



## Complications and Risk Factors of COVID-19 in Diabetic Patients

Corrao Matilla\*

Department of Endocrinology, Autonomous University of Madrid, Madrid, Spain

### DESCRIPTION

Diabetes is a condition that affects a large quantity of the population and is a major cause of severe complications. Diabetes is associated with a doubling of mortality and the severity and prevalence of COVID-19 disease is higher in diabetics compared to non-diabetics. Since its discovery in Wuhan, COVID-19 has spread rapidly and has shown varying degrees of severity. The symptoms which mostly occurs body temperature, lymphopenia, unproductive cough, dyspnea, and fatigue are recognized features of individuals infected with COVID-19 disease. Diabetes and other related comorbidities are major predictors of morbidity and mortality in COVID-19 patients [1]. Recent studies show that SARS-CoV-2 can directly damage the pancreas, exacerbating hyperglycemia and causing diabetes in previously non-diabetic patients or it may re develop. The problem facing diabetics is that having diabetes is more likely to make complications worse than it is to be more likely to catch the virus and it also increases the risk of these serious complications from COVID-19. Older people who become infected with the virus are also at higher risk of complications [2].

Underlying diabetes mellitus and cardiovascular disease are considered risk factors for the increased severity of Corona Virus Disease 2019 (COVID-19) and worse outcomes, including the increased mortality. Possible pathogenic links between COVID-19 and diabetes mellitus include effects on glucose homeostasis, inflammation, altered immune status, and activation of the Renin-Angiotensin-Aldosterone System (RAAS). Drugs being studied to treat COVID-19 may affect glucose metabolism, especially in diabetic patients [3]. Frequent glycemic control and individual dosing adjustments are therefore required, with no definitive treatment for COVID-19 so far, diabetics should adhere to common preventive rules, monitor their blood sugar more often, exercise, eat a healthy diet, and risk factors need to be managed. It is important to remember that people with both types of diabetes may differ in age, the complications they develop, and how well they are able to control their diabetes. People with pre-existing diabetes-related

health problems are likely to have worse outcomes if infected with COVID-19 than other healthy people with diabetes, regardless of type of diabetes [4].

The mechanism of action of metformin may indicate a potential anti-inflammatory effect, which may have beneficial therapeutic effects in patients with COVID-19 and diabetes. There are other antidiabetic therapies that affect the Mammalian Target of Rapamycin (mTOR) pathway, such as pioglitazone and dipeptidyl peptidase 4 inhibitors. In particular, pioglitazone is known to protect against hypoxemia/reoxygenation lesions by enhancing autophagy by the AMP-Activated Protein Kinase (AMPK) mTOR pathway, whereas dipeptidyl peptidase-4 inhibition via the mTOR pathway is known to protect against hypoxemia/reoxygenation lesions. The drug appears to restore insulin secretion by enhancing fat-eating-triggered autophagy in mice. Our study shows that anti-diabetic therapy may influence the clinical outcome of her COVID-19 in Type 2 diabetic patients. Metformin-treated patients had a lower inflammatory index than the insulin-treated group. In particular, a protective role of metformin against inflammatory conditions was demonstrated [5].

### CONCLUSION

The study demonstrates the potential and potential impact of antidiabetic therapy on the development of COVID-19 in patients with type 2 diabetes. Due to its mechanism of action, metformin in particular may be a useful resource for addressing inflammatory conditions associated with SARS-CoV-2 infection in categories of patients at high risk of developing severe disease. This aspect should certainly be explored, clarified, and considered by clinical studies that may change and re-evaluate perspectives on the management and treatment of such disease.

### REFERENCES

1. Saeedi P, Petersohn I, Salpea P, Malanda B, Karuranga S, Unwin N, et al. Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the international

**Correspondence to:** Corrao Matilla, Department of Endocrinology, Autonomous University of Madrid, Madrid, Spain, E-mail: Matilla\_c@edu.com

**Received:** 05-Dec-2022, Manuscript No. DCRS-22-19781; **Editor assigned:** 08-Dec-2022, PreQC No. DCRS-22-19781 (PQ); **Reviewed:** 29-Dec-2022, QC No DCRS-22-19781; **Revised:** 06-Jan-2023, Manuscript No. DCRS-22-19781 (R); **Published:** 16-Jan-2023, DOI: 10.35841/2572-5629.23.8.137

**Citation:** Corrao M (2023) Complications and Risk Factors of COVID-19 in Diabetic Patients. Diabetes Case Rep. 8:137.

**Copyright:** © 2023 Corrao M. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

- diabetes federation diabetes atlas, 9(Th) Edition. Diabetes Res Clin Pract. 2019; 157:107843.
2. Farsani SF, Souverein PC, van der Vorst MM, Knibbe CA, de Boer A, Mantel-Teeuwisse AK. Chronic comorbidities in children with Type 1 Diabetes: A population-based cohort study. Arch Dis Child. 2015; 100(8):763–768.
  3. Iglay K, Hannachi H, Joseph Howie P, Xu J, Li X, Engel SS, et al. Prevalence and co-prevalence of comorbidities among patients with Type 2 diabetes mellitus. Curr Med Res Opin. 2016; 32(7):1243–1252.
  4. Carey IM, Critchley JA, DeWilde S, Harris T, Hosking FJ, Cook DG. Risk of infection in Type 1 and Type 2 diabetes compared with the general population: A matched cohort study. Diabetes Care. 2018; 41(3):513–521.
  5. Coppelli A, Giannarelli R, Aragona M, Penno G, Falcone M, Tiseo G, et al. Hyperglycemia at hospital admission is associated with severity of the prognosis in patients hospitalized for COVID-19: The Pisa COVID-19 Study. Diabetes Care. 2020; 43(10):2345–2348.