

## PEER-REVIEW REPORT

**Name of journal:** World Journal of Radiology

**Manuscript NO:** 64362

**Title:** Role of Cardiac MRI in the Diagnosis and Management of COVID-19 Related Myocarditis: Clinical and Imaging Considerations

**Reviewer's code:** 00247500

**Position:** Peer Reviewer

**Academic degree:** MD, PhD

**Professional title:** Full Professor, Research Scientist

**Reviewer's Country/Territory:** Germany

**Author's Country/Territory:** United States

**Manuscript submission date:** 2021-02-28

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2021-02-28 07:34

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**Review time:** 1 Day and 2 Hours

<b>Scientific quality</b>	[ <input checked="" type="radio"/> ] Grade A: Excellent [ <input type="radio"/> ] Grade B: Very good [ <input type="radio"/> ] Grade C: Good [ <input type="radio"/> ] Grade D: Fair [ <input type="radio"/> ] Grade E: Do not publish
<b>Language quality</b>	[ <input checked="" type="radio"/> ] Grade A: Priority publishing [ <input type="radio"/> ] Grade B: Minor language polishing [ <input type="radio"/> ] Grade C: A great deal of language polishing [ <input type="radio"/> ] Grade D: Rejection
<b>Conclusion</b>	[ <input type="radio"/> ] Accept (High priority) [ <input type="radio"/> ] Accept (General priority) [ <input checked="" type="radio"/> ] Minor revision [ <input type="radio"/> ] Major revision [ <input type="radio"/> ] Rejection
<b>Re-review</b>	[ <input checked="" type="radio"/> ] Yes [ <input type="radio"/> ] No
<b>Peer-reviewer statements</b>	Peer-Review: [ <input checked="" type="radio"/> ] Anonymous [ <input type="radio"/> ] Onymous Conflicts-of-Interest: [ <input type="radio"/> ] Yes [ <input checked="" type="radio"/> ] No

#### **SPECIFIC COMMENTS TO AUTHORS**

The authors reporting a nice review article entitled: "Role of Cardiac MRI in the Diagnosis and Management of COVID-19 Related Cardiovascular Disease: Clinical and Imaging Considerations." I have only minor points to add:

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**Name of journal:** World Journal of Radiology

**Manuscript NO:** 64362

**Title:** Role of Cardiac MRI in the Diagnosis and Management of COVID-19 Related Myocarditis: Clinical and Imaging Considerations

**Reviewer's code:** 02991165

**Position:** Peer Reviewer

**Academic degree:** MD, PhD

**Professional title:** Lecturer, Research Associate, Staff Physician

**Reviewer's Country/Territory:** Russia

**Author's Country/Territory:** United States

**Manuscript submission date:** 2021-02-28

**Reviewer chosen by:** Ya-Juan Ma

**Reviewer accepted review:** 2021-03-10 19:07

**Reviewer performed review:** 2021-03-14 18:40

**Review time:** 3 Days and 23 Hours

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Language quality</b>	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer statements</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No



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## **SPECIFIC COMMENTS TO AUTHORS**

The impact of the new coronavirus infection on the heart leads mainly to the development of viral myocarditis, so it is better to rename the article "Role of Cardiac MRI in the Diagnosis and Management of COVID-19 Related Myocarditis". As for the organization of the article, the authors slightly violated the classical design of the article and combined the review, case and hypothesis. One gets the impression that the clinical case is presented somewhat incorrectly. Echocardiography would also reveal enlarged cardiac cavities and hydropericardium. With such changes and the clinical picture, one could probably expect ECG changes typical of myocarditis / pericarditis, which would most likely be detected by an experienced clinician, especially in comparison with previous archived ECGs. However, ECHO-CG and ECG images are not included in the case description. In addition, the authors mention that troponin and NTproBNP were negative, but in such cases it is guided not only on these markers, but on the complex of laboratory markers such as myoglobin, myocardium antibodies, CRP, detection of antibodies to viruses and others. The main question that needs to be answered in this article (after all, a review article?): If the diagnosis of myocarditis could have been made to the patient without MRI on the basis of the aforementioned signs, then what additional will MRI bring in relation to the tactics of managing this patient? It is also worth reflecting in detail what are the diagnostic differences and features of the T1 and T2 modes in the diagnosis of COVID myocarditis (in the first half of the article, when the first mention of T1, T2, GLE occurs). In the article, it is desirable to indicate the data of population statistics of the detection of cases of myocarditis in COVID-19 disease in the United States and the use of MRI studies in these patients based on data from Medicare, CDC, electronic databases of the US health system, or other sources, and not only from the small "case-control" studies. In the conclusion of the article, the authors focus on



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the prospects of using MRI in the diagnosis of myocarditis and their subsequent observation in athletes who have undergone COVID (who represent a specific and limited category of patients). At a time when there is not enough observation data and interpretation of their results in general on the population, which seems to be more important. As for the limitations for the use of cardiac MRI, they are clearly greater than the authors mention, especially for patients with COVID. Turning to the Algorithm for prescribing / not prescribing CMRT, proposed by the authors, I would like to note that the list of criteria (CMRI is indicated) already indicates the diagnosis of myocarditis. And then the main question, mentioned above, arises again. In this regard, the algorithm of cardiac MRI application recommended by the authors in this context should be changed and optimized.