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Mini Review

Impact of Pandemic on Maintenance of Glycemic Control of People with T1DM in Brazil

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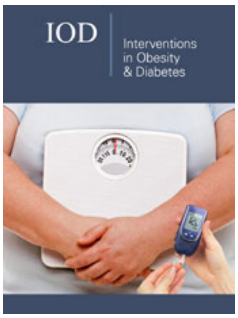

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Abstract

DM, a chronic disease with high rates of morbidity and mortality. Metabolic disorder, characterized by hyperglycemia. There were impacts of social isolation on glycemic control of T1DM. Field research using exploratory analysis criteria, quantitative characteristics. Collection by online questionnaire applied in Brazil. Reduced physical activity, increased anxiety and stress. Initial hypothesis: negative impact on glycemic control. The hypothesis was refuted, there was a predominance of positive interference in blood glucose.

Keywords: Diabetes mellitus; Hyperglycemia; Pandemic; Social isolation

Abbreviations: DM: Diabetes Mellitus; T1DM: Type 1 Diabetes Mellitus; T2DM: Type 2 Diabetes Mellitus

Introduction

Diabetes Mellitus (DM), an important public health problem, reaches alarming population levels. Estimated global prevalence in 2019 was 9.3% (463 million people), with a respective increase to 10.2% (578 million) by 2030 and 10.9% (700 million) by 2045, of which half are unaware having the disease [1]. Understood as a metabolic disorder of heterogeneous etiologies, defined by hyperglycemia and disturbances in the metabolism of carbohydrates, proteins, and fats, resulting from defects in secretion and/or in the action of insulin, being classified into Type 1 Diabetes Mellitus (T1DM), Type 2 Diabetes Mellitus (T2DM) and other specific types [2]. The disease requires drug and non-drug treatment, application of exogenous insulin (for immediate correction of hyperglycemia), the implementation of a balanced diet, monitoring of blood glucose and the regulation of these with the practice of daily physical activity [3]. During the pandemic of the new coronavirus, different ways of combating the virus were obtained, of which some countries opted for social isolation due to the high transmissibility [4]. In the face of social isolation, some daily activities were interrupted and/or hindered. Considering that physical activity and a balanced diet influence glycemic control, the lack of these corroborates the lack of glycemic control, changing people's quality of life [5]. People started to spend most of their time at home, restricted to outside physical activities and, consequently, with changes in eating habits. According to the Brazilian Diabetes Society-SBD (2019) [6], the practice of regular physical activity has a positive effect in several aspects: improvement of cardiorespiratory capacity, body composition (decrease in fat mass and increase in lean mass), bone mass and insulin sensitivity, but also promotes psychosocial well-being. According to Snoek et al. [7], the stress associated with diabetes can have considerable interference in glycemic control, being able to act directly in the deregulation of stress hormones or indirectly, as a greater emotional load reduces the adherence to the forms of treatment of the patient DM. Therefore, it is assumed that this group of people may be exposed to an increased risk of hyperglycemia and, consequently, to poor glycemic control. Given the importance of the connection between COVID-19 and DM, the objective is to verify the impacts of social isolation on the glycemic control of people with T1DM, having as an initial hypothesis that during the pandemic activity restrictions, together with stress and anxiety generated by social isolation, would be a negative factor for glycemic control.

Discussion

The sample size was 71 T1DM from 15 Brazilian states. Many reports having other pathologies, but the majority of the population has fulfilled social isolation. According to the WHO (World Health Organization) [4], the evidence to date suggests that two groups of

people are at greater risk of getting serious from Covid-19, they are the people of older age and those who have an underlying medical condition. People who have T1DM fit into the population at risk, which leads them to be more careful about the restrictions imposed and social isolation. It is concluded that there was a reduction of 15.4% of those who always practiced physical activity and an increase of 14.1% of those who claimed to never practice physical activity in comparison to the period of social isolation. According to SBD [6], the practice of physical activity is fundamental for the control of diabetes, since it increases the uptake of glucose by the muscles and, consequently, decreases the amount of circulating glycemia, as well as improves the cardiorespiratory capacity, decreases of fat mass, and increase in lean mass.

In relation to food, complying with the proper diet is a fundamental part of the treatment of T1DM, since an unhealthy diet, with the intake of foods rich in fats, disrupts the hepatic metabolism of drugs, negatively affecting insulin therapy. On the other hand, a proper diet with foods that contain anti-aging gene activators can improve this metabolism, contributing to the success of insulin therapy. Also, a good diet contributes to the control of glycemic levels, as well as food fractionation prevents hypoglycemia [5,8]. More than half report that there was a positive change in glycemic control. Therefore, there is a hypothesis that this result is related to better time management and the knowledge that isolation could influence your glycemic control [9]. Because of this, some actions were implemented to prevent the disease from being uncontrolled. Social isolation can cause possible interferences/impacts on glycemic control and the majority reported having knowledge.

Conclusion

The pandemic period generated an emotional aggravation in the entire population and taking into account that stress and anxiety incisively interfere in glycemic control, the importance of assessing the impacts caused by the pandemic in the control of Diabetes was observed. Situations resulting from isolation were identified that made it difficult to maintain this control. Among them, the reduction of the practice of physical exercises after the pandemic, which is a fundamental activity for the control of T1DM. People took actions to better manage the disease, the main ones being an increase in the frequency of checking blood glucose followed by healthy eating.

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