Author's response to reviews

Title: Homing and reparative effect of intra-articular injection of autologus mesenchymal stem cells in arthritic animal model

Authors:

Abir Mokbel (abir138@yahoo.com)
Omar El-Tookhy (oeltookhy@gmail.com)
Ashraf Shamaa (shamaa_61@yahoo.com)
Laila Rashed (drlailarashed20002000@yahoo.com)
Dina Sabry (dinnasabry69@yahoo.com)
Abeer Mostafa (abeerelsayed9@yahoo.com)

Version: 3 Date: 1 October 2011

Author's response to reviews: see over
The title of submitted paper is:

**HOMING AND REPARATIVE EFFECT OF INTRA-ARTICULAR INJECTION OF AUTOLOGOUS MESENCHYMAL STEM CELLS IN ARTHRITIC ANIMAL MODEL**

I want to submit this *revised corrected* original research article to BMC Musculoskeletal disorders because.

The corresponding author:

Dr. Dina Sabry Abd ElFatah.

Assistant Professor of Medical Biochemistry and Molecular Biology.
Faculty of Medicine. Cairo University, Egypt.

**Email:**

dinnasabry69@yahoo.com

dinasabry69@hotmail.com

**Telephone:** 002-0111200200

**Fax:** 002-023632297
Reviewer’s comments

Reviewer 1:

Major compulsory revisions

1/ the results provided by the authors regarding the MSC identification and characterization is not convincing. First, the authors should add a phenotypic analysis of the MSC used in the study. Second, the staining on which relies the assessment of the differentiation potential of the MSC is not convincing since the controls are missing (staining of undifferentiated cells).

Done

2/ In the figure 7, authors should add standard deviation and statistical analysis. Moreover, the abbreviations such as ALK, AST, ALT, TP... used in figure 7 should be defined.

Abbreviations were added and fig.5a contains the SD.

3/ In figures 10, 11, 12, 13, 14, 15 and 16 the authors should present the same histological staining for sections corresponding to the control group and the MSC treated group.

As regards histopathologic figures we demonstrated different groups by different stains to show the effect of treatment with minimum number of figures, as Alcian Blue-PAS stain was used for staining of the acidic glycosaminoglycans. The appearance of the blue colour in the areas of cartilage with pathological morphology indicates newly formed cartilaginous tissue. Masson's trichrome stain was used for detection of collagen fibers & degree of matrix staining. These stains show the same morphological changes as the H&E stains. So we suppose that no information is lost. If you still need other figures with different stains we can send them but we can do but need more time for processing of paraffin blocks, staining, and photographing.
Minor essential revisions

1/ In the title, “arthritic” should be replaced by “osteoarthritic”.

Done all over the text

2/ In the abstract section: Changed
-Line 5 the authors should specify osteoarthritis after “the induction…”
-Line 9 “utilizing” should be replaced by using

3/ In the background section:
-The aim of the study is not enough detailed in the last paragraph. The authors should precise the animal model they are using (i.e. donkey), describe in detail the different groups they have chosen for the study and be more specific regarding the different time points studied.
-The references are not updated.

Done

4/ In the results section:
Globally, this section is not properly written and comments associated with the results obtained are not accurate. The authors should rewrite this section being more specific. We tried to be clearer and more specific
-First line in results section, the authors should rewrite the sentence “…3-weeks post-injection of arthritis…” I guess that the authors wanted to say post-induction of OA. Completely right and changed
- In the clinical lameness and swelling section the sentence “Lameness in group-I was estimated as (score 2) whereas in group-II and 3…. is not clear. Rephrased
- In the microscopic histopathology section, the sentence “Histologic assessment of the articular surface of the radio-carpal joint from all animals was determined if there were differences between the MSCs-treated and untreated groups” is not clear. The authors should rewrite this sentence. **Rephrased**

- In figures 10, 11, 12, 13, 14, 15, 16 and 17 letters a and b are missing.

- The number of figures should be reduced and for example the authors could make just one figure with several panels with the proposed figures 10, 11, 12, 13, 14, 15, 16 and 17 **Done and rearranged as one panel for each group.**

5/ The discussion can be shorten that will avoid the numerous redundancies. **The discussion was shortened and we tried to do it without redundancies**

Reviewer 2

Major points.

- Materials and methods. IV Microscopic histopathology. Group-I post injection termination after 1 month. Animals in this group were lost..... What does it means? Did they died? It must be explained. **Done**

- Discussion. The same period is repeated twice. …Unlike chondrocytes, the use of MSCs in not hindered by the limited availability.........**Removed.........**

- A lot of mistakes with the References. Murphy et al. (2003) need the relative reference number. The reference of Appleton at al [27] is not the same as in the reference List. All the other references from this point are uncorrected. **Revised**

- Table 3. Are the numbers indicated the mean values of the animals for each group? It is better to indicate this in the text. **Yes mentioned in the title of the table**
- Table 4. Re-write the title: Radiographic scoring of osteophyte formation and cartilage loss of different groups before and at 1, 2, 6 months from the treatment

Done

Minor points.

Check for typographical and English errors

Done