

## PEER-REVIEW REPORT

**Name of journal:** *World Journal of Critical Care Medicine*

**Manuscript NO:** 66710

**Title:** Challenges in hyperglycemia management in critically ill patients with COVID-19

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

**Peer-review model:** Single blind

**Reviewer's code:** 05430684

**Position:** Peer Reviewer

**Academic degree:** MD, MSc, PhD

**Professional title:** Chief Doctor

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

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

**Manuscript submission date:** 2021-04-02

**Reviewer chosen by:** AI Technique

**Reviewer accepted review:** 2021-04-03 08:41

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**Review time:** 9 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 Grade E: Do not publish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

## SPECIFIC COMMENTS TO AUTHORS

The manuscript is generally well written and conveys some clear-cut messages. However, considering that the topic is novel and knowledge is rapidly emerging, the authors could consider adding a few more references contributing to up-to-date information. Minor issues: 1) At the end of the "Introduction" section, the authors could kindly add data regarding diabetes-related emergencies in COVID-19 patients (see reference: Papadopoulos VP, Koutroulos MV, Zikoudi DG, Bakola SA, Avramidou P, Touzlatzi N, Filippou DK. Diabetes-related acute metabolic emergencies in COVID-19 patients: a systematic review and meta-analysis. *Diabetol Int.* 2021 Mar 23;1-15. doi: 10.1007/s13340-021-00502-9). Under the same point of view, the authors could consider revising the phrase "An unusually high number of COVID-19 patients developing diabetic ketoacidosis or hyperglycemic hyperosmolar syndrome have been noted (20) and negative outcomes during COVID-19 have been reported in two clinical cases of diabetic ketoacidosis and hyperglycemic hyperosmolar syndrome (21)". 2) Please amend "Although ketosis might have resulted from discontinuation of glucose-lowering drugs because of anorexia before hospital admission, a direct effect of COVID-19 should be considered" for "Although ketosis might have resulted from discontinuation of glucose-lowering drugs because of anorexia before hospital admission, a direct effect of COVID-19 should be considered". 3) Please explain the acronym "NEFA" (Non-Esterified Fatty Acids). 4) Please give a reference for "Enteric and parenteral nutrition frequently used in critically ill patients add rapid or persistent glucose load leading to hyperglycemia". 5) Please give a reference for "Other therapies administered often in ICU patients such as catecholamines, vasopressors, glucocorticoids and mineralocorticoids contribute to hyperglycemia mainly by augmenting insulin resistance

at peripheral tissues. Immunomodulatory medications were shown to have mixed effects on glycemic control". 6) Please further discuss the background antidiabetic treatment in relation with outcome (see reference Israelsen SB, Pottegård A, Sandholdt H, Madsbad S, Thomsen RW, Benfield T. Comparable COVID-19 outcomes with current use of GLP-1 receptor agonists, DPP-4 inhibitors or SGLT-2 inhibitors among patients with diabetes who tested positive for SARS-CoV-2. *Diabetes Obes Metab*. 2021 Jan 27;10.1111/dom.14329. doi: 10.1111/dom.14329. Epub ahead of print. PMID: 33502076; PMCID: PMC8014019.) 7) Please shortly refer to the potential contribution of SGLT2i in the development of euglycaemic diabetic ketoacidosis in COVID-19 patients. 8) Please amend "There is enough evidence that optimal Covid19 infection management with Tocilizumab" for "There is enough evidence that optimal COVID-19 infection management with Tocilizumab". 9) Please amend "Serum K levels" for "Serum K+ levels". 10) Please further discuss the potential benefit from the use of spironolactone especially in COVID-19 patients with diabetes (see reference: Kotfis K, Lechowicz K, Drożdżal S, Niedźwiedzka-Rystwej P, Wojdacz TK, Grywalska E, Biernawska J, Wiśniewska M, Parczewski M. COVID-19-The Potential Beneficial Therapeutic Effects of Spironolactone during SARS-CoV-2 Infection. *Pharmaceuticals (Basel)*. 2021 Jan 17;14(1):71. doi: 10.3390/ph14010071). 11) Please amend "Limited data is available regarding the most appropriate management of hyperglycemia in patients infected by COVID-19" for "Limited data is available regarding the most appropriate management of hyperglycemia in patients infected by COVID-19". 12) Please amend "Consider Moving intravenous drips" for "Consider moving intravenous drips".

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<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 checked="" 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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statements

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

## SPECIFIC COMMENTS TO AUTHORS

It is a well written manuscript