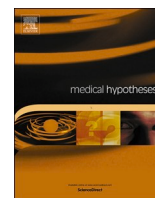




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Letter to Editors

COVID-19, colchicine and glycemia

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Dear editor

There is mounting evidence that SARS-CoV-2 infection may lead to hyperglycemia (via compromised insulin secretion and lowered sensitivity to insulin) even in the absence of diabetes mellitus and with worsening of COVID-19 severity [1–4].

Colchicine was shown to reduce the duration of oxygen therapy and hospitalisation in 36 patients with COVID-19 [5]. The same medication was also associated with less clinical deterioration, compared to controls, in 55 patients with COVID-19 [6]. Very recently, preliminary results from the awaited COLCORONA trial [7] were presented: colchicine use at 1 mg/day maximum for 30 days was reported to be beneficial in mild to moderately ill patients with COVID-19 ($n = 4159$), with significant reduction in need for hospitalization and possible reduction in need for mechanical ventilation or mortality [8].

Colchicine at maximum daily doses of 1.5 mg has been associated with lower incidence of diabetes [9] and episodes of severe hypoglycemia [10–11]. In sharp contrast, under experimental conditions, higher doses of colchicine of 2.0 mg/day for 10 days or up to 3.0 mg (bolus) have been associated with hyperglycemia and lowering of endogenous insulin secretion [12]. Thus, the effects of colchicine on glycemia appear to be biphasic, with lower doses leading to low blood glucose (or even hypoglycemia) and higher doses leading to hyperglycemia. Consequently, we can speculate that the addition of colchicine to the current pharmaceutical armamentarium for COVID-19 (a disease which - apparently - is accompanied by changes in blood glucose) may impart further glycemic changes that necessitate vigilance.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- [1] Ilias I, Diamantopoulos A, Pratikaki M, Botoula E, Jahaj E, Athanasiou N, et al. Glycemia, beta-cell function and sensitivity to insulin in mildly to critically ill covid-19 patients. *Medicina (Kaunas)* 2021;57(1):68. <https://doi.org/10.3390/medicina57010068>.
- [2] Ilias I, Jahaj E, Kokkoris S, et al. Clinical study of hyperglycemia and SARS-CoV-2 infection in intensive care unit patients. *Vivo* 2020;34:3029–32.
- [3] Ilias I, Zabuliene L. Hyperglycemia and the novel Covid-19 infection: possible pathophysiologic mechanisms. *Med Hypotheses* 2020;139:109699.
- [4] Sardu C, D'Onofrio N, Balestrieri ML, et al. Outcomes in patients with hyperglycemia affected by COVID-19: Can we do more on glycemic control? *Diabetes Care* 2020;43:1408–15.
- [5] Lopes MI, Bonjorno LP, Giannini MC, et al. Beneficial effects of colchicine for moderate to severe COVID-19: a randomised, double-blinded, placebo-controlled clinical trial. *RMD Open* 2021;7:e001455.
- [6] Deftereos SG, Giannopoulos G, Vrachatis DA, et al. Effect of colchicine vs standard care on cardiac and inflammatory biomarkers and clinical outcomes in patients hospitalized with coronavirus disease 2019: The GRECCO-19 randomized clinical trial. *JAMA Netw Open* 2020;3:e2013136.
- [7] Kaul S, Gupta M, Bandyopadhyay D, et al. Gout Pharmacotherapy in Cardiovascular Diseases: A Review of Utility and Outcomes. *Am J Cardiovasc Drugs* 2020: 1–14.
- [8] Tardif J-C, Bouabdallaoui N, L'Allier PL, et al. Efficacy of colchicine in non-hospitalized patients with COVID-19. *medRxiv* 2021. p. 2021.2001.2026.21250494.
- [9] Wang L, Sawhney M, Zhao Y, Carpio GR, Fonseca V, Shi L. Association between colchicine and risk of diabetes among the veterans affairs population with gout. *Clin Ther* 2015;37:1206–15.
- [10] Gong R, Hong L. Hypoglycemia caused by colchicine. *ADRJ* 2018;20:392–3.
- [11] Nafi A, Begum M, Hammid N, Hasan M. Colchicine induced hypoglycemia: A case report. *J Nat Inst Neurosciences Bangl* 2019;5:87–9.
- [12] Giugliano D, Cerciello T, Passariello N, et al. Colchicine and insulin secretion in man. *Diabetes* 1981;30:1008–12.

Ioannis Ilias, Charalambos Milionis

Department of Endocrinology, Diabetes and Metabolism, Elena Venizelou Hospital, Athens GR-11521, Greece

E-mail address: pesscharis@hotmail.com (C. Milionis).

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