PLANT YOUR MOVE: THE EFFECT OF VEGETARIANISM ON DIABETES MANAGEMENT

Literature review and case study of a 38 year old male with Type 2 Diabetes affecting change with a largely plant based diet

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PROBLEM

According to the WHO, the number of people with diabetes has quadrupled from 108 to 422 million since 1980 to 2014. Diabetes is a disease that is a major cause of blindness, kidney failure, heart attack, stroke and lower limb amputation. The role of diet, exercise, and education often compromise the myriad of approaches required in diabetes management. Although this review examines the potential importance of a specific diet, focusing on some type of intervention early on appears to be the most important tool to combat a complex disease that affects multiple organ systems.

CASE

Patient X is a 38 year old South Asian male seen at a Family Medicine clinic who was diagnosed with diabetes after presenting with vague symptoms. His HbA1c upon presentation was 12.8% and despite education on the disease state and standard medical therapy, patient opted for intense lifestyle interventions, mainly focusing on diet. He incorporated a largely whole food, plant based diet and over 4 months had reduced his HbA1c to 5.2%. He remained in remission of diabetes for over one year from last clinical visit. Although he incorporated a multifaceted approach, his focus was eliminating processed, fried, and fast foods from his diet with seldom meat intake.

REVIEW

A1C at baseline and at 11 and 22 weeks. Open circles: all veggie group participants (n = 99); closed circle: medication-stable veggie group participants (n = 24); open squares: ADA group participants (n = 50); closed squares: medication-stable ADA group participants (n = 33). Error bars represent SE of the mean. P < 0.001 for between-group comparison from baseline to 22 weeks for full sample, P < 0.01 for medication-stable participants (vegan vs. ADA).

The meta-analysis revealed that a vegetarian dietary pattern significantly reduced HbA1c by 6.4%. Switching to a vegetarian diet also appeared to provide roughly 10% less fat which was expected to reduce intramyocellular lipid accumulation. One case-control study found a 30% reduction in intramyocellular lipid concentrations in the same muscle in a group of 21 vegans compared to 25 controls.

According to Kahleova et al., a calorie restricted vegetarian vs conventional diabetic diet was studied with regard to insulin resistance, visceral fat and oxidative stress markers in Type 2 diabetes over 24 weeks in an open-label design. Researchers pointed that greater loss of visceral fat and improvements in plasma concentrations of adiponectins and oxidative stress markers may have been responsible for reduction in insulin resistance.

According to Bernard et al., diabetes prevalence is lower among individuals following plant-based and vegetarian diets, and clinical trials using such diets have shown improvements in glycemic control and cardiovascular health. This study posits it becomes difficult to isolate dietary interventions in multifaceted approaches with exercise, and without increasing exercise this study demonstrated fasting glucose reduction of 28% compared to 12% in control group with a low fat vegan diet.

CONCLUSIONS

While the role of diet in disease remains a burgeoning field, the role of the primary care physician in diabetic education is vitally important in reversing this disease state. The willingness within patient populations is evidenced in what appears to be more than half of the population, and increased education on the potential benefits of low-fat, vegan diet or calorie-restricted vegetarian diet appears to have benefit on diabetes.

In Patient X, he adopted a largely vegetarian diet and eliminated processed foods that likely contributed to his uncontrolled diabetes, now in remission due to strict diet adherence, which exemplifies a powerful tool in diabetes management and reversal.

REFERENCES

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