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A Systematic Review of Relation between COVID-19 and Diabetes

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ABSTRACT

To study compactly the general quality of the novel coronavirus (SARS-CoV-2) and provide a well understanding and treatment of the coronavirus disease (COVID-19) in persons with diabetes. Diabetes-related to incidence & death in COVID-19 patients. Inflammation, hypercoagulation, impaired immunity can lead to increased morbidity and death. Evidence does not support the discontinuation of ACEIs, ARBs or thiazolidinediones. Chloroquine use can cause hypoglycemic events in people with diabetes and COVID-19. Inflammation, hypercoagulation, impaired immunity can lead to increased morbidity and death. Evidence does not support the discontinuation of ACEIs, ARBs Or thiazolidinediones. Chloroquine use can cause hypoglycemic events in people with diabetes and COVID-19.

Key Words: COVID-19, Inflammation, Diabetes, SARS-CoV-2

INTRODUCTION

Although most human coronavirus infections are mild, major two beta-coronavirus outbreaks, severe SARS-CoV in the 2002–2003 period, and Middle East Coronavirus Respiratory Syndrome (MERS-CoV) in 2012 have caused fatal pneumonia, with increasing mortality. Multilateral pneumonia Coronaviruses have enveloped positive RNA viruses that are widely spread to humans and animals all over the world.¹ To include a brief overview of the general characteristics of COVID-19, as well as a more detailed explanation and critical assessment of the relationship between this emerging infectious disease and diabetes, we performed a scope analysis. We hope this analysis will provide useful knowledge for future studies and eventually lead to improved clinical management of COVID-19 and diabetes patients.¹ The COVID-19 pandemic poses a health threat to humanity like never before. And people with diabetes, as in many other cases, are paying a very high price. Unfortunately, statistics indicate that people with diabetes are at greater risk for COVID-19 and the prognosis is very low. Due to the constraints imposed by many governments, they also have to face tough challenges in the daily management of their disease in having required treatments as well as the

requisite help from specialists and other healthcare professionals, all completely engaged in the COVID-19. Around the same time, they are not getting the most effective care while treated in such a challenging health crisis.

Rates of Diabetes and Obesity in Subjects with Coronavirus Infections

Diabetes is associated with an elevated risk of serious bacterial and viral infections in the respiratory tract including influenza H1N1. A study of more than 500 individuals hospitalized with SARS-CoV in China showed that increased death levels were associated with elevations in fasting glucose; however, hyperglycemia was mostly transient and generally resolved after discharge from hospital in the majority of subjects.³

Diabetes, Infection, and Immune Responses

Acute respiratory virus infection has been linked to the rapid development of transient insulin resistance, whether in otherwise stable individuals with normal euglycemic weight or overweight. In addition, cancer, serious disease, and drugs such as glucocorticoids impair insulin sensitivity and therefore need hospital modification of glucose-lowering medi-

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cations and insulin dosage. Infectious diseases worldwide contribute to excess mortality in diabetes sufferers.³

Use of Glucose-Lowering Therapies in Subjects with Coronavirus Infections

In preclinical studies, metformin exerts anti-inflammatory action and decreases circulating inflammatory biomarkers in people with T2D.⁴ Metformin has also been widely used in non-hospitalized subjects with stable hepatitis or HIV infections; however, information on metformin's immunomodulatory activities in the sense of coronavirus infection is scarce. Several studies investigating antibody titers in a limited number of individuals have indicated that immune responses to influenza vaccination in metformin-treated subjects are modestly impaired; however, the clinical relevance of these findings, if any, is unclear. Metformin should be used with caution in depressed hospitalized patients and stopped in persons with chronic sepsis.⁵

Type 1 Diabetes and SARS-CoV-2

The knowledge available does not suggest that children or adults with T1D are more vulnerable to coronavirus infections. People with T1D can find that interrupting regular daily activities, changing exercise form and duration, and changing dietary habits can alter glucose regulation, requiring re-examination of the insulin requirements.⁶ The available evidence does not suggest that children or adults with T1D are more vulnerable to coronavirus infections. People with T1D may find that interrupting regular daily activities, changing exercise form and duration, and altering dietary habits will alter glucose regulation requiring re-examination of the insulin requirements.⁷

Implications on diabetes management

We have assembled a simple flowchart for the metabolic testing and care of COVID-19 patients or those with a risk of metabolic disease. The clinical significance of the above mechanisms is currently not clear, but the effects on patients living with diabetes should be known to health care providers. These include guidelines both for the prevention of primary diabetes and the prevention of serious diabetes-related sequelae (figure). Further, the panel provides detailed guidance on anti-diabetes drugs commonly used in COVID-19 patients with type 2 diabetes.⁸

To stop the coronavirus that triggers COVID-19 everybody must be alert. I have diabetes type 1 or type 2 then can be even more vigilant. Your chance of contracting the virus is no greater than that of anyone else. But if do get sick, might have worse complications. That's especially true if diabetes isn't regulated properly.

To lower the risk of being infected:

- Hold distance from others

- Provide good hygiene
- Keep blood sugar in order⁹

Diabetes and Coronavirus

Approximately 25% of people with grave COVID-19 infections have been hospitalized with diabetes in recent studies. Patients with diabetes were more likely to suffer serious complications and die from the infection. One explanation is that high blood sugar weakens the immune system and reduces its ability to prevent infections. If another disease, such as heart and lung diseases, is present, the risk of serious coronavirus infection is much higher. The risk of diabetes complications like diabetic ketoacidosis (DKA) from infection may be increased if get the COVID-19. DKA occurs when blood builds up at elevated levels of acids known as ketones. This can be very dangerous.⁹

Tips to Avoid Infection

Staying home as soon as can, is the safest way to stop getting sick. According to the American Disability Act, persons with diabetes have the right to "reasonable workplace accommodation," which includes the right to work at home or to leave when required. When out and when get home or using a hand sanitiser, wash your hands regularly. Position self at least 6 feet from other people when have to leave and wear a face mask of textile. Wash hands until a finger stick or insulin shot is given. First, clean any place with water and soap or rub alcohol.⁹

COVID-19 Diabetes Plan

Social distancing and shelter-in-place regulations can make it more difficult to get the supplies to need. Stock up enough supplies to last for a few weeks, in the case are quarantined.

Make sure you have:

- Simple carbs like honey, sugar-sweetened soda, fruit juice, or hard candies in case your blood sugar dips.
- A maximum number of refills from insulin and other medicines you can get.
- Extra glucagon and strips of the ketone.
- Your phone and health insurance company telephone numbers.⁹

Medicare and other private insurance providers also cover expenses relating to telehealth visit

- How often to check for sugar and ketones in your blood.
- How to change the medications for your diabetes if you are sick.
- Every cold and flu treatments you can take are free.

To Do is Get Sick

I begin to feel sick, then stay home. Check the sugar in the blood more often than usual. COVID-19 may lower appetite and may cause to eat less, which may affect levels. If are sick

will need more fluids than normal. Hold water close by, and sometimes drink it.⁹ Diabetes is a chronic disease that occurs when the insulin is no longer produced by the pancreas, or when the body can not make good use of the insulin it produces. Insulin is a pancreatic hormone that acts as a gateway to enable glucose from the food we consume to pass from the bloodstream into the body's cells to generate energy. All foods made with carbohydrates are broken down into blood glucose. The epidemiology of diabetes is evident from many GBD studies.¹⁰ Effects of diabetes on various body systems and proneness to infections have been reported in several studies.¹¹ Subhadarsanee et al compared Coronavirus Disease and Diabetes as the interplay of two pandemics.¹²

CONCLUSION

The rapid flow of clinical news from the SARS-CoV-2 epidemic requires ongoing monitoring to understand the conservative uses, risks and benefits of individual glucose-related agents and medicines commonly used in high-risk individuals, or those hospitalized with coronavirus-relevant diabetes. The pandemic emphasises that wearables and portable monitors and the regular communication among diabetes and their health care practitioners must continue and expand innovative diabetes treatments.

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