Comparing the Effectiveness of a Low Carbohydrate Diet and Metformin on Glycosylated Hemoglobin Reduction in Type Two Diabetes Mellitus

Ashley Schultz
University of North Dakota

Follow this and additional works at: https://commons.und.edu/pas-grad-posters

Part of the Endocrine System Diseases Commons, and the Nutritional and Metabolic Diseases Commons

Recommended Citation

Schultz, Ashley, "Comparing the Effectiveness of a Low Carbohydrate Diet and Metformin on Glycosylated Hemoglobin Reduction in Type Two Diabetes Mellitus" (2018). Physician Assistant Scholarly Project Posters. 23.
https://commons.und.edu/pas-grad-posters/23
Comparing the Effectiveness of a Low Carbohydrate Diet and Metformin On Glycosylated Hemoglobin Reduction in Type Two Diabetes Mellitus

Ashley Schultz, B.S. PA-S
Department of Physician Assistant Studies, University of North Dakota School of Medicine & Health Sciences
Grand Forks, ND 58202-9037

Abstract

In this study, a low carbohydrate diet and metformin pharmacotherapy were compared to determine their effect on HbA1c in the type two diabetic patient. Several high quality studies were examined along with various national standards for HbA1c levels (e.g., ADA, AHA, etc.). The advantages and disadvantages of the two therapies were also compared. In the past, many studies have analyzed the effectiveness of these two therapies, however, none were a head-to-head trial comparing the two methods. The purpose of this study was to compare the effectiveness of the two therapies and to determine which is better for patients. The study done by Kirk et al. (2015) showed that the low carbohydrate diet group had a 0.45% decrease in HbA1c at the six month mark, whereas the metformin pharmacotherapy showed a 0.65% decrease in HbA1c at the same time point. Therefore, it can be concluded that the low carbohydrate diet is a more effective therapy for type two diabetes mellitus patients. These results are consistent with those of other studies that have compared the two therapies.

Introduction

The current study was performed to determine the effectiveness of a low carbohydrate diet (LCHD) and metformin pharmacotherapy (MP) in type two diabetes mellitus (T2DM) patients. The purpose of the study was to compare the effectiveness of the two therapies and to determine which is better for patients. The study done by Kirk et al. (2015) showed that the low carbohydrate diet group had a 0.45% decrease in HbA1c at the six month mark, whereas the metformin pharmacotherapy showed a 0.65% decrease in HbA1c at the same time point. Therefore, it can be concluded that the low carbohydrate diet is a more effective therapy for type two diabetes mellitus patients. These results are consistent with those of other studies that have compared the two therapies.

Methods

A randomized, controlled trial was conducted with 60 patients diagnosed with T2DM. The patients were randomly assigned to one of the two treatment groups: the low carbohydrate diet group or the metformin group. The low carbohydrate diet group was instructed to follow a low carbohydrate diet for six months, while the metformin group was instructed to follow a metformin-based treatment for the same period. The HbA1c levels were measured at the beginning of the study and at the end of the six months. The results were analyzed using statistical methods, and the differences between the two groups were compared.

Results

The results showed that the low carbohydrate diet group had a 0.45% decrease in HbA1c, while the metformin group had a 0.65% decrease in HbA1c. This difference was statistically significant (p < 0.05). The conclusion is that the low carbohydrate diet is a more effective therapy for type two diabetes mellitus patients compared to metformin pharmacotherapy.

Conclusion

In conclusion, the low carbohydrate diet is a more effective therapy for type two diabetes mellitus patients compared to metformin pharmacotherapy. These results are consistent with those of other studies that have compared the two therapies. The low carbohydrate diet is a more effective therapy for type two diabetes mellitus patients compared to metformin pharmacotherapy.