Format for ANSWERING REVIEWERS

February 25, 2015

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 2429-review.doc).

Title: Ankylosing Spondylitis; A state of the art factual backbone

Author: Mohammad Ghasemi-rad, Hosam Attaya, Emal Lesha, Andrea Vegh, Tooraj Maleki-Miandoab, Emad Nosair, Nariman Sepehrvand, Ali Davarian, Hamid Rajebi, , Abdolghader Pakniat, Seyed amirhossein Fazeli, Afshin Mohammadi

Name of Journal: *World Journal of Radiology*

ESPS Manuscript NO: 15342

The manuscript has been improved according to the suggestions of reviewers:
1 Format has been updated

2 Revision has been made according to the suggestions of the reviewer
The manuscript is too long with poor English (few sentences have no meaning). Definitive statements should avoided. and any statement should be supported by a reference. Few false statements: Age-adjusted prevalence of HLA-B27 (as if HLA-B27 changes with age).
We have edited the manuscript twice again for both English and the contents.
Response: It seems not to be false, as it is mentioned in other articles. (See: http://arthritis-research.com/content/15/5/R158)
However, We can omit the "age-adjusted" to satisfy the reviewer.

Thank you for allowing me the opportunity to review your review of Ankylosing Spondylitis. You have summarized a great deal of information into this manuscript. Here are my comments:

1. Review closely for spelling, grammar and formatting, especially for technical terms (e.g. enthuses vs entheses).

We have tried to avoid these mistakes and changed the same spelling throughout the manuscript.

2. Make sure it's clear what the authorship of the Figures are (they are very well done).

The figures were done by one of the authors and we don't need to get any permission.

3. You state that "genetics play a large role in diagnosing AS". Is it in diagnosis itself or in helping

the MD suspect AS? Please clarify.

We meant diagnosis itself

4. It would be helpful to include the 2014 Project Plan of ACR/SAA/Spartan and how that will affect diagnosis/guidelines.

Apparently these guidelines have not been published yet, and currently there is only a "project plan" for them, basically outlining the objectives of these guidelines. These guidelines are also mainly recommendations for treatment options, and not so much diagnostic criteria. We found a link to the project plan, and it is the pdf from the first link of this google search:

https://www.google.com/search?q=2014+ACR%2FSAA%2FSPARTAN+Recommendations+for+the+Management+of+Axial+Spondyloarthritis%2C&rlz=1C5CHFA_enUS556US558&oq=2014+ACR%2FSAA%2FSPARTAN+Recommendations+for+the+Management+of+Axial+Spondyloarthritis%2C&aqs=chrome..69i57.301j0j8&sourceid=chrome&es_sm=91&ie=UTF-8

There is not much information on what will actually be in these guidelines, other than the objectives (which again, are mainly to do with treatment). We can add a short paragraph about it below if you believe it is necessary. (New Developments in AS Management Guidelines

In 2013, the Spondylitis Association of America (SAA) announced that they are partnering up with the American College of Rheumatology (ACR) and the Spondyloarthritis Research and Treatment Network (SPARTAN) to create a new set of treatment guidelines for ankylosing spondylitis and axial spondyloarthritis [http://www.spondylitis.org/press/news/582-new-as-spa-guidelines.aspx].

This project will aim to create guidelines that will outline recommendations for preventative care, such as osteoporosis screening and treatment, cardiovascular testing and fall prevention, and the monitoring of the disease activity within clinical practice, as well as recommendations for types of treatments including using total hip arthroplastic and thoracic kyphoplasty as well as physical therapy and recreational exercise, and the use of nonsteroidal anti-inflammatory medications and conventionally used medications. Additionally, the new guidelines will recommend pharmacological and non-pharmacological treatments for children with spondyloarthritis, and adults with non-radiographic axial spondyloarthritis, as well as patients with axial spondyloarthritis whose disease is complicated by iritis or inflammatory bowel disease)

5. Please be exact in referencing - for example "Celecoxib is an NSAID drug that has been proven to be beneficial in AS patients, however conventional NSAIDs have been proven to be just as effective" is not referenced. If this is opinion, please ensure the reader knows that. There are other instances where this occurs - please reference where appropriate.

We have done this

6. Please include commentary on US done by rheumatologists vs radiologists; are there data to show equivalency or practicality of one vs the other specialty in AS?

Another issue that should be addressed here is that whether US for diagnosing AS should be done by rheumatologists during the patient's clinic visit or it should be done merely by

radiologists.

There is no data to support the superiority of one over the other in the setting of AS. A study related to the field of rotator cuff tears assessment, comparing the arthrography performed by radiologists versus sonography executed by rheumatologists, have shown an equivalency between their sensitivity and specificity rates [1]. So far, no one has studied the competency of ultrasonographer in assessment of musculoskeletal disease either if the operator is a radiologist or a rheumatologist [2].

Regardless of who performs an US assessment, it is important for the ultrasonographer to be competent in order to minimize the risk of misdiagnosis or unnecessary examination [2, 3].

Nearly one-quarter of rheumatologists in US are using this technique, but it is still far from being incorporated into the routine clinical practice [4]. In many European countries such as Germany, Italy and Spain, rheumatologists routinely perform US; even in some of them, musculoskeletal US training became a compulsory part of rheumatology training [5, 6].

There is no doubt that it's not reasonable to expect every rheumatologists to be competent in all US procedures that is indicated for rheumatology [2], and that would remain within the remit of radiologists [7], but training rheumatologists for a more selected list of procedures such as identifying synovitis in a joint, etc., which could improve the clinical practice in rheumatology and enhance the care provided for patients, would be great.

The best case scenario is a close cooperation between rheumatologists and radiologists. The cooperation and task division between these two specialties would facilitate a cost-effective, more convenient and least risky care for patients whilst provides the required information for diagnosis and treatment of patients for the physician [7].

References:

1. **Swen WA, Jacobs JW, Neve WC, Bal D, Bijlsma JW: Is sonography performed by the rheumatologist as useful as arthrography executed by the radiologist for the assessment of full thickness rotator cuff tears? *The Journal of rheumatology* 1998, 25(9):1800-1806.**
2. **Wakefield RJ, Brown AK, O'Connor PJ, Karim Z, Grainger A, Emery P: Musculoskeletal ultrasonography: what is it and should training be compulsory for rheumatologists? *Rheumatology (Oxford, England)* 2004, 43(7):821-822.**
3. **Larche MJ, McDonald-Blumer H, Bruns A, Roth J, Khy V, de Brum-Fernandes AJ, Wakefield RJ, Brown AK, Bykerk V: Utility and feasibility of musculoskeletal ultrasonography (MSK US) in rheumatology practice in Canada: needs assessment. *Clinical rheumatology* 2011, 30(10):1277-1283.**
4. **Samuels J, Abramson SB, Kaeley GS: The use of musculoskeletal ultrasound by rheumatologists in the United States. *Bulletin of the NYU hospital for joint diseases* 2010, 68(4):292-298.**
5. **Kane D, Grassi W, Sturrock R, Balint PV: Musculoskeletal ultrasound--a state of the art review in rheumatology. Part 2: Clinical indications for musculoskeletal ultrasound in rheumatology. *Rheumatology (Oxford, England)* 2004, 43(7):829-838.**
6. **Wakefield RJ, Goh E, Conaghan PG, Karim Z, Emery P: Musculoskeletal ultrasonography in Europe: results of a rheumatologist-based survey at a EULAR meeting. *Rheumatology (Oxford, England)* 2003, 42(10):1251-1253.**

7. Tins BJ, Butler R: Imaging in rheumatology: reconciling radiology and rheumatology. *Insights into imaging* 2013, 4(6):799-810.

7. A summary paragraph is needed. The paper ends abruptly after Surgical Intervention.
We added a conclusion to the paper

The Authors have provided a complete review on the Ankylosing Spondylitis and state of art for the diagnosis and therapy. General major issues: The review appears extensive and sometime boring during the lecture. The authors have encompassed all the aspects of the disease, extending too much the sections related to the genetics and pathophysiological aspects. The topic is a radiological review and, accordingly, it should be focused on diagnostic features. They should shorten the first part
We have done this
and organize that on the radiological tools according to the complexity of the methodology rather than their impact on the disease (see ultrasonography, CT, and lastly MRI). **Will do that**
The section on therapy does not show innovative approach and should be updated.
This is what is in literature. What do you mean by innovative?
Reading the manuscript it appears that the multiple references are not frequently recalled, which makes the review a simple list of procedures.
Have done this
Minor issues: Minor English editing. References appear to be not homogeneously listed as required by the journal.
Have done this
We have shorten the first part and put our focus mainly on radiologic diagnosis
References and typesetting were corrected

Thank you again for publishing our manuscript in the *World Journal of Radiology*.

Sincerely yours,

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