



## PEER-REVIEW REPORT

**Name of journal:** *World Journal of Clinical Cases*

**Manuscript NO:** 76636

**Title:** COVID-19 and the heart

**Provenance and peer review:** Invited Manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 05142913

**Position:** Peer Reviewer

**Academic degree:** Doctor, MBBS

**Professional title:** Doctor

**Reviewer's Country/Territory:** Saudi Arabia

**Author's Country/Territory:** Greece

**Manuscript submission date:** 2022-03-23

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-23 11:36

**Reviewer performed review:** 2022-03-23 11:44

**Review time:** 1 Hour

<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 Grade E: Do not publish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 type="checkbox"/> Grade A: Priority publishing <input checked="" 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 checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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statements

Conflicts-of-Interest: [  ] Yes [  ] No

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

The article involved a lot of immunological mechanisms that are difficult to understand.  
Kindly simplify mechanisms by diagram.



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**Peer-review model:** Single blind

**Reviewer's code:** 05114928

**Position:** Peer Reviewer

**Academic degree:** MSc, PhD

**Professional title:** Doctor, Physiotherapist, Postdoc

**Reviewer's Country/Territory:** Czech Republic

**Author's Country/Territory:** Greece

**Manuscript submission date:** 2022-03-23

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-23 11:41

**Reviewer performed review:** 2022-03-25 06:09

**Review time:** 1 Day and 18 Hours

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Language quality</b>	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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## SPECIFIC COMMENTS TO AUTHORS

This review paper summarizes COVID-19 related cardiovascular complications, with particular concern in enlightening the subjacent mechanisms below the leading cardiovascular disease (CVD) manifestations. While pre-existing CVD is one of the risk factors for poorer results of patients with COVID-19, SARS-CoV-2 viral infection may cause myocardial injury, leading to CVD development in patients with COVID-19.

\*(Abstract) Please explain this abbreviation = CD209? \*The introduction section should be more extensive. Please increase the narration of the COVID-19 in the introduction passage and the comparison with different acute respiratory syndromes and the usual management of COVID-19 briefly. \*Current research indicates that patients with COVID-19 comorbidities may be associated with incident myocardial damage on the second day in patients with normal troponin levels at admission. Please discuss this point. (Nuzzi, V., et al. (2021). The prognostic value of serial troponin measurements in patients admitted for COVID-19. ESC heart failure, 8(5), 3504-3511. <https://doi.org/10.1002/ehf2.13462>) \*Statement on Pg. 3 "Recent literature indicates that SARS-COV-2 infected patients with a history of cardiovascular disease display increased mortality. Patients with a history of hypertension, diabetes, obesity are also considered frail [6]." Consider strengthening the statement with other supporting references. The following related reference may be included in this review to provide a complete picture of the topic (Pepera, G., et al. (2022). Epidemiology, risk factors and prognosis of cardiovascular disease in the Coronavirus Disease 2019 (COVID-19) pandemic era: a systematic review. Rev cardiovas med, 23(1), 28. <https://doi.org/10.31083/j.rcm2301028>) \*Figure 2 describes the mechanisms of acute myocardial injury in COVID-19 patients: is it the authors' work or derived from the



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papers included? explain this \*The link between dyslipidemia and COVID 19 is of intense interest at present. Please, consider including this idea in light of one of the more extensive study focused on this topic, "Impact of prior statin use on clinical outcomes in COVID-19 patients: data from tertiary referral hospitals during COVID-19 pandemic in Italy. (e.g. Mitacchione, G (2021). Impact of prior statin use on clinical outcomes in COVID-19 patients: data from tertiary referral hospitals during COVID-19 pandemic in Italy. Journal of clinical lipidology, 15(1), 68-78. <https://doi.org/10.1016/j.jacl.2020.12.008>) Typos: Pg 11. sentence "Released from neutrophils in an inflammatory substrate, neutrophil extracellular traps constitute cell-free DNA structures, originating from decodensed chromatin, released to restrain pathogens." Revise the sentence to avoid a dangling modifier Pg 12. sentence "The formation of NETs in the vasculature results in platelet entrapment." This appears to be a sentence fragment; consider to revise Pg. 13. "In a cohort study of 1,914 patients presenting with ACS in the COVID-19 era; 7.75% was attributed to Takotsubo cardiomyopathy in contradiction to its former prevalence of 1.5-1.8% before the pandemic [50, 51]." Possibly too many words in the sentence; Consider to revise



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**Peer-review model:** Single blind

**Reviewer's code:** 05350625

**Position:** Editorial Board

**Academic degree:** FCPS, MBBS

**Professional title:** Assistant Professor

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

**Author's Country/Territory:** Greece

**Manuscript submission date:** 2022-03-23

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-25 15:05

**Reviewer performed review:** 2022-03-25 15:15

**Review time:** 1 Hour

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Very good <input 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 checked="" type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



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

The article presents a comprehensive pathophysiological outlook of cardiac abnormalities in COVID-19. The literature review and methodology is robust and findings are of interest for the readership.



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**Peer-review model:** Single blind

**Reviewer’s code:** 04227304

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Doctor

**Reviewer’s Country/Territory:** Israel

**Author’s Country/Territory:** Greece

**Manuscript submission date:** 2022-03-23

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-24 11:40

**Reviewer performed review:** 2022-03-29 05:14

**Review time:** 4 Days and 17 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 type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
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Conflicts-of-Interest: [ ] Yes [ **Y** ] No

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

See attached



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**Reviewer’s code:** 02498841

**Position:** Editor-in-Chief

**Academic degree:** MD, PhD

**Professional title:** Dean, Professor

**Reviewer’s Country/Territory:** China

**Author’s Country/Territory:** Greece

**Manuscript submission date:** 2022-03-23

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**Reviewer accepted review:** 2022-03-27 08:07

**Reviewer performed review:** 2022-03-29 06:44

**Review time:** 1 Day and 22 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 type="checkbox"/> Grade A: Priority publishing <input checked="" 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 checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Peer-reviewer</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous



statements

Conflicts-of-Interest: [ ] Yes [Y] No

### **SPECIFIC COMMENTS TO AUTHORS**

It has been demonstrated that COVID-19 causes acute myocardial injuries, as well as chronic damage to the cardiovascular system. Some reviews focusing on COVID-19 and cardiac injury, including clinical manifestations, biomarkers, mechanisms, diagnosis, treatment, and follow up, have been published recently ( J Hum Hypertens. 2021 Jan; 35(1): 4-11. Expert Rev Anti Infect Ther. 2021 Mar; 19(3): 345-357). This manuscript summarize the COVID-19 related cardiovascular complications (acute coronary syndromes, myocarditis, heart failure, arrhythmias), and discuss the underlying pathophysiological mechanisms. The manuscript is well, some results are novel, but the manuscript will require minor revision before a decision can be made regarding its merit for potential publication. 1) There are too many background descriptions in the abstract, the abstract does not summarize the main work described in the manuscript. 2)

The sentence 'a novel single stranded RNA beta coronavirus, emerged in Wuhan, Hubei province, China' should be deleted. 3) In the Introduction , authors should adequately describe the present status and significance of this study, explain the main differences from the currently published reviews. 4) The English abbreviation appearing for the first time in the text shall be supplemented with the full English name, for example, TMPRSS2, CTSB and CTSL, in Page 5. 5) Figures 1 and 3 cannot be the same as those in the original articles. Please pay attention to the copyright. 6) In conclusion, the pathogenesis should be summarized. 7) Reference 67 lacks page number.



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**Peer-review model:** Single blind

**Reviewer's code:** 03967085

**Position:** Editorial Board

**Academic degree:** MD, PhD

**Professional title:** Assistant Professor, Chief Doctor

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

**Author's Country/Territory:** Greece

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**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2022-03-26 12:37

**Reviewer performed review:** 2022-04-05 13:35

**Review time:** 10 Days

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



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Conflicts-of-Interest: [ ] Yes [Y] No

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

Very comprehensive review, all the information is revealed in depth. Minor comments:

1. Please, provide permission for the figures if they are not carfted by the authors.
2. NETosis is one word.