exercises. However, these effects do not persist if exercise programs are discontinued. Thus, the motivation of the patient to start and continuously practice exercise is of crucial importance [1].

In our study 57% of doctors ask their patients about their history of regular exercise, while 73% recommend exercise / physiotherapy as a measure in their treatment.

Weight Reduction

Weight reduction and the maintenance of their weight at a lower level is still recommended by expertise[11]. Weight reduction was the main non-pharmacological measure recommended by doctors 96% of our sample.

Heat/ Ice

Supporting evidence of heat/Ice physiotherapy is very limited[6]. In our study, 39% of the doctors recommended thermotherapy as a treatment measure.

Pharmacological Treatment

Acetaminophen (Paracetamol or APAP) Versus NSAID

Acetaminophen, is currently an essential medication used as an analgesic in the OARSI guidelines [6], NICE [7] and AAOS [8] guidelines as well as other guidelines for the management of hip or knee OA [9]. The American College of Rheumatology, Osteoarthritis Research Society International, European League Against Rheumatism (EULAR), and the United Kingdom's National Institute for

Health and Clinical Excellence, recommending PAPA as the first choice for mild-to-moderate OA-related pain because of its safety and effectiveness[6,12-14].

Despite all international guidelines favoring Paracetamol as a first line treatment there are studies in which NSAID was preferred by patients and recommended by doctors as the case of our study.[5]

In our study, NSAID was the first line choice as mentioned by 44.44% (36 Dr.), followed by paracetamol mentioned by 39.51% (32 Dr.), and then Celecoxib / Meloxicam 12.35% (10 Dr.).

Intra-articular (IA) Corticosteroids

Intra-articular steroid was recommended only by one doctor and it was in combination with both paracetamol and diclofenac. A long-term of IA corticosteroid injections showed that their efficacy for relieving of pain continued after 1 year but this was not demonstrable after 2 years. IA steroid injections had no significant effect on physical function or stiffness[15]. Intra-articular injections with corticosteroids should be considered particularly when patients have moderate to severe pain not responding satisfactorily to oral analgesic / anti-inflammatory agents and in patients with symptomatic knee OA with effusions or other physical signs of local inflammation [6].

Intra-articular Hyaluronic Acid

Intra-articular hyaluronic acid is widely used, as a useful therapeutic modality for treating patients with OA knee as a visco-supplement or pharmaceutical[9]. In our study, intra-articular hyaluronic acid was recommended only twice in this study, once as a mono-therapy and once as a combination therapy with paracetamol. 20% of the doctors didn't recommend it at any stage of the disease, while 35% considered it in moderate OA, 29% in severe advanced cases and 19% in mild early cases. However, AAOS clinical practice guideline, doesn't recommend its use for symptomatic OA. [8]

Glucosamine

The OARSI recommended the use of glucosamine products, but we couldn't find any data, in the sources we have looked in, concerning when is the most appropriate time and case in which it should be used. In our study, Glucosamine was only recommended as combination therapy by 4 doctors out of 14 (28.57%). It was considered by 38% of the doctors in the treatment of moderate cases of OA, 31% in mild cases and 22% in severe cases of OA.

Chondroitin Sulphate

The OARSI (Osteoarthritis Research Society International) recommended using chondroitin sulphate as the second-most-effective treatment for moderate cases of OA.[6] EULAR guideline supported the usefulness of chondroitin sulfate in the management of knee osteoarthritis and grants the highest level of evidence.[14] However in AAOS, couldn't recommend the use of Chondroitin sulfate. [8]

In our study chondroitin sulphate was only prescribed as mono-therapy by one doctor (1.23%). It was more prescribed in severe / advanced cases of knee OA with a percentage of 28% of doctors, while 25% of doctors in moderate cases and 20% of doctors in mild / early knee OA. 29% of the doctors don't consider chondroitin sulphate in their treatment.

Arthroscopic Lavage

Joint lavage is currently recommended as useful treatment for patients with knee OA in OARSI guidelines where this modality of therapy was considered [9]. The best outcome as measured by the WOMAC score was seen in patients with a high concentration of crystals and with involvement of more than one compartment. In our study, Arthroscopic Lavage was recommended by 50% of the doctors. However, it wasn't suggested by the AAOS. [8]

For further studies in the future, this study can be done on a wider scale of doctors and in more cities.

Conclusion

Non-pharmacological, pharmacological and surgical interventions are the main lines for managing OA.

Non-pharmacological measures are recommended by doctors in Western Region of Saudi Arabia (Jeddah and Mecca cities) in the form of weight reduction, patient education, physiotherapy / exercise and heat / ice therapy, which are matching the International guidelines.

Pharmacological measures in the form of NSAIDs whether selective or non-selective are the 1st line of choice for doctors in Western Region of Saudi Arabia, unlike the international guidelines that recommend Paracetamol as a first line treatment.

Doctors in Western Region of Saudi Arabia, as well as the international guidelines reserve surgical intervention to resistant and severe cases.

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عادات الوصفات الطبية لخشونة المفاصل في المنطقة الغربية في المملكة العربية السعودية

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الملخص

الأهداف: التعرف على عادات الوصفات للأطباء في المنطقة الغربية من المملكة العربية السعودية (جدة ومكة المكرمة) وما إذا كانت مطابقة للمبادئ التوجيهية الدوليه أم لا.

التصميم: دراسة نوعية باستخدام تصميم استبيان انجز من خلال مقابلات وجها لوجه.

الطريقة: هذه دراسة نوعية تتضمن 100 طبيب يتداخلوا في علاج خشونة المفاصل .و قد أجريت المقابلات في مستشفيات جدة ومكة المكرمة بين يوليو 2012 وديسمبر 2012

النتائج: 71% من الأطباء (71 طبيب) يتبعوا الخبره الشخصيه و لا يتبعوا المبادئ التوجيهية الدولية($p\ value < 0.05$) فى متابعه المرضى.

يستخدم جميع الأطباء التدابير غير الدوائية والدوائية على حد سواء في علاج خشونة المفاصل. وكانت التدابير غير الدوائية هى تخفيض الوزن (96% من الاطباء)، تعليم المريض (74%) ، التمارين الرياضيه (73%) ، وتطبيق الحرارة / الثلج (39%) و الراحه (31%) 81% من الاطباء يبدأون العلاج بدواء واحد فى صوره مضادات الالتهاب الغير كورتيزونيه (36 – 44.44%) و هى لا تطابق مبادئ التوجيهية الدولية ثم الباراسيتامول (32 – 39.51%) و السيليكوكسيب (10 – 12.35%). مقابل 14% من الاطباء يستخدمون علاجات متنوعه . اكثر المجموعات شيوعا هى الجلوكوزامين و الديكلوفيناك/ السيليكوكسيب (4 – 28.57 %) يليها الباراسيتامول و مضادات الالتهاب الغير كورتيزونيه (3 – 21.43%) ثم الباراسيتامول و السيليكوكسيب (2– 14.29%).

الاستنتاجات: ينصح بالتدابير غير الدوائية من قبل الأطباء في المنطقة الغربية من المملكة العربية السعودية (مدن جدة ومكة المكرمة) في شكل تخفيض الوزن، تعليم المريض، العلاج الطبيعي / التمارين الرياضيه والعلاج الحراري /الثلج والتي تطابق المبادئ التوجيهية الدولية. التدابير الدوائية في شكل مضادات الالتهاب الغير كورتيزونيه سواء انتقائية أو غير انتقائية هي اختيار الأطباء كخط أول للعلاج على عكس المبادئ التوجيهية الدولية التي توصي بالباراسيتامول كخط أول للعلاج.

الكلمات الدالة: الأطباء، العلاج، هشاشة العظام.