Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-19-00646
Title: Advanced diffusion MRI in Neurodegenerative diseases
Reviewer’s Name: George D. Vavougios
Reviewer’s country: Greece
Date sent for review: 2019-11-6

COMMENTS TO AUTHORS
This is a very interesting review, summarizing the potential use and preliminary evidence on newer diffusion-based MRI sequences in the diagnosis of Parkinson's Disease and Alzheimer's disease.
I believe there are several points that need to be addressed in the manuscript as is:
1. The title is somewhat inaccurate; the most prevalent neurodegenerative disease are not the entirety of neurodegenerative disease; as it stands, the study covers AD and iPD.
2. An actual summary of the retrieved articles is mandated, even in the form of total articles selected.
3. The AD part needs to be rewritten towards the specific contribution of advanced diffusion techniques in the early diagnosis of AD; A specific comment need to be made here is that MCI may or may not evolve in AD, however likely; Only longitudinal cohorts such as the ADNI can answer that in conjunction with serial imaging. I would consider rephrasing this part to accurately reflect this, and mentioning it as a a restriction.
4. In the PD section, it should be mentioned that prodromal idiopathic PD is a multisystem disease (given the gut aSyn pathology and the peripheral blood mononuclear cell phagolysosome disorders); therefore, imaging is not a means of early diagnosis, but could provide a venue of exploration vs. atypical parkisonism - a point made but not stressed by the authors.
5. For both parts, I would suggest a table with pros and cons of each technique.
6. I would like to see a comment on cost effectiveness, given that while biologically relevant, we are still far from achieving diagnostic grade yield for any of these techniques, as is the DWI sequence in e.g. acute stroke