

3 SCIENTIFIC QUALITY

Please resolve all issues in the manuscript based on the peer review report and make a point-by-point response to each of the issues raised in the peer review report. Note, authors must resolve all issues in the manuscript that are raised in the peer-review report(s) and provide point-by-point responses to each of the issues raised in the peer-review report(s); these are listed below for your convenience:

Reviewer #1:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: The authors mini-reviewed the usage of molecular imaging in assessing pulmonary and extra-pulmonary sequelae of COVID-19. The authors accomplished an interesting work summarizing the clinical utilities of various imaging modalities used for diagnosis, triaging and evaluation of complications in Covid-19 disease. The collection of the literature data was careful, accurate and sufficient for a mini review. I enjoyed reading this work. Minor comments: -

1. Anatomical imaging: Please describe the difference between routine CXR and chest CT and provide a smooth transition from CXR to CT after first paragraph. CT is not yet become a near-universal like routine CXR, especially in many poor places in the World where Covid-19 hit most severely. Please add more information why chest CT is more valuable compared to routine CXR in respect to lung anatomy/virus-specific damage/age/lung complications of Covid-19.

-- Further details of anatomical imaging such as CXR and CT and their relative advantages/disadvantages have been included.

2. All abbreviations should be defined at the first use (for example: CTPA, LAD and others).

-- All abbreviations have been edited as suggested (CTPA, LAD, FDG, PET, others).

3. Figure 1: Please distinguish the main square "Molecular imaging..." with the bold and change the lines with arrows. Please provide definitions for all abbreviations used in this Figure.

-- Figure has been edited as suggested.

4. Neurological Sequelae: Please explain the "cerebrovascular events" (paragraph 1).

-- Different types of "cerebrovascular events" have been enlisted.

5. Figure 2-4: Please give the title to the figures.

-- Figures 2-4 have been given titles in bold.

Reviewer #2:

Scientific Quality: Grade A (Excellent)

Language Quality: Grade A (Priority publishing)

Conclusion: Accept (General priority)

Specific Comments to Authors: Congratulations to the authors for this interesting minireviews in explore the potential utility of molecular imaging modalities in evaluating the long-term sequelae of COVID-19. This manuscript is easy to read, and interesting. The title and abstract cover the main aspects of the mini-reviews. The content and conclusion are relevant. The novelty is high The applicability is high.

-- No specific edit suggested.

Reviewer #3:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: The authors deal with a relevant and timely topic, i.e., the molecular imaging as a novel tool for the evaluation of some COVID-19 sequelae. To this end, they reviewed the current literature concluding that, although not ideal for diagnosis, the different modalities of molecular imaging may play a role in assessing both pulmonary and extra-pulmonary sequelae of COVID-19. However, widespread clinical applicability remains a challenge owing to longer image acquisition times and the need for adoption of infection control protocols. Overall, this review is nicely conceived; the studies included are relevant and the main findings are adequately presented. However, there are few comments to the authors, requiring some revision.

Abstract: please include the added value of the present review, including a more detailed description of the findings from the studies reviewed, as well as their main limitations and research agenda.

-- Abstract has been edited as suggested with more details of studies reviewed and value and research agenda of the present review.

Introduction: please provide a more technical background on molecular imaging and its main applications.

-- More detailed description of the technical background of molecular imaging modalities and their main applications has been included in the "Introduction" section.

Methods and Results: although the narrative design of this review, a brief "Methods" section including the search criteria and the selection strategy adopted should be included; the same holds true for a short "Results" section showing the studies originally retrieved, then selected, and eventually included.

-- "Methods" section has been added clearly stating the methodology/procedure of the literature search.

As this is a narrative review of articles of a diverse nature (case reports, case series, original studies and review articles) with no specific data analysis, a separate "Results" sections has not been added. All important and relevant findings from the studies included/reviewed have been mentioned in the manuscript.

Vasculitis: please expand this section by providing more background on COVID-19-related CNS complications of vasculitis syndromes (for a recent comprehensive review, please see PMID: 35138587).

-- Additional information on COVID-19 related CNS vasculitis has been added under the "Vasculitis" section with appropriate references as suggested.

Neurological Sequelae: please describe the main neuropathological findings of COVID-19- (e.g., PMID: 33546463); these may represent the correlates of molecular neuroimaging and should be mentioned.

-- Neuropathological findings have been clearly mentioned with appropriate references as suggested.

Conclusions: before this section, please include a paragraph highlighting the added value of the present review, a brief comment on the studies reviewed, their main limitations/caveats, possible solutions, and the research agenda. Finally, the point of view/authors' perspective may be further emphasized here.

-- A paragraph has been added before the "Conclusion" section briefly summarizing the added value of the present review, with important takeaways and limitations of existing literature and the author's point-of-view.

Reviewer #4:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: The authors are interested in using medical imaging in COVID-19 and focusing on molecular imaging, and most of them are focused on nuclear medicine. However, MRI is one of molecular imaging. Therefore, please provide additional MRI Neuroimaging such as diffusion tensor imaging (DTI) and the limitation of MRI.

-- Additional information on the role of MRI and Diffusion tensor imaging (DTI) with important limitations of MRI have been included in the "Neurological sequelae" section.