

Nutritional Reversal of Type II Diabetes in the Elderly: A Case Report

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ABSTRACT

According to the CDC, Type II Diabetes Mellitus (T2D) patients are at increased risk of severe complications from COVID-19 pandemic 1 especially the elderly. T2D is increasing in the United States, with over 10% of the population is estimated to have T2D in 2018. The US population over the age of 65 have a much higher prevalence estimated at over 26%. This case report is about a successful reversal of early stage T2D in a 65 year old North African American male using only nutritional therapy guided by laboratory testing from his physician. After 6 weeks on the nutritional program the patient blood sugar normalized, and after three months his HbA1C went down from 6.9 to 5.4.

Keywords: Type 2 diabetes mellitus; Diet; Nutrition; T2D; Nutritional intervention

INTRODUCTION

According to the CDC, T2D patients are at increased risk of severe illness from COVID-19 pandemic 1 especially the elderly. This report is about a diet plan specifically designed to reduce HbA1C in prediabetic patients with HbA1C up to 6.9. A 65 year old North African American male patient presented to a nutrition practice in November 2019 with 6.6 HbA1C, seeking nutrition advice on lowering HbA1c without using medication. His history was

significant for chronic migraines, hyperlipidemia, general anxiety disorder, and benign prostatic hyperplasia, the latter causing him nocturnal polyuria, burning sensation, and pain in the groin area. His current medication included Lipitor, Mirtazapine, Citalopram, Clonazepam, and Tamsulosin. The patient HbA1c has been hovering above the normal range for a few years before diagnosis. The patient diagnosis and treatment are outlined in the timeline (Table 1).

Table 1: Timeline.

Date	Description
23-10-2019	The patient visited the gastroenterologist specialist complaining of flatulation. Blood drawn on-premises and sent to the lab. The patient asked for HbA1c to be checked as it has been above range for a while.
05-11-2019	Initial nutrition consultation: BSF: 109-137 PPBS: 110-137 Nocturia: up to 8 times with burning sensation Pain: around the groin area Nutritional program targeting high blood sugar, nocturnal polyuria, burning, and groin pain designed and emailed.
06-11-2019	A follow-up visit with the gastroenterologist to discuss blood test results. Hemoglobin A1c: 6.6, fasting glucose: 137. Physician diagnosis: Type II diabetes. No medication prescribed.
06-01-2020	Follow up nutrition consultation: BSF: 99-100 Nocturia: none Pain: none Intervention stopped after 4 weeks. Patient will do 2 more weeks.
16-01-2020	Follow-up with gastroenterologist about flatulence and diabetes. Blood drawn and sent to lab for testing.
20-01-2020	Follow up nutrition consultation: to discuss blood test results: HbA1c: 5.7. Fasting glucose: 100. Patient stopped the added 2 weeks intervention one week ago. Adverse reaction Cholesterol total: 328.
22-05-2020	Doctor visit to discuss the latest blood test: HbA1c: 5.4. Fasting glucose: 104. Cholesterol total: 178.
23-05-2020	Final nutrition consultation. Patient happy.

CASE REPORT

Narrative

A 65 year old male came with frequent nocturnal polyuria, burning sensation, and groin pain. His past medical history showed high

chronic migraines, hypoglycemia, hyperlipidemia, general anxiety disorder, and benign prostatic hyperplasia. At the time of the first visit, the patient was on the following medication: Lipitor 40 mg, Mirtazapine 30 mg, Citalopram 40 mg, Clonazepam 0.5 mg, and Tamsulosin 0.4 mg. In 2016, the patient was successfully reversed

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chronic acid reflux using nutritional intervention, which prompted him to seek nutritional intervention to control his diabetes after being diagnosed in October 2019. In November 2019, the patient was evaluated in an integrated nutritional program developed for prediabetic patients. The patient came in for follow up visits two times over 6 months. Initial laboratory testing and anthropometric measurements showed an over the normal range HbA1C 6.6 (Table 2). By the end of January 2020, during his second visit, the patient stopped the nutritional program after being on it for 6 weeks with laboratory testing showing improved HbA1C 5.7 and a reversal of nocturnal polyuria, burning sensation, and groin pain. In May 2020 and 4 months, after the patient stopped the nutritional program, his laboratory testing showed that his HbA1C was lowered to 5.4.

Table 2: Diagnostics.

Date	Type	Value	Unit
24-10-2019	HbA1C (hemoglobin A1C)	6.6	
24-10-2019	FBS (fasting blood sugar)	137	mg/dL
20-01-2020	FBS (fasting blood sugar)	100	
20-01-2020	HbA1C (hemoglobin A1C)	5.7	
22-05-2020	FBS (fasting blood sugar)	104	mg/dL
22-05-2020	HbA1C (hemoglobin A1C)	5.4	

Perspective

I come from an urban community in Casablanca, Morocco. My parents lived into their 80's. They rarely took medication, and overall were healthy without any diagnosis. I was 33 years old when I moved to America. I have been an NYC taxi driver for 30 years. In the last 4 years, my health started declining, and I started taking several medications. When I was diagnosed with type II diabetes, I was scared and worried about becoming diabetic and taking more medication; that is when I contacted holistic aid seeking nutritional therapy. The success of my prior interaction with holistic aid nutrition program for my chronic acid reflux leads me to seek nutritional therapy for my new diagnosis. Going from 6.6 to 5.4, made me feel great, and I am no longer anxious about becoming diabetic, especially at my age (65). I am grateful I am sleeping better, free of nocturnal polyuria, groin pain, or burning sensation.

DISCUSSION

In 2018, about 34.2 million people in the United States of all ages have T2D. Among them, 78% or 26.8 million are over the age of 65 [1]. The phenomenon known by the graying of America has been defined by the rapid growth of the population age 65 and older, which increases by 75% compared to 30% growth for under 65 [2]. In developing countries older patients constitute the majority of the patients with T2D [3].

T2D in the elderly with treatment management may still lead to traditional diabetes associated complications, including

atherosclerosis, CVD, cognitive impairment, increased fall risk and urinary incontinence, and chronic inflammation, not to forget blindness, neuropathy, and renal failure [3]. The patient in this report has opted for a nutritional intervention to prevent the development of T2D and in fear complications mentioned above, and for the amount of medication he is already on.

The patient followed a nutritional program developed for early stage T2D for 4 weeks, then he stopped for two weeks, and added another two weeks to successfully reverse T2D within 6 months. The program consisted of three pillars: Evidence based T2D 6.9 diet plan (see Appendices A), lifestyle changes (see Appendices B), and mindset discussion (see Appendices C) [4-56].

Adverse effect

While on the program, the patient suddenly stopped the cholesterol medication after 16 years and caused his total cholesterol to increase to 328. After taking his medication, his total cholesterol went back down to normal ranges.

Study limitation

This diet plan is not for everyone. It takes discipline, dedication, and mind-set work to achieve this report's results, especially with patient adherence which may be remedied by making the patients take their blood sugar measurements daily.

CONCLUSION

This diet intervention is a simple, short term, easy to follow, safe, and effective program to reverse T2D in older age without medication. The patient HbA1C kept improving even after the program has been stopped for three months. We believe that this diet plan can become a first option for treatment for pre-diabetes. However, further prospective studies are needed on large cohorts of patients to quantify the long term impact, and we believe this retrospective case study which represents one of many successfully treated patients is a useful and illustrative starting point.

CONSENT

Written informed consent was obtained from the patient for publication of this case report.

COMPETING INTEREST

The authors declare that they have no competing interests, and no funding was provided for this research.

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