# Diabetes Type 2 Management

Thuy Ha Trinh, FNP-BC, MSN, RN, DNP, Shannon Harris, DNP, FNP-BC, TTS, CCRN, DNP
Advisor; Antony Labady, MD, Preceptor
University of South Alabama

Introduction

- Diabetes is a complex and chronic disease.

- Patients with diabetes may suffer complications such as microvascular and macrovascular diseases [1].

- In 2018, the prevalence of diabetes is estimated to affect 34.2 million people or 10.5% of the US population [2].

- About 1 in 10 adults in Georgia has diabetes, a health condition that can be prevented with weight loss and lifestyle changes [3].

- In 2018, diabetes-related emergencies accounted for 17 million emergency room visits, with 248,000 for hyperglycemia and 242,000 for hypoglycemia [4].

- The purpose is to implement a personalized, clinic-based diabetes management program with healthy lifestyles, reduce hemoglobin A1c, and prevent diabetic complications.
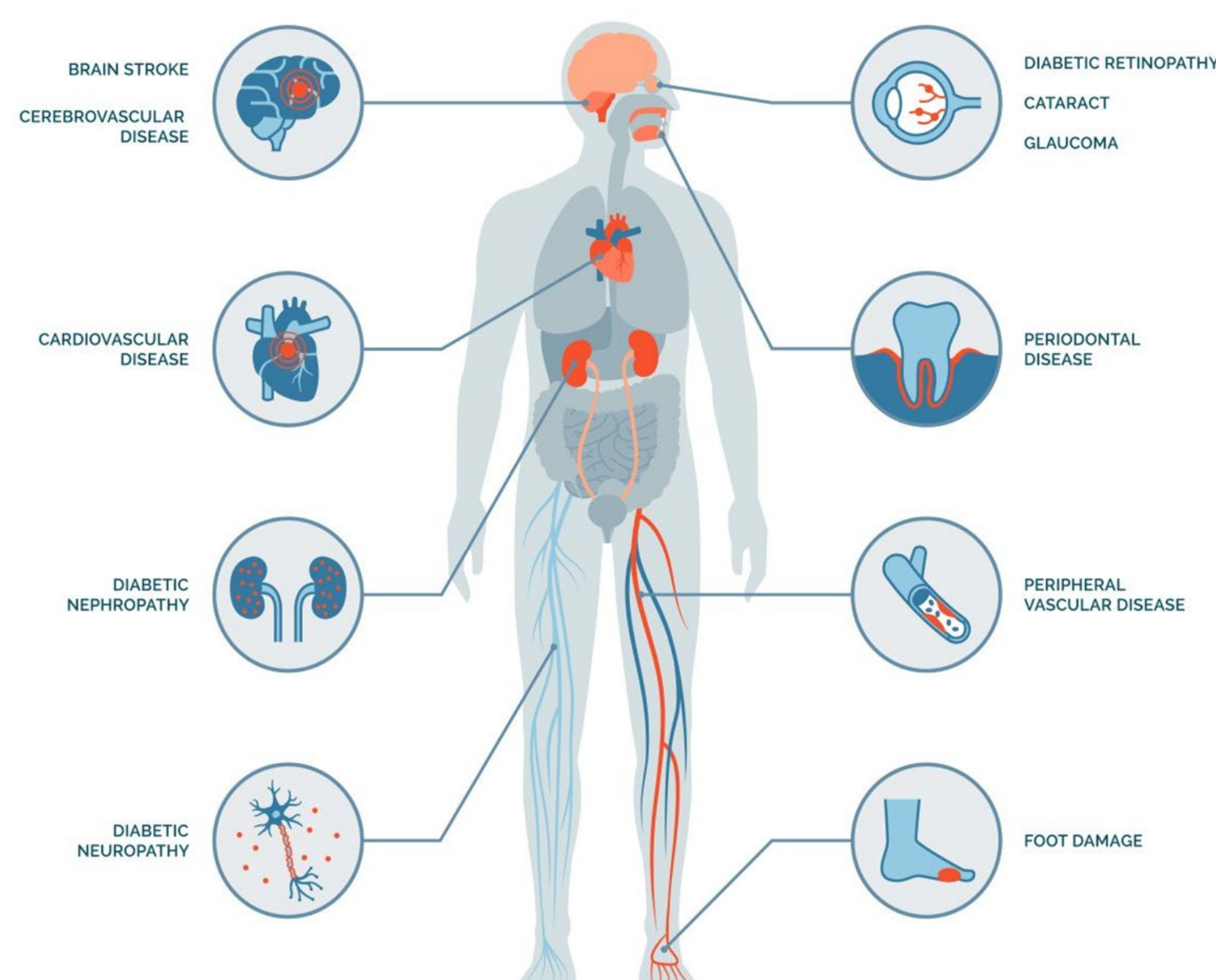

Methods

- Inclusion criteria: patients with type 2 diabetes (T2D), 18 years +

- Exclusion criteria: type 1 diabetes, pregnancy, and cognitive impairment.

- Participants will be updated by a general practitioner every two weeks on the progress of physical activity, nutrition, and medication adherence.

- The International Physical Activity Questionnaire (IPAQ) assesses a patient's physical activity throughout the week [5].

  - The questions assess the time participants spent being physically active in the last seven days, how many hours per day, and days per week.

- The Malnutrition Universal Screening Tool (MUST) assesses patients for malnutrition or obesity [6].

  - The tool measures the height and weight of a patient to get a BMI, percentage of weight loss, and assess for acute disease effects.

  - Dietitian referral -when participants are identified with malnutrition or need further education on diet.

- After three months, the participants will complete a survey and blood work.

Results

- After three months, participants have shown improvement with HbA1c, although some have not met their optimal goal.

- Participants' HbA1c average was estimated to be 10.36 (2.390 SD), and after intervention, the HbA1c average was estimated to be 8.23 (2.221 SD).

- The survey showed that patients had moderate success in managing blood sugar, with 20.8% feeling confident.

- A Pearson correlation coefficient was calculated for the relationship between participants' compliance with the meal plan and HbA1c. A positive correlation was found ($r(21)=0.393$; $p=0.064$), indicating a moderate linear relationship between the two variables. Compliance with meal plans tends to improve HbA1c.
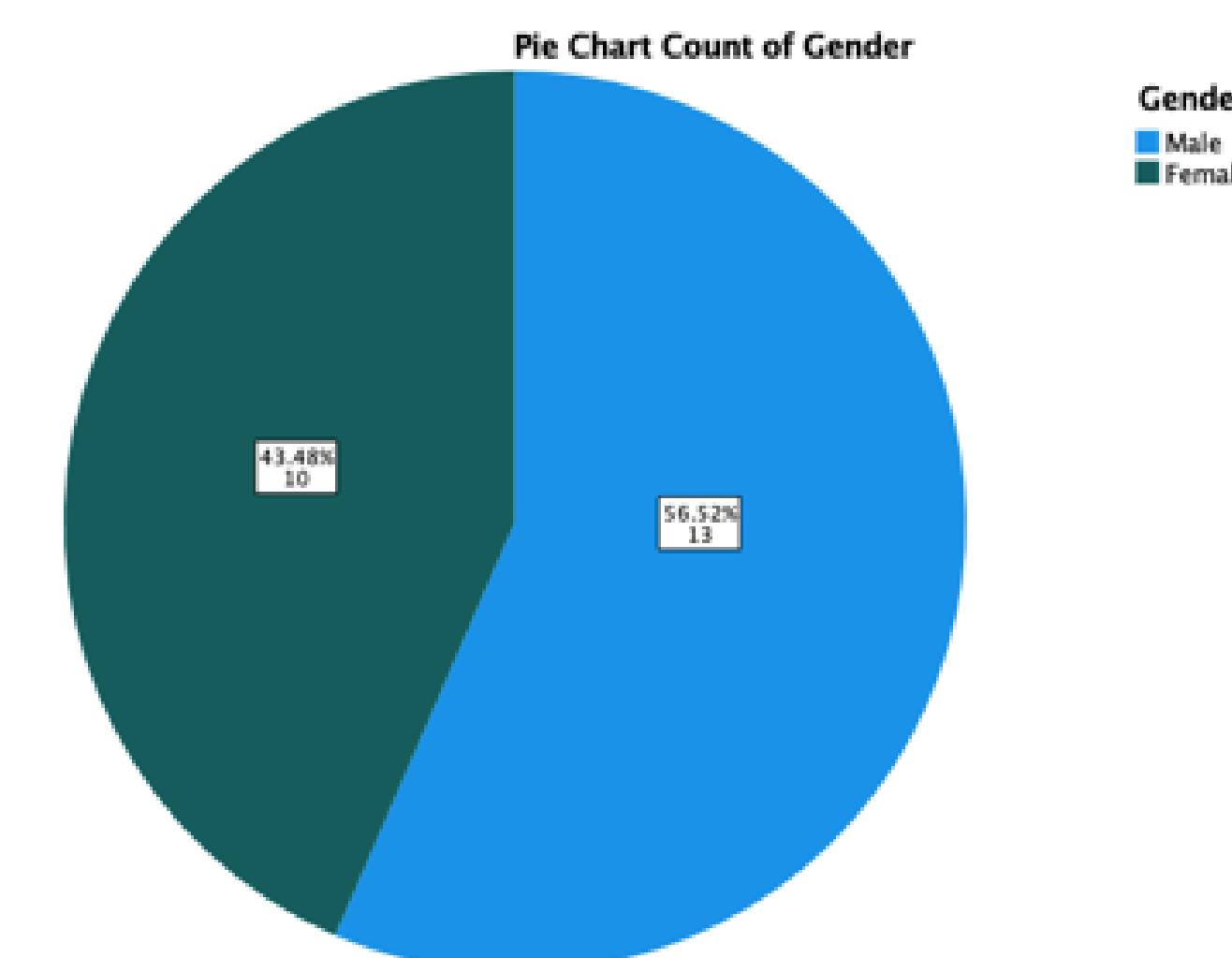
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
HbA1c	23	7	14	10.36	2.390
HbA1c post	23	6	14	8.23	2.221
Valid N (listwise)	23				

- A Pearson correlation coefficient was calculated for the relationship between participants' compliance with medications and HbA1c. A positive correlation was found ($r(21)=0.321$; $p=0.135$), indicating a moderate linear relationship between the two variables. Compliance with medications tends to improve HbA1c.

- A weak correlation coefficient was calculated, examining the relationship between participants' physical activity and HbA1c. A weak correlation was found ($r(21)=-0.079$; $p=0.0719$), indicating a weak linear relationship between the two variables. Physical activity does not correlate with HbA1c.

Discussions

- Participants have shown improvement with HbA1c, although some have not met their optimal goal.

- Physical activity is not significant in improving HbA1c as expected. However, participants were not physically active as recommended, with 150 minutes a week.

Limitations
- It is a small sample study with a timeframe of three months.
- The geographical location is one place at the primary care clinic.

Recommendations
- Larger and longer studies are recommended for future studies with a mix of non-English speaking patients.

Implications for Practice
- By addressing issues, such as diabetic education and lifestyle changes, for patients in order to improve HbA1c, the program can meet its goals of improving patient control of blood sugar and reducing complications related to uncontrolled diabetes.

Conclusion

- Diet and medication compliance have been shown to improve HbA1c. Improvement in cholesterol and blood pressure was also seen.

- Diabetes needs better management at the primary care clinic. It is important for healthcare providers to reinforce patients with T2D with lifestyle changes, including physical activity, nutrition, and medication adherence, to improve HbA1c.

References

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