

OPEN PEER REVIEW REPORT 1

Name of journal: Neural Regeneration Research

Manuscript NO: NRR-D-19-00623

Title: Stem cells paracrine properties as a potential neuroprotective therapy for retinal neurodegenerative diseases

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COMMENTS TO AUTHORS

A relatively comprehensive review on the potential neuroprotective therapy of stem cells in retinal neurodegenerative diseases has been given in this paper, the following are a few recommendations.

1. Line 197, "However, exogenous administration of these factors is limited by their short half-life that leads to iterative intravitreal injections to obtain prolonged effects". What is the exact time of half life and injection interval of these factors? Through the whole article, only line 373 illustrates "MSC survives at least 2 weeks", more information on survival time and injection interval should be described to support the superiority of stem cells therapy.
2. Since it is a review focuses on "potential neuroprotective therapy for retinal neurodegenerative diseases of stem cells", I suggest to simplify the description on "Healthy and diseased photoreceptors" and "Stem cells", which accounts for about 30% of the article.
3. In the "Experimental animals" section, more details of these studies were recommended.
4. Line 260, the references that were applied to support the view of "limitation of cell replacement" were published ten years ago. Is there any new progress in this issue?
5. Line 352, these references should be moved to line 356, after "regulate inflammation".
6. Line 354, what are the exact factors that promote endogenous neuronal growth and angiogenesis?
7. Line 356, What is the neuroprotective mechanism of aMSC illustrated in Emre's study? You said "Specifically", so what is the characteristic of this study?
8. Line 363, In Velandia's study, how long this study has been observed?
9. In the "Clinical trials" section, the author listed several clinical researches to illustrate the therapeutic effect, safety and tolerability of stem cells, however, less therapeutic mechanism was cited or discussed. Are these therapeutic outcomes attributed to the paracrine properties of stem cells?