platos

JB went from baseline HbA1c of 12.1% to 5.3% in 3 months

Learn how Platos enrollee achieved better outcomes while reducing the use of diabetes-specific medication by 50%

Platos chronic disease care platform is already saving costs for hundreds of people in Nigeria. Diabetes is a chronic disease requiring long-term care to prevent and delay complications. Caring for diabetes and its complications is expensive: In 2021, about USD 966 billion was spent on diabetes treatment and this is projected to increase to about USD 1,028 billion and USD 1,054 billion in 2030 and 2045 respectively (1, 2). People living with diabetes are also overwhelmed with decreasing access to care, and specialists, and increasing cost of medications within Nigeria and Africa. Platos diabetes program focuses on the core of diabetes management which is lifestyle. This is helping enrollees save costs, provide access to care, and ultimately empower patients to take charge of their life.

Case Summary:

JB is a 55-year-old surveyor who lives in a remote part of Abuja, Nigeria. He enrolled for Platos Diabetes through Platos online diabetes clinic, having been diagnosed with diabetes mellitus (DM) at a nearby pharmacy, following a five-week history of passing large volumes of urine (polyuria), excessive thirst (polydipsia), and weight loss. Before that, he was not diagnosed with prediabetes and had no family history of diabetes. After an online search about his symptoms, he suspected diabetes. He went to a nearby pharmacy for a blood glucose check which was said to be in the diabetic range (random blood glucose 279 mg/dl (15.5mmol/L)). There was no history suggestive of renal, cardiac, neurological, or visual impairment though he complained of erectile dysfunction. He had poor knowledge of a healthy diet and was not physically active. His blood pressure was normal (109/66mmHg), but he was obese (weight-93kg, BMI-32 kg/m2) with associated dyslipidemia at presentation. His baseline fasting blood glucose was 336.6 mg/dl (18.7 mmol/L), 2-hours postprandial was 361.8 mg/dl (20.1 mmol/L) and HbA1c was 12.1%.

Diet Prescription: A high-fiber, low-fat diet approach was recommended for JB. He was recommended a daily 1500-calorie intake with a daily maximal macronutrient intake of 187g carbohydrates, 75g protein, and 50g fat per day. Nutrition education was delivered during consultations and in the e-learning diabetes self-management curriculum especially on carbohydrate counting, portion control, and healthy eating to achieve a calorie deficit and normoglycemia.

Figure 1 shows the changes in FBG, HbA1c, Weight, and doses of Gliclazide over the first 14 weeks. The FBG dropped from 336 to 109 mg/dl. The HbA1c dropped from 12.1 to 5.3%. His body weight dropped from 93 to 91.7kg. The dose of gliclazide was reduced from 60mg to 30mg at the end of week 5 and discontinued at the end of week 13, while the metformin dose was maintained at 1000 mg twice daily.

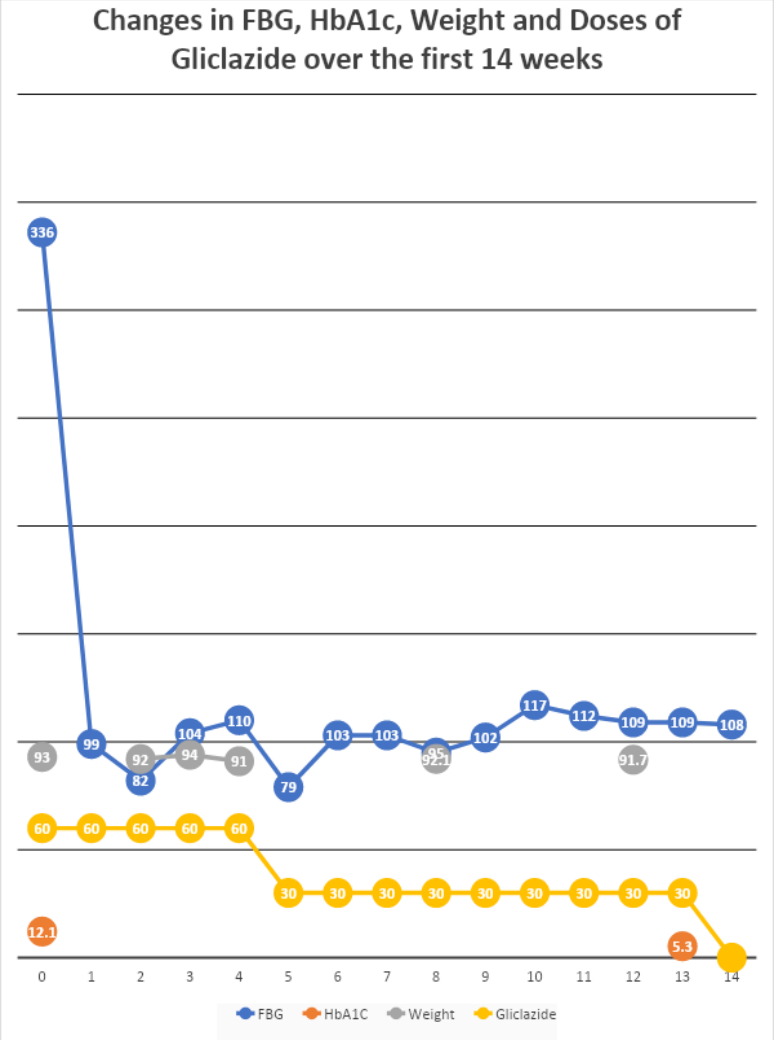

Figure 2. *Changes in FBG, HbA1c, Weight, and Doses of Gliclazide over the first 14 weeks*

Discussion

Previous studies have shown significant improvement in HbA1c in telehealth patients when compared with the usual care group.(12, 13) This result is particularly important in Nigeria where human resource for health is in short supply and where more than half of the population lives in rural settings with little or no access to diabetes care. The index patient sought a virtual diabetic clinic because he wanted to be able to access quality care from wherever his busy job may take him. For many Nigerians, remote access to diabetes specialty care is very crucial. For JB, Platos chronic disease care platform helped him to overcome the barrier to accessing his needed care. This is in keeping with the current global trends of improved access to diabetes specialty care through telemedicine.

Within the first two weeks of treatment, the patient achieved good glycemic control and the downward trend was maintained till the end of the first month. This was achieved with the combined effect of adherence to the Platos model of treatment: diet, physical activity, and medications. The consistent decline in FBG indicated that the medication was no longer required at the initial doses. This is evident by the maintained glycemic control even after a 50% reduction in the dose of gliclazide at the end of the fifth week and its discontinuation at the end of the thirteenth week. This result also suggests a possible diabetes remission in its early phase. Type 2 diabetes is said to be in remission when HbA1c of 6.5 mmol/L is achieved and maintained for 1 year with diet and lifestyle adjustment without any hypoglycemic agent other than metformin or no hypoglycaemic agent(14,17) This patient has been able to maintain glycemic control since the discontinuation of gliclazide.

The decrease (-1.3%) in weight is also integral in improving glucose control studies have shown % drops in weight

The decrease (-6.8%) in HbA1c within a three-month period in this patient is significant. A meta-analysis by Cong Wu et al, observed that the average change in HbA1c in the telehealth group was approximately -1.22% when the baseline level of participants was 9.0% or above and the average change in HbA1c was approximately -0.35% when the baseline level was lower than 9.0%. (8) Our result showed a better outcome; however, this has to be interpreted in the context of a single case report when compared to a more robust meta-analysis. Nonetheless, this result shows that glycemic control in T2DM can be effectively and safely achieved in Nigeria by the Platos telehealth approach.

Limitation

This is a case report, with only preliminary results, so, the generalizability is limited. More robust study to demonstrate the effectiveness of the Platos model of diabetes management is underway.

Outcomes are self-reported rather than measuring them directly. We relied on the HbA1c measurement provided by the patient so the possibility of measurement error could not be independently ruled out. However, efforts were made to ensure the tests were done in the same laboratory to reduce the chances of interobserver measurement errors. Also, previous research has found that these self-reported health outcomes can be reliable. (15, 16)

Conclusion

Platos Diabetes employs carbohydrate restriction, physical activity, diabetes self-management education (DSME), and behavioral coaching to achieve normal glucose levels, reduced reliance on medication, and patient empowerment. This case report provides preliminary evidence that the Platos model is effective and safe. It also shows that T2DM can be successfully treated in Nigeria via a digital platform. A more robust study is underway to further examine the generalizability of these findings.

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