حكومة دبي
GOVERNMENT OF DUBAI

هيئة الصحة بدبي
DUBAI HEALTH AUTHORITY

Dubai Standards in Healthcare

Dubai Standards of care- Rheumatoid arthritis

Recommendations by the Dubai Arthritis Task Force

PREFACE

Rheumatic diseases are on the rise in the region, with a number of cases seen every day in daily practice. In Dubai, rheumatic disease is treated by different strategies. The following guidelines were established in order to create a unified approach to the management of rheumatic disease. These guidelines were developed to act as a guide for clinical practice, based on the best available evidence at the time of development. Adherence to these guidelines may not necessarily guarantee the best outcome in every case. Every health care provider is responsible for the management of his or her unique patient based on the clinical picture presented by the patient and the management options available locally.

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"Dubai Standards of care- Rheumatoid arthritis"

These guidelines were established in order to achieve effective management in Rheumatoid arthritis in the Emirate of Dubai. In addition to that, these guidelines aim to improve evidence based approaches especially medication prescribing. These guidelines were prepared and approved by the Dubai Arthritis Task Force .

The Members of the committee as follow:

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DUBAI STANDARDS OF CARE-RHEUMATOID ARTHRTIS

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Introduction

In the recent years, there has been an increase in the knowledge related to the pathogenesis of rheumatoid arthritis (RA).[1] Many changes have been witnessed in the treatment and management of RA. However, such insights may have not yet been implemented in clinical practice. RA patients suffer from physical disability and joint damage majorly affecting their quality of life. The early administration of disease-modifying antirheumatic drugs (DMARDs) has led to less joint damage and improved physical function as compared to delayed start. Proper and early assessment of RA by using the core set variables results in early control of disease activity. The advent of biologics has led to attainment of unprecedented outcomes due to the disease. Today, remission is achievable which can prevent progressive joint damage.[2]

According to the minimal data available, there is a significant burden of RA in the Middle East region and in Africa. Most importantly, the misconception that RA is uncommon in the two regions has led to a delay between symptom onset, referral, diagnosis and introduction of DMARDs. Other reasons for the burden of RA are the lack of availability of data on local epidemiology and health economics, perception of people that RA has less priority compared to other more prevalent conditions, and lack of evidence based region specific management approaches.[1]

In order to implement a strategic therapeutic approach for individual case and to improve patient outcomes in RA, the existing recommendations in the treatment were reviewed by experts in the area of rheumatology. This was crucial to meet the unmet requirements of RA affected or high-risk populations in Dubai. The overall objective of the task force was to obtain consensus on new or modified set of recommendations aimed at improving the treatment and management of RA in clinical practice.

Methods

In order to implement changes in the existing guidelines associated with the treatment of rheumatoid arthritis (RA), a closed session meeting involving expert rheumatologists was organized. This session was led by members of the scientific committee of the Dubai Arthritis Task Force and the General Assembly of Dubai Rheumatologists, on November 20, 2015. The topics covered in the meeting included Guidelines in the treatment of RA, EULAR recommendations, suggestions in context to the treatment guideline i) Clinical monitoring ii) DMARDs monitoring iii) Minimal required investigations for TNF inhibitors iv) BSR and BPHR rheumatoid arthritis guidelines on safety of anti-TNF therapies v) Standardizing the minimal required investigations other than DMARDS monitoring vi) Biosimilars vii) Ultrasound use in clinical practice viii) Prescribing medications ix) Referral process between different providers- electronic RA patient - baseline visit form and follow-up visit form, and x) Patient education.

Twenty-two questions related to the specific topics were raised and responded via an electronic voting system. The Task Force Panel was provided with the evidence related to the questionnaire, and were asked to provide their expertise and clinical judgment to rate the relevance of using a particular recommendation in the context of each clinical scenarios. A consensus was achieved for each of the questions. 75% of the agreement on voting questions was treated as consensus agreement and 10% reservation was taken for discussion. The recommendations or suggestions by the experts and task force members were amended to the existing guidelines. The modified versions of all the recommendations were resent through email for their final comments.

Results

PubMed and literature search formed the basis of guidelines and recommendations followed so far in the treatment and management of RA. Based on these expert opinions, 21 questions were raised and changes in the recommendations were suggested. Mentioned below are the existing guidelines along with relevant and associated modifications as per the Task Force Panel and General Assembly of Dubai Rheumatologists.

1) Guidelines in the treatment of RA

EULAR[3], NICE[4] and American College of Rheumatology (ACR)[5] guidelines for the treatment of RA were presented to the Task Force Panel and General Assembly of Dubai Rheumatologists. The first question to the panel was related to the 2013 EULAR recommendation on management of RA [3] and if it should be accepted routinely in their daily practice.

The final consensus (Supplementary-Table 1) was to accept the recommendation with a few modifications. The panel recommended the consideration of 2015 Update of American College of Rheumatology Guideline especially the recommendations for symptomatic patients with *early* RA and established RA.[5]

The modifications suggested by the panel were as follows:

-The target should be achieved within 6 months

-Target to be achieved will be 6 months from the start of the symptoms provided the patients have failed 3 months trial of methotrexate in optimum tolerated dose

-In cases of intolerance to methotrexate or if the patients are contraindicated to receive methotrexate, other DMARDs will fulfill this suggestion

-Acceptance of 2015 EULAR updates as well

2) Clinical monitoring

The panel was presented with the "core" set of variables recommended by the European League Against Rheumatism (EULAR), the American College of Rheumatology (ACR) and the World Health Organization/International League Against

Rheumatism (WHO/ILAR) that could be used to assess the disease activity in RA. The currently available single number providing composite disease activity indices are:

-Disease Activity Score (DAS)[6,7]

-DAS using 28 joint counts (DAS- 28)[6,8]

-Simplified Disease Activity Index (SDAI)[6,9]

-Clinical Disease Activity Index (CDAI)[6,10]

Based on these monitoring parameters, three questions were raised to understand the panel's suggestion on the use of DAS-28, CDAI and SDAI as monitoring tools in daily practice. The final consensus was to proceed with the use of these tools every 3 months to understand patient's condition in RA (Supplementary-Table 2, 3, 4).

The Dubai Arthritis Task Force and the General Assembly of Dubai suggested the following points on the acceptance of 3 monitoring tools:

-DAS -28 may not be applicable in undifferentiated inflammatory arthritis

-The gold standard is to undertake DAS28 once every 3 months. However, during the active phase it can be done once every 4-8 weeks.

3) DMARDS monitoring

The task force team was presented with the BSR/BHPR guideline for disease-modifying anti-rheumatic drugs (DMARD) therapy compiled by the British Association of Dermatologists.[11]

The monitoring of tests such as CBC, LFTs, and serum creatinine along with their frequency were discussed in relation to methotrexate, sulfasalazine, hydroxychloroquine, leflunomide, azathioprine, cyclosporine, and TNF inhibitors.

It was discussed whether to perform these tests every 8 weeks initially and then every 3 months after reaching the target dose. Based on the 19 votes received (Supplementary-Table 5), the task force team did not agree to performing the tests every 8 weeks initially and then every 3 months after reaching the target dose. It was decided that this must be negotiated with the insurance company, and assessing the cost-effectiveness of performing the tests earlier is critical. Apart from this, the American Academy of Ophthalmology recommendations on screening for

hydroxychloroquine (HCQ) retinopathy 2016[12] was asked to be included in the modified guidelines that will be followed for future reference.

4) Minimal required investigations for TNF inhibitors

Antitumor necrosis factor (anti-TNF) drugs have proved to be important in treatment of RA. However when it comes to anti-TNF therapy, opportunistic infections have become a major safety concern. It is important that physicians utilizing these agents understand the increased risks of infection associated with these agents. Literature suggests that there is an increased risk of bacterial, fungal, viral, and parasitic infections with anti-TNF therapy. Awareness of the therapeutic potential and associated adverse events is necessary for maximizing therapeutic benefits while minimizing adverse effects from anti-TNF treatments. Whenever possible, close monitoring of early signs of infection is a mandate. In case of serious infections, until the infection has been identified and properly treated, it has been recommended to withdraw anti-TNF therapy.[13]An increased risk of infections, including tuberculosis (TB) and fungal infections has been a significant side effect of anti-TNF therapy. As some of these may be severe, patients must be tested for TB before starting anti-TNF therapy. A skin test or blood test can be performed. Hepatitis B virus screening should also be done as unrecognized hepatitis B infection can worsen during the course of treatment. [13]

Screening tests for latent TB namely quantiferon and T-spot tests have been developed in the recent years. The role of these tests have not been fully validated in the RA population and at the same time they are not widely available to clinicians.[14] The BSR and BHPR guidelines recommend for close monitoring of serum amino transaminases as well as HBV DNA load during therapy in patients with HBV treated with anti-TNF therapy.[15] Before initiating anti-TNF therapy, prophylactic anti-TB therapy should be given to RA patients with evidence of potential latent disease especially when there has been previous history of TB or abnormal chest X-ray.[15]

The panel was presented with three questions regarding the recommendation of using T-spot test, Chest –X ray and Hepatitis B virus screening in all RA patients starting on biologics. Overall, 19 votes were obtained for each question (Supplementary-Table 6, 7, 8) and the final consensus was to proceed with the use of all the three tests in patients starting on biologics. The task force team suggested to include pre-methotrexate screening and leflunomide screening tests such as hepatitis serology,

chest X-ray; quantiferon as well as Hepatitis C for TNF screening whenever indicated. This will be based on patient's current symptoms, past medical history, or supportive laboratory results.

5) BSR and BPHR rheumatoid arthritis guidelines on safety of anti-TNF therapies

The task force and the General Assembly was presented with the BSR and BPHR rheumatoid arthritis guidelines on safety of anti-TNF therapies.[16] The agreement of the task force and assembly on the above recommendations was asked. Based on the 19 votes received (Supplementary-Table 9), the final consensus was to agree the recommendation.

Suggestions by the task force team in context to BSR and BHPR rheumatoid arthritis guidelines on safety of anti-TNF therapies were as follows:

-To avoid medico-legal issues, the rheumatologists must inform patients about demyelination (can be done at discretion of each service provider).

-The risks should be printed and provided to rheumatologists and also shared with patients for them to be aware of the same (can be done at discretion of each service provider).

-Some clinics follow the practice wherein patients have to go through the document and their consent/signature is taken of the risks involved in therapy.

-To formally notify the patient at risk, through handouts or any other method, at the discretion of each service provider

6) Standardize the minimal required investigations other than DMARDS monitoring

The panel was presented with the EULAR evidence-based recommendations for cardiovascular risk management in patients with rheumatoid arthritis and other forms of inflammatory arthritis.[17] The American College of Rheumatology 2010 Recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis were discussed.[18] Based on the voting and the final consensus (Supplementary-Table 10, 11, 12, 13, 14), the task force team accepted to proceed with:

-The recommendation of RA patients having an annual CDV risk assessment

-The American College of Rheumatology 2010 Recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis on

-recommended monitoring of patients receiving prevalent glucocorticoid therapy for more than 3 months

-considering serial bone mineral density testing once every 18 months

-considering annual Serum 25-hydroxyvitamin D measurement every 3 months until target vitamin levels have been achieved (100-175nmol/L)

-considering annual height measurement

7) Justification of other investigation

The Arthritis Task Force team discussed the justification of conducting investigations not covered incertain situations such as RA with lung pathology. According to them, each case will be justified by its own merits depending on the organ affected in each case. Based on the voting, the final consensus was to agree to the recommendation proposed by Task force (Supplementary-Table 15).

8) Biosimilars

Biosimilar medicine is a biological medicine manufactured to be almost similar to the already existing licensed 'reference' biological medicine. There are no meaningful differences between the two in terms of quality, safety or efficacy. The first biosimilar for rheumatoid arthritis was introduced in the UK in February 2015. The advantages of biosimilars are that they increase the patient accessibility to variety of cost effective treatments to manage their conditions. In spite of these benefits, there was a degree of uncertainty. BSR recommendations were thus designed to address the uncertainty created by the introduction of biosimilars (biological medicines). These recommendations were issued after consulting groups such NRAS, NICE, and ABPI.[19]

The recommendations include[19]:

-Prescription by brand name

-Prescription for clinical reasons

-Substitution only with the consent of the prescribing clinician

-Decisions made in partnership with the patients

-Registration with the BSR Biologic Registers

-The need for awareness rising on biosimilars

-Biosimilars should undergo robust technology appraisals

-The need for better information sharing across the care pathway

-Local tenders involving biosimilars should seek to source a range of products

The task force team was interested in only the first 6 recommendations. The panel suggested that the public should be informed and educated about biosimilars when it is introduced (Supplementary-Table 17). Patients should be educated about the safety, efficacy and costs of biosimilars for them to make informed decisions and so that they are not misled.

9) Ultrasound use in clinical practice

The ACR/EULAR has recently included the use of magnetic resonance imaging (MRI) and ultrasonography (US) as diagnostic tools apart from using clinical and biological parameters to diagnose RA. The objectives of the recent medications have been to improve the quality of life, control symptoms and to improve social participation. There is a need to adjust treatment therapy by considering disease activity. The response criteria of ACR were not used for clinical practices but for clinical trials. Secondly, DAS, CDAI and SADI were used for continuous monitoring of patients. It was found that 30% patients fulfilling the DAS, ACR and EULAR remission criteria continued to have progressive joint damage. This suggested the unreliable nature of clinical criteria. Data advises that US is effective in the early diagnosis and monitoring of disease activity, for treatment decision guidance and also in follow up of the RA remission. Studies have been carried out to understand the use of US in order to define remission.[20,21] It was found that most of the patients satisfying the definition of clinical remission presented US synovitis.[20,22-26] The persistence of US synovitis was seen in more than one-third of all RA patients in clinical remission as per either the DAS28 definition (140 patients) or ACR/EULAR criteria (40 patients).[27] The ACR/EULAR provisional definitions of remission for clinical trials are of two types: Boolean-based and index-based. The Boolean-based definition involves the patient satisfying the criteria of TJC≤1, SJC≤1, CRP ≤1 mg/dl and the patient global assessment≤1 (on a 0-10 scale), at any time point. The index-based definition includes the patient having an SDAI≤3.3 at any time point.[28]

The Dubai Arthritis Task Force and the General Assembly of Rheumatologist agreed to put forth a protocol for the use of ultrasounds (Supplementary-Table 17). According to them, there is a need for minimal educational credibility/ certificate to carry out ultrasound and this should be the advanced training in EULAR and beyond, which will be reimbursed by insurance. However, due to educational bodies providing ultrasound training, this matter should be left to the Dubai clinical governance office to license rheumatologist for US after checking their credentials, logbook and other supporting documents.

10) Prescribing medication for RA

According to the Dubai Arthritis Task Force, if a certified, licensed rheumatologist prescribes a medication, the patient is not required to be seen by another non-specialized physician in another private hospital to prescribe the medication. As long as the rheumatologist is registered with DHA, the prescription for a particular patient should be dispensed by the pharmacist, and the prescribing physician will be held accountable for the prescription. This recommendation by members of the scientific committee of the Dubai Arthritis Task Force on prescribing medicines was accepted by the General Assembly of Dubai Rheumatologists (Supplementary-Table 18).

11) Referral process between different providers: electronic RA patient baseline visit form and follow-up visit form clinical governance dashboard

Rheumatic conditions require a multidisciplinary team approach. This team can include the rheumatologist, the rheumatology nurse and other medical specialists such as orthopedics, physiotherapists, nephrologists, hematologists and others. A multidisciplinary team approach followed by various healthcare professions play a pivotal role in the management of RA. Though the composition of this multidisciplinary team changes, emphasis is laid on the tasks required for patient care. The objective of this team remains the same i.e. minimizing the disease impact. The patient can often also be an active member of the team, to address and manage all aspects of care. Combined approach of all members of this team brings together the skills and knowledge of individual team members. This helps the assessment and management of disease, provided there is high level of communication and cooperation. A same referral form can be used for referring RA patients between providers from different specialty.[29]

Based on the referral process, 4 questions were put forth to the Task Force Panel and General Assembly of Dubai Rheumatologists related to the use of referral form, baseline visit form and follow up form in the daily practice (Supplementary-Table 19, 20, 21, 22). The panel agreed to this recommendation of including referral form (Figure 1), patient base line visit form (Figure 2) and follow up visit form (Figure 3) in daily practice. According to them, a rheumatologist or a nurse who is appropriately trained to enter data should fill patient baseline form.

Discussion

It is known that there is not much information available on RA among Arab populations in the Middle East. In a study by Badsha H, it was found that people in Dubai suffering from RA had a very active disease. In spite of this, most of them were not treated with DMARD. This result was in contrast to the results obtained in USA and Europe. Secondly, it was demonstrated that there was not much use of anti-tumour necrosis factor in these RA patients (2% vs 40% in the US). The study reports that inappropriate treatment is given to these RA patients, which according to the author could have major long-term consequences on joint damage and general health.[30]

In another study, the characteristics and treatments of consecutive RA patients who went to new musculoskeletal clinics in Dubai, United Arab Emirates (UAE) was described. The study population included 100 patients. Results were concluded based on personal characteristics such as age, gender, nationality and on the clinical parameters such as positive rheumatoid-factor positive; years since diagnosis, lag time between symptom onsets to diagnosis and lag time to first DMARD. Other clinical parameters included mean tender joint counts, mean swollen joint counts, mean patient's global assessment of disease activity, mean ESR, mean DAS28, and physician global assessments. Though UAE has a population that includes people from many races, it was found that there were no racial changes in disease characteristics. No significant differences were found in the disease characteristics. Majority of the patients had a very active disease with delayed diagnosis and were not being treated with DMARDs.[31]

Till date there have not been modifications in the existing recommendation for the treatment of RA which is specific for the Dubai population. This article has thus focused on the recommendations and suggestion made by the members of the scientific committee of the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists with regards to the existing recommendations for the diagnosis, treatment and management of RA. These recommendations give more importance to the target population and application of existing recommendation in clinical practices. To increase the weightage of each approved and modified recommendation, the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists decided the consensus based on voting. As per the results, recommendations on a few topics such

as clinical monitoring and DMARD monitoring need more clarity from the insurance agency to proceed with the suggestion of the task force.

Conclusion

The recommendations put forth by the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists is a step towards improving patient outcomes. It will be a systematic approach to help the target population to achieve early remission. It will also help to improve patient-clinician interaction and patient confidence. The new suggestions added by the task force and the Rheumatologists will help in educating patients about the safety, efficacy and costs of biosimilars which will help them to make informed decisions and will not be misled. These recommendations will guide the clinicians to satisfy their patients by treating to target. Further studies based on the implementation of these recommendations and the associated patient outcomes in RA will give a better understanding about their usefulness in the diagnosis, treatment and management of RA in the Dubai population.

References

1. El Zorkany B, AlWahshi H, Hammoudeh M et al. Suboptimal management of rheumatoid arthritis in the Middle East and Africa: could the EULAR recommendations be the start of a solution?. *Clinical Rheumatology*. 2012;32(2):151-159. doi:10.1007/s10067-012-2153-7.
2. Josef S et al. Treating rheumatoid arthritis to target: recommendations of an international task force. *Ann Rheum Dis*. 2010;69:631–637. doi:10.1136/ard.2009.123919.
3. Josef S et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2013 update. http://ard.bmj.com/content/73/3/492. Accessed August 19, 2016.
4. NICE website. Rheumatoid arthritis in adults: management. https://www.nice.org.uk/guidance/cg79/chapter/Recommendations#the-multidisciplinary-team. Accessed August 19, 2016.
5. Singh J, Saag K, Bridges S et al. 2015 American College of Rheumatology Guideline for the Treatment of Rheumatoid Arthritis. *Arthritis Care & Research*. DOI 10.1002/acr.22783.
6. Aletaha D, Smolen J. The Simplified Disease Activity Index (SDAI) and Clinical Disease Activity Index (CDAI) to monitor patients in standard clinical care. *Best Practice & Research Clinical Rheumatology*. 2007;21(4):663-675. doi:10.1016/j.berh.2007.02.004.
7. Prevoo ML, 'T hof MA, Kuper HH, Van Leeuwen MA, Van de putte LB, Van Riel PL: Modified disease activity scores that include twenty-eight-joint counts. Development and validation in a prospective longitudinal study of patients with rheumatoid arthritis. *Arthritis Rheum*. 1995; 38: 44-8.
8. Smolen JS, Breedveld FC, Schiff MH et al.: A simplified disease activity index for rheumatoid arthritis for use in clinical practice. *Rheumatology (Oxford).* 2003; 42:244- 57.
9. Aletah AD, Nell V P, Stamm T et al: Acute phase reactants add little to composite disease activity indices for rheumatoid arthritis: validation of a clinical activity score. *Arthritis Res Ther*. 2005; 7: R796-R806.
10. Jerram S, Butt S, Gadsby K, Deighton C. Discrepancies between the EULAR response criteria and the NICE guidelines for continuation of anti-TNF therapy in RA: a cause for concern?. *Rheumatology*. 2007;47(2):180-182. doi:10.1093/rheumatology/kem331.

11. Chakravarty K. Comment on: BSR/BHPR guideline for disease-modifying anti-rheumatic drug (DMARD) therapy in consultation with the British Association of Dermatologists: reply. *Rheumatology*. 2008;47(10):1591-1591. doi:10.1093/rheumatology/ken327.
12. Hocevar A. Leflunomide-associated tuberculosis?. *Rheumatology*. 2005;45(2):228-229. doi:10.1093/rheumatology/kei173.
13. Tauseef A et al. Clinical use of anti-TNF therapy and increased risk of infections. *Drug Healthc Patient Saf*. 2013; 5: 79–99. Published online 2013 Mar 28. doi: 10.2147/DHPS.S28801.
14. Shea B et al. Folic acid and folinic acid for reducing side effects in patients receiving methotrexate for rheumatoid arthritis. *Cochrane Database Syst Rev*. 2013 May 31;(5):CD000951. doi: 10.1002/14651858.CD000951.pub2.
15. Tina D et al. BSR and BHPR rheumatoid arthritis guidelines on safety of anti-TNF therapies. *Rheumatology*. 2010. doi:10.1093/rheumatology/keq249a.
16. Ding T, Ledingham J, Luqmani R et al. BSR and BHPR rheumatoid arthritis guidelines on safety of anti-TNF therapies. *Rheumatology*. 2010;49(11):2217-2219. doi:10.1093/rheumatology/keq249a.
17. Jennifer MG et al. American College of Rheumatology 2010 Recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis. *Arthritis Care & Research*. November, 2010. 6:1515-26. DOI10.1002/acr.20295.
18. American College of Rheumatology Ad Hoc Committee on Glucocorticoid-Induced Osteoporosis. Recommendations for the prevention and treatment of glucocorticoid-induced osteoporosis: 2001 update. *Arthritis Rheum.* 2001;44:1496 – 503. Accessed August 23, 2016.
19. British Society for Rheumatology Position statement on biosimilar medicines-February 2015. http://www.rheumatology.org.uk/about_bsr/press_releases/bsr_supports_the_use_of_biolsimilars_but_recommends_measures_to_monitor_safety.aspx. Accessed August 23, 2016.
20. Swiss medical weekly website. Recommendations for the use of ultrasound in rheumatoid arthritis: literature review and SONAR score experience. http://www.smw.ch/content/smw-2013-13861/. Accessed August 23, 2016.
21. Wakefield RJ, D'Agostino MA, Naredo E, Buch MH, Iagnocco A, Terslev L, et al. After treat-to-target: can a targeted ultrasound initiative improve RA outcomes? *Ann Rheum Dis*. 2012;71:799–803.
22. Balsa A, de Miguel E, Castillo C, Peiteado D, Martin-Mola E. Superiority of SDAI over DAS-28 in assessment of remission in rheumatoid arthritis patients using

power Doppler ultrasonography as a gold standard. *Rheumatology*. 2010;49:683–90.

23. Mandl P, Balint PV, Brault Y, Backhaus M, D'Agostino MA, Grassi W, et al. Metrologic properties of ultrasound versus clinical evaluation of synovitis in rheumatoid arthritis: results of a multicenter, randomized study. *Arthritis Rheum*. 2012;64:1272–82.
24. Scire CA, Montecucco C, Codullo V, Epis O, Todoerti M, Caporali R. Ultrasonographic evaluation of joint involvement in early rheumatoid arthritis in clinical remission: power Doppler signal predicts short-term relapse. *Rheumatology*. 2009;48:1092–7.
25. Brown AK, Quinn MA, Karim Z, Conaghan PG, Peterfy CG, Hensor E, et al. Presence of significant synovitis in rheumatoid arthritis patients with disease-modifying antirheumatic drug-induced clinical remission: evidence from an imaging study may explain structural progression. *Arthritis Rheum.* 2006;54:3761–73.
26. Peluso G, Michelutti A, Bosello S, Gremese E, Tolusso B, Ferraccioli G. Clinical and ultrasonographic remission determines different chances of relapse in early and long standing rheumatoid arthritis. *Ann Rheum Dis*. 2011;70:172–5.
27. Zufferey P, Moeller B, Tamborrini T , Brulhart L, Scherer A, Ziswiler HR. Persistence of ultrasound synovitis in the patients fullfiling the DAS and/or the new ACR/EULAR RA remission definitions: results of the sonar score applied to the patients of the SCQM cohort. EULAR meeting. Berlin: EULAR Congress News 2012:13. Accessed August 23, 2016.
28. David F. Defining remission in rheumatoid arthritis. *Ann Rheum Dis*. 2012 Apr; 71(0 2): i86–i88. doi: 10.1136/annrheumdis-2011-200618.
29. National Collaborating Centre for Chronic Conditions (UK). Rheumatoid Arthritis: National Clinical Guideline for Management and Treatment in Adults. London: Royal College of Physicians (UK); 2009 Feb. (NICE Clinical Guidelines, No. 79.). https://www.ncbi.nlm.nih.gov/books/NBK51812/. Accessed August 24, 2016.
30. Badsha H, Ooi Kong K, Tak P. Rheumatoid arthritis in Dubai--delayed diagnosis and low usage of disease modifying antirheumatic drugs. *Annals of the Rheumatic Diseases*. 2007; 66(6):835-835. doi:10.1136/ard.2006.068171.
31. Badsha, H., Kong, K.O. & Tak, P.P. Rheumatoid arthritis in the United Arab Emirates. *Clin Rheumatol*. 2008; 27:739. https://doi.org/10.1007/s10067-007-0782-z.

Supplementary data

Figure 1: Rheumatoid arthritis referral form. The format of the referral form accepted by the members of the scientific committee of the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists included the patient's diagnostic data, diagnosis, summary of the current complaint and the reason for referral.

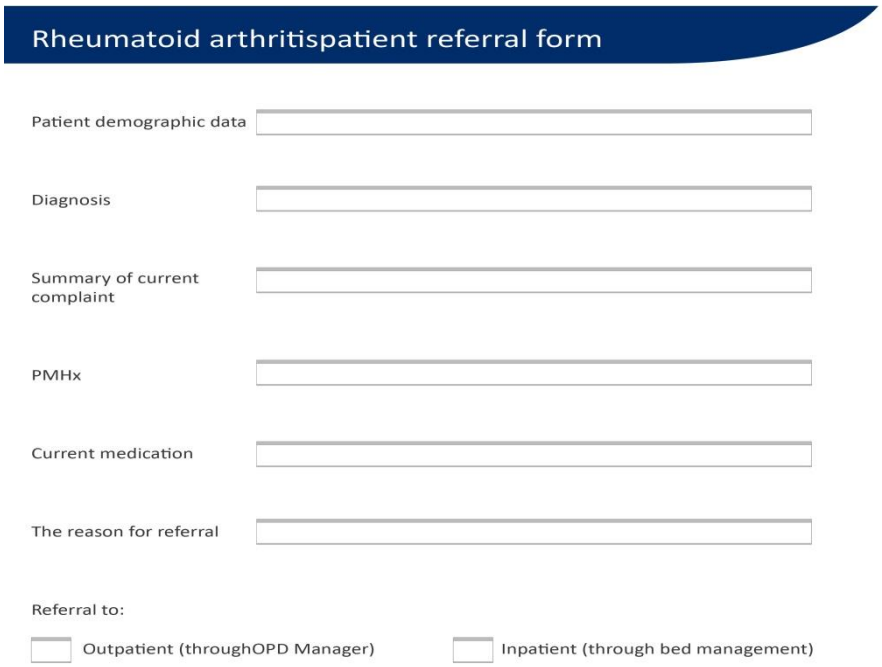

Figure 2: Rheumatoid arthritis patient base line visit form. The format of the baseline form accepted by the members of the scientific committee of the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists included relevant personal information, symptoms experienced and diagnostic test results.

Rheumatoid arthritis patient baseline visit form

ID3			
Emirates ID	111111111		
Hospital ID	1		
Patient's 3 initials	A.A.A		
Date of Birth	04/07/1971		
Date of the first Joint symptoms	10/06/2010		
Date of the first presentation to Rheumatologist	04/07/2011		
Symptoms for less than 6 weeks	No		
Symptoms present for more than 6 weeks but less	No		
Initial Symptoms	Joint pain and Stiffness		
Date of first physical examination	14/09/2011		
Swelling	Yes		
Small joints of the hand(s)	6-10	Large joints of the upper limbs(s)	3
Small joints of the feet(s)	11-20	Large joints of the lower limbs(s)	2
Tenderness:	Yes		
Small joints of the hand (t):	1-5	Large joints of the upper limbs (t):	0
Small joints of the feet (t):	2	Large joints of the lower limbs (t):	0
Global patient Assessment:	4		
ESR on the first visit:	78	CRP on the first visit:	25
DAS28 V3 on first visit:	6.9	Comorbidities at first visit:	DM, IHD, Renal Disease
Anti-CCP:	Negative	RF:	Positive
Erosions X-ray of Feet:	Yes	Erosions X-ray of Hand:	No
Medication on the first visit:	Methotrexate, Other biologics, Prednisolone		

Figure 3: Rheumatoid arthritis follow up visit form. The format of the follow up visit form accepted by the members of the scientific committee of the Dubai Arthritis Task Force and General Assembly of Dubai Rheumatologists included the core set defined by the American College of Rheumatology disease activity measures for rheumatoid arthritis clinical trials, ESR, DAS28 V3, comorbidities and medications used currently.

Rheumatoid arthritis follow-up visit form

ID:	3
Emirate ID:	111111111
Hospital ID:	222228888
Patient's 3 initials:	A.A.A
Date of visit:	07/10/2015
Symptoms:	Asymptomatic
Swollen:	
Tenderness:	10
Patient global assessment:	6
Physician global assessment:	6
ESR on the visit:	50
CRP on visit:	20
DAS28 V3 on visit:	5.1
New Comorbidities:	DM, Osteoporosis
Current Medications:	Anti-TNF, Leflunomide
Additional Comments:	

Table 1: Voting results for question 1 based on 2013 EULAR recommendation - 68.42% of the votes showed reservation and 31.58% votes were in favor of the recommendation. None of the members rejected the recommendation.

Question 1: Should the 2013 EULAR recommendation on management of RA be accepted routinely in your daily practice?			
	Reservation	No	Yes
Votes (%)	68.42%	0	31.58%

Table 2: Voting results for question 2 based on the use of disease activity score 28. 84.21% votes were in favor of the recommendation and none showed rejection.

Question 2: Can disease activity score 28 be used as a monitoring tool in patients with RA every 3 months?			
	Reservation	No	Yes
Votes (%)	15.79%	0	84.21%

Table 3: voting results for question 3 based on the use of Clinical Disease Activity Index (CDAI) as a monitoring tool. 89.48% votes were in favor of the recommendation and 5.26% votes showed rejection.

Question 3: Do you accept the use of Clinical Disease Activity Index (CDAI) as a monitoring tool in patients with RA every 3 months?			
	Reservation	No	Yes
Votes (%)	5.26%	5.26%	89.48%

Table 4: voting results for question 4 based on the use of Simplified Disease Activity Index (SDAI) as a monitoring tool. 80.95% votes were in favor of the recommendation and 14.29% votes showed rejection. 4.76% votes represented reservation for the suggestion.

Question 4: Do you accept the use of Simplified Disease Activity Index (SDAI) as a monitoring tool in patients with RA every 3 months?

	Reservation	No	Yes
Votes (%)	4.76%	14.29%	80.95%

Table 5: voting results for question 5 based on the early performance of tests. 21.05%votes were in favor of the recommendation and 47.37% votes showed rejection. 31.58% votes represented reservation for the suggestion.

Question 5: Do you recommend to do the tests every 8 weeks initially and then every 3 months after reaching the target dose?			
	Reservation	No	Yes
Votes (%)	31.58%	47.37%	21.05%

Table 6: voting results for question 6 based on the performance of T-spot test. 84.21% votes were in favor of the recommendation and 10.53% votes showed rejection. 5.26% votes represented reservation for the suggestion.

Question 6: Do you recommend T-spot test in all patients starting on biologics?			
	Reservation	No	Yes
Votes (%)	5.26%	10.53%	84.21%

Table 7: voting results for question 7 based on the performance of Chest X-ray. 89.48% votes were in favor of the recommendation and 5.26% votes showed rejection. 5.26% votes represented reservation for the suggestion.

Question 7: Do you recommend Chest X-ray in all patients starting on biologics?			
	Reservation	No	Yes
Votes (%)	5.26%	5.26%	89.48%

Table 8: voting results for question 8 based on the recommendation on Hepatitis B virus screening. 94.74% votes were in favor of the recommendation and 5.26% votes showed rejection. None of them represented reservation for the suggestion.

Question 8: Do you recommend Hepatitis B virus screening in all patients starting on biologics?

	Reservation	No	Yes
Votes (%)	0%	5.26%	94.74%

Table 9: voting results for question 9 based on the recommendation on of BSR and BPHR rheumatoid arthritis guidelines. All the votes were in favor of the recommendation.

Question 9: Do you agree to the recommendations of BSR and BPHR rheumatoid arthritis guidelines on safety of anti-TNF therapies?			
	Reservation	No	Yes
Votes (%)	0%	0%	100%

Table 10: voting results for question 10 based on the EULAR evidence-based recommendations for cardiovascular risk management. 94.44% votes were in favor of the recommendation and 5.56% votes represented reservation for the suggestion.

Question 10: Do you agree to EULAR evidence-based recommendations for cardiovascular risk management in patients with rheumatoid arthritis and other forms of inflammatory arthritis?			
	Reservation	No	Yes
Votes (%)	5.56%	0%	94.44%

Table 11: voting results for question 11 based on the American College of Rheumatology 2010 recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis. All the votes were in favor of the recommendation.

Question 11: Do you agree to the American College of Rheumatology 2010 recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis on recommended monitoring of patients receiving prevalent glucocorticoid therapy for more than 3 months?			
	Reservation	No	Yes
Votes (%)	0%	0%	100%

Table 12: voting results for question 14 based on the recommendations on considering serial bone mineral density testing once every 18 months. 90% votes were in favor of the recommendation and 10% votes represented reservation for the suggestion.

Question 12: Do you agree to the American College of Rheumatology 2010 recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis on considering serial bone mineral density testing once every 18 months?			
	Reservation	No	Yes
Votes (%)	10%	0%	90%

Table 13: voting results for question 13 based on the recommendations on considering annual Serum 25-hydroxyvitamin D measurement every 3 months until target vitamin levels have been achieved (100-175nmol/L). All the votes were in favor of the recommendation.

Question 13: Do you agree to the American College of Rheumatology 2010 recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis on considering annual Serum 25-hydroxyvitamin D measurement every 3 months until target vitamin levels have been achieved (100-175nmol/L)			
	Reservation	No	Yes
Votes (%)	0%	0%	100%

Table 14: voting results for question 14 based on the recommendations on considering annual height measurement. All the votes were in favor of the recommendation.

Question 14: Do you agree to the American College of Rheumatology 2010 recommendations for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis on considering annual height measurement			
	Reservation	No	Yes
Votes (%)	0%	0%	100%

Table 15: voting results for question 15 based on the recommendations on considering conducting investigations not covered incertain situations such as RA with lung pathology. 95% votes were in favor of the recommendation and 5% votes showed reservation.

Question 15: Do you agree to the recommendations advised by task force that "justification of conducting investigations not covered incertain situations such as RA with lung pathology, each case will be justified by its own merits depending on the organ affected in each case?			
	Reservation	No	Yes
Votes (%)	5%	0%	95%

Table 16: voting results for question 16 based the BSR recommendations. 94.75% votes were in favor of the recommendation and 5.26% votes showed reservation.

Question 16: Do you agree to the BSR recommendations 1 to 6 mentioned in the position statement?			
	Reservation	No	Yes
Votes (%)	5.26%	0%	94.75%

Table 17: voting results for question 17 based on recommendation of Arthritis Task Force on the minimal qualification to enforce reimbursement for ultrasound by the insurance. 47.06% votes were in favor of the recommendation and 5.88% votes showed rejection. 47.06% votes represented reservation for the suggestion.

Question 17: Do you agree to the recommendation of Arthritis Task Force on the minimal qualification to enforce reimbursement for ultrasound by the insurance?			
	Reservation	No	Yes
Votes (%)	47.06%	5.88%	47.06%

Table 18: voting results for question 18 based on recommendation by Arthritis Task Force on prescribing medicines. 95.24% votes were in favor of the recommendation and 4.76% votes showed reservation.

Question 18: Do you agree to the recommendation of Arthritis Task Force on the minimal qualification to enforce reimbursement for ultrasound by the insurance?			
	Reservation	No	Yes
Votes (%)	4.76%	0%	95.24%

Table 19: voting results for question 19 based on the recommendation of including the patient baseline visit for in daily practice. 83.33% votes were in favor of the recommendation and 16.67% votes suggested rejection for the suggestion.

Question 19: Do you agree to the recommendation of including the patient baseline visit for in daily practice?			
	Reservation	No	Yes
Votes (%)	0%	16.67%	83.33%

Table 20: voting results for question 20 based on the recommendation of including the patient follow-up visit form in daily practice. 82.35% votes were in favor of the recommendation and 17.65% votes showed rejection.

Question 20: Do you agree to the recommendation of including the patient follow-up visit form in daily practice?			
	Reservation	No	Yes
Votes (%)	0%	17.65%	82.35%

Table 21: voting results for question 21 based on the recommendation of including the referral forms in daily practice. 94.12% votes were in favor of the recommendation and 5.88% votes showed rejection.

Question 21: Do you agree to include referral forms in daily practice?			
	Reservation	No	Yes
Votes (%)	0%	5.88%	94.12%

Table 22: voting results for question 22 based on the recommendation of getting the patient baseline form filled by the rheumatologist or training the nurse appropriately to enter the data. All votes were in favor of the recommendation.

Question 22: Do you agree to the recommendation that the patient baseline form be filled by the rheumatologist or have the nurse trained appropriately to enter the data?			
	Reservation	No	Yes
Votes (%)	0%	0%	100%

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