

Endocrinology & Diabetes Research

Prespective

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The Connection between Type-2 **Diabetes and COVID-19**

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Introduction

Type 2 diabetes is a long-term health condition where the sugar level in the blood is high. This happens because the body has trouble using insulin and not enough insulin is produced. It could be a big problem for everyone's health, and the number of people affected has been increasing steadily over the past few decades. The COVID-19 pandemic, caused by the SARS-CoV-2 virus, has shown that people with type 2 diabetes are more likely to get very sick or die from the infection. This article is about the connection between type 2 diabetes and COVID-19. It will discuss how diabetes affects the results of COVID-19, the possible reasons for this relationship, and ways to reduce the risk of severe COVID-19 in people with type 2 diabetes.

Description

The effects of type 2 diabetes on the results of COVID-19

Some research has shown that people with type 2 diabetes have a higher chance of getting seriously ill from COVID-19. This includes being hospitalized, needing intensive care, being put on a ventilator, and even dying [1,2]. A study that looked at a lot of research found that people with diabetes have a higher chance of getting really sick from COVID-19 compared to people without diabetes. They are more likely to be hospitalized, need intensive care, need a machine to help them breathe, or even die [3].

People with type 2 diabetes may have a worse outcome if they also have other health problems like obesity, high blood pressure, or heart disease. For example, a study of more than 17,000 COVID-19 patients who were in the hospital in the United States found that people with diabetes and obesity had a much higher risk of needing intensive care, being put on a ventilator, and dying compared to people who did not have diabetes or obesity [5].

Possible reasons why there is a connection between type 2 diabetes and COVID-19

The reasons why people with type 2 diabetes have a higher risk of severe COVID-19 are not fully understood yet. However, it may involve a mix of factors such as problems with the immune system, inflammation, and issues with blood vessels [6]. When people with type 2 diabetes have problems with their immune system, it may make

it harder for their body to fight off viral infections [7]. This can cause the virus to spread more easily and make the person sicker. Moreover, long-lasting irritation, commonly observed in individuals with type 2 diabetes, could add to the intense immune response observed in severe cases of COVID-19 [8].

Endothelial dysfunction means that the blood vessels are not working properly. This is often seen in people with type 2 diabetes and can make them more likely to have serious problems if they get COVID-19. When the lining of blood vessels doesn't work properly, it can cause problems in small and large blood vessels. This is often seen in people with type 2 diabetes and may make them more likely to have severe COVID-19 [9].

Ways to reduce the chance of severe COVID-19 in people with type 2 diabetes

Because people with type 2 diabetes have a higher chance of getting severely sick from COVID-19, it's crucial to use strategies to reduce this risk. These methods involve improving blood sugar control, managing other health conditions, and following guidelines from health officials to prevent COVID-19 [10]. Managing blood sugar levels is important in reducing the chances of severe COVID-19 outcomes for individuals with type 2 diabetes. The American Diabetes Association recommends that most adults with diabetes should aim to keep their HbA1c levels below 7.0% [11]. This can be achieved by making changes in our daily habits, like eating healthier food and exercising more. It can also be done by taking certain medicines like metformin, sulfonylureas, DPP-4 inhibitors, GLP-1 receptor agonists, and SGLT2 inhibitors [12].

It is also important to manage other health issues like obesity, high blood pressure, and heart disease, along with type 2 diabetes, to reduce the risk of severe COVID-19 outcomes. The treatment for these multiple health problems may include making changes to your daily habits like losing weight, eating better, and doing more exercise. You might also need to take medication to help with high blood pressure and high cholesterol [13,14].

It is important to follow public health guidelines to prevent the spread of COVID-19 and reduce the chances of getting seriously ill from the virus, especially for people with type 2 diabetes. These rules are about wearing masks, keeping a distance from others, washing hands often, avoiding big gatherings, and getting the COVID-19 vaccine [15].

Conclusion

Having type 2 diabetes can greatly increase the chances of experiencing serious outcomes from COVID-19, such as being hospitalized, needing intensive care, being put on a breathing machine, or even dying. The things that are most important in this relationship could be immune system problems, inflammation, and issues with the cells lining blood vessels. There are ways to decrease the chance of getting really sick from COVID-19 for people with type 2 diabetes. These methods include keeping blood sugar levels stable, managing other health problems, and following public health guidelines to avoid catching COVID-19.



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