

Original Research Article

Diabetes mellitus type 2 post Covid 19

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Abstract

Introduction: Type 2 diabetes mellitus is a very common disease in Mexican society; it is difficult to control due to poor dietary habits and a lack of adequate treatment. In this article, we will discuss whether the COVID-19 virus is a trigger for type 2 diabetes mellitus. It is known that in some people, a COVID-19 infection can affect blood glucose levels, but is it really a trigger for developing diabetes?

Objective: To determine how type 2 diabetes mellitus might manifest as a post-COVID-19 condition.

Methodology: An observational, descriptive, cross-sectional epidemiological study was conducted using a questionnaire created in Google Forms, administered to individuals who had contracted COVID-19 and who have been diagnosed with type 2 diabetes mellitus.

Results: The results of the survey administered to 38 people indicate that 94.7% of our sample population has type 2 diabetes mellitus. Furthermore, we found that the most common age was 76 years, accounting for 15.8% of the sample, while the least common age was 22 years, accounting for 1.6%. Upon questioning our participants, we discovered that 82.9% had been diagnosed with diabetes before the COVID-19 pandemic and that 78.9% contracted COVID-19 between 2020 and 2022.

Conclusions: Type 2 diabetes mellitus is one of the leading causes of death in our country; a large portion of the population suffers from this disease from an early age, making it difficult to establish a link between type 2 diabetes mellitus and COVID-19 as a complication.

Keywords: COVID-19, Diabetes Mellitus Type 2

Introduction

Dear reader(s), this article is based on the methodology I used to teach public health to third-semester students in the Bachelor of Medicine and Surgery program, on the one hand, to encourage future physicians to learn how to conduct research that will, in some way, help them as doctors in the future to stay up to date, to know how to search for scientific information, and to improve the quality of care they provide to their patients, as well as to gain experience participating in conferences. At some point, I will dedicate time to publishing the methodology for teaching public health.

It has been demonstrated that diabetes mellitus (DM) is associated with a poor prognosis for COVID-19. Recent research shows that diabetic patients with COVID-19 frequently experience uncontrolled and sustained hyperglycemia requiring exceptionally high doses of insulin, or episodes of acute hyperglycemic crisis [1].

Research teams observed that beta cells infected with SARS-CoV-2 stopped producing insulin. In Jackson's study, infected beta cells died by apoptosis, a genetically programmed sequence of self-destruction initiated by damaged cells [2].

The presence of chronic inflammation in diabetes, impaired immune system response, and coagulation abnormalities may influence the underlying pathophysiological mechanisms that contribute to increased morbidity and mortality from COVID-19 [3] [12].

Epidemiological data showed many years ago that type 1 diabetes is most commonly diagnosed following an acute illness, such as viral gastroenteritis or the flu. It is known that this preceding illness causes the body's immune system to increase the production of all antibodies, including preexisting ones, such as those directed against the insulin-producing islet cells of the pancreas [4].

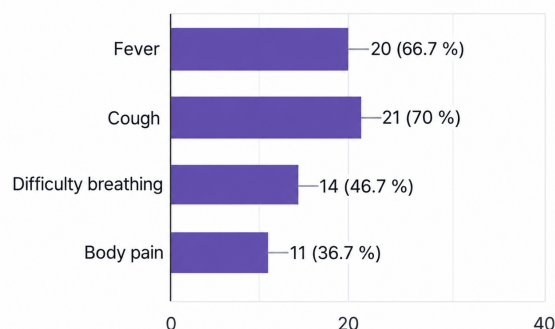
This may be related to prior stress-induced hyperglycemia, steroid-induced hyperglycemia, or direct or indirect effects of SARS-CoV-2 on the pancreatic islet β -cells [5].

However, to date, no study has systematically synthesized the available evidence on the association between COVID-19 and new-onset diabetes [5].

It is essential for both clinicians and researchers to identify the potential association between COVID-19 and type 2 diabetes mellitus, as this could help design more effective treatment strategies, improve patient care, and guide future research [6].

Select the symptoms that you had with COVID-19

30 responses



Objective

To determine whether there is an association between having had COVID-19 and the development of type 2 diabetes mellitus as a post-COVID-19 complication.

Research question

Is COVID-19 a trigger associated with type 2 diabetes? Could type 2 diabetes mellitus manifest as a post-COVID-19 complication?

Method

An observational, descriptive, cross-sectional epidemiological study was conducted using a questionnaire created in Google Forms, administered to young people and adults who had contracted COVID-19 and who had been diagnosed with type 2 diabetes mellitus prior to their COVID-19 infection. The study included 38 respondents. Statistical analysis was performed within the Google Forms platform.

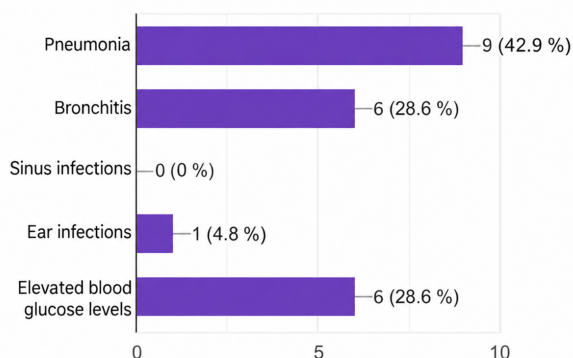
Results

The results of the survey administered to 38 people indicate that 94.7% of our sample population has type 2 diabetes mellitus; the predominant gender affected by this disease is female, accounting for 57.9%, while males account for only 42%. It was also found that the most common age is 76 years, accounting for 15.8% of the sample, while the least common age is 22 years, accounting for 1.6%.

Upon surveying our population, we discovered that 82.9% had been diagnosed with diabetes before contracting COVID-19, and that 78.9% contracted COVID-19 between 2020 and 2022. 63.2% of our sample stated that they were monitoring their blood glucose levels before contracting COVID-19, and only 12.1% reported having been hospitalized for COVID-19.

After the COVID infection, did you have any of the following complications?

21 responses



Discussion

The results show that a small percentage of our study population has had elevated blood glucose levels as a complication of COVID-19; however, this is not a trigger for type 2 diabetes mellitus, since 82.9% of the population had already been diagnosed with diabetes before COVID-19.

Nevertheless, age is an important factor in the development of type 2 diabetes mellitus, as the results show a higher prevalence among people over 70 years of age [12].

While one of the limitations of a study of this nature is the sample size, it is important to note that it is not easy to encourage participation, especially when dealing with a chronic disease where patients may even deny having [T2DM]; however, the fact that students are involved in the research process is significant, and its importance will become evident in the future of medicine.

It is difficult to establish a link between type 2 diabetes mellitus and COVID-19 as a result of [13]. Although some studies indicate a relative risk greater than 1, it remains unclear whether the condition was truly new-onset diabetes or cases that had gone undiagnosed prior to the COVID-19 infection [14]; due to limited participation, this study does not demonstrate an association regarding what is termed post-COVID-19 diabetes.

Conclusions

Type 2 diabetes mellitus is one of the leading causes of death in our country; a large portion of the population has suffered from this disease since an early age, making it difficult to establish a link between type 2 diabetes mellitus and COVID-19.

According to the study, it can be inferred that there is no association between type 2 diabetes mellitus and COVID-19, since the majority of the population surveyed reported having diabetes prior to the emergence of the virus in 2020.

Conflict of interest. The authors declare that there is no conflict of interest regarding the publication of this article.

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