Author's response to reviews

Title: Infectious sacroiliitis: a retrospective, multicentre study of 39 adults.

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Version: 3 Date: 18 September 2012

Author's response to reviews: see over
Dear Dr Harris,

Please find enclosed our revised manuscript entitled “Infectious sacroiliitis: a retrospective, multicentre study of 39 patients and literature review”, which is an original article for publication in BMC infectious diseases.

We thank reviewers for their comments and we are sending you herewith our replies:

**Reviewer #1: B. Garg**

Comment 1: Because of the multicentric nature of our study, we cannot provide the total number of sacroiliitis cases seen between 1995 and 2011. Therefore, we are unable to estimate the exact prevalence of ISI.

Comment 2: We have added the names and specific regimens of antibiotic therapy on page 7.

**Reviewer #2: Chi-Lai Ho**

We have to admit that MRI has important limitations and should not be used for establishing a definitive diagnosis of ISI. Given this context, we have added a paragraph highlighting the usefulness of PET-CT for ISI monitoring and for analysing the pre-existing conditions of this infectious arthritis on page 10.

**More specific comments:**

*Diagnostic criteria and imaging sequence of MRI in diagnosing ISI is not stated. Does the MRI signal abnormality have any specific features for ISI when compared with other types of sacroiliitis, e.g. auto immune or pre-existing degenerative causes? MRI in this study is NOT for a definitive ISI diagnosis in 100% of cases.*

- We have replaced the sentence on page 2 “MRI ...100% of cases” by: “Magnetic resonance imaging (MRI) (n=27), when focused on the SI (n=25), directed the diagnosis towards ISI in 25 cases”.

- Idem on page 9. We have replaced the sentence “In our trial, MRI always confirmed the diagnosis of ISI ....” by: “In our trial, MRI directed the diagnosis to ISI, provided that the slices were made through the SI”.

- Diagnostic and imaging sequences have been stated on page 4: “MRI sequences including at least T1, T1 with Gadolinium infusion, and T2 sequences were performed. ISI was suspected when low signal intensity on T1 and high signal intensity on T2 were observed on the focused MRI slices.”

*Does it mean that MRI abnormality has no specific feature to differentiate acute from post treatment ISI, previous or other causes of sacroiliitis?*

- As notified on page 9, MRI signal abnormalities have no specific feature for ISI. However, the chronology and anamnesis may help physicians differentiate acute from post-treatment ISI. We have added that the findings of clinical examination and the biological features clearly improved on antibiotic therapy. According to us, these features are better markers associated with a good outcome than MRI.
In the absence of pathogenic agents, does antibiotic therapy with improvement exclude brucellar sacroiliitis?

As you may know, the recommended treatment for brucellar osteoarthritis is based on a “rifampicine-doxycycline” association. None of our patients received doxycycline during antibiotic therapy. Moreover, none of the patients came from an endemic brucellar area.

Specificity of MRI in diagnosing ISI is not addressed.

Because of the retrospective nature of our study, we are not able to estimate the specificity of MRI in diagnosing ISI.

Data and statistical mistakes have been corrected:

**What is the finding of the 21st case?**

- Psoas abscess was found in eight and not seven cases (29.6%).

16 years! The MRI scanners and technical specifications have changed at least 3 generations. **How did the MRI results compare between the 1st and last case?**

- Because of the retrospective nature of this study, we reported cases in which different imaging technical specifications had been used. However, we have only taken into account T1, T2, T1+gadolinium infusion sequences, which have been routinely used since 1995. To rule out this technical bias, a prospective study should be performed.

**Are all patients with previous sacroiliitis or underlying sacroiliac joint pathology excluded from the study?**

- Based on anamnesis data, we have excluded all patients with previous ISI or underlying sacroiliac joint pathology.

**Why choose 38.2°C? Some defined fever using infrared tympanic thermometer above 37.8°C. 17 out of 39 patients were febrile, not match the definition of above 38.2°C. 17 out of 39 patients (41%) were febrile. Should be 44%**

- We have changed the definition of fever by temperature above 37.8°C instead of 38.2°C, but this has no impact on the remainder of the data.
- We have replaced 41% by 44% in the following sentence: “17 out of 39 patients (44%)... “on page 5.

**Time to diagnosis was evaluated with certainly in 36 cases, but remained long. How was the diagnosis established in the patient diagnosed at >100 days?**

- The diagnosis was established in the patients diagnosed at >100 days based on articular puncture results (staphylococcus).

**CT scans were carried out, revealing arthritis of the ISI in <50% of cases. What kind of arthritis?**

- On page 6: “CT scans were carried out, revealing arthritis of the ISI...: we mean infectious arthritis. We have clarified this passage.
Format comments:

-We have standardized number of decimal place in the paper, modified the typographical error on page 3 (lumbogluteal), and used the same nomenclature for CT scan.

We hope that the editorial board and reviewers will consider this revised version suitable for publication in BMC infectious diseases.

Sincerely,

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