The Association Between Depression and Metabolic Control Among African Americans and Latino Men with Type 2 Diabetes

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The African American and Latino communities are suffering from the nationwide epidemic of type 2 diabetes. Most individuals with diabetes are also suffering from depression. For many African American and Latino individuals diagnosed with type 2 diabetes, cultural influences on their diets may be partly to blame. Poor glycemic and metabolic control have been linked to patients with diabetes. Chronic hyperglycemia is a well-established predictor of the onset of diabetes complications in both type 1 and type 2 diabetes.

This study is a continuation of last year's study in which there was a significant statistical relationship between high density lipoprotein (HDL) and depression in women with type 2 diabetes. Most of the women who were depressed had a severely reduced HDL (<40). This study aimed to find out if there was a difference in metabolic control, diabetes, and depression based on sex. The study focused on the following variables associated with diabetes; hemoglobin, creatinine, hematocrit, HDL, low density lipoprotein (LDL), triglycerides, blood urea nitrogen, and total cholesterol and how they contribute to the overwhelming outbreak of diabetes. Men who had already been diagnosed with diabetes were randomly selected to participate in the study.

This study determined the association of metabolic control among Hispanic and African American men with diabetes and the association between the parameters of diabetes related to the status of glycemic and lipid control among Latino and African Americans with diabetes.

Followup Prevention Plan. In order to decrease the complications associated with diabetes and the number of individuals diagnosed with type 2 diabetes, we developed a brochure to educate the general public with general information about type 2 diabetes, metabolic control, and depression. It also included results of this study. The brochure now serves as an educational tool for at-risk individuals lacking information on diabetes.

INTRODUCTION

Diabetes is a metabolism disorder that results from insufficient insulin activity in the pancreas. Diabetes occurs when: the pancreas does not produce any insulin; the pancreas produces very little insulin; or the body does not respond appropriately to insulin. Insulin is produced by the pancreas and is needed to break down food to help convert it to energy. The African American and Latino diets consist of foods that are high in fat. Both diets contain foods high in cholesterol such as fried chicken in the African American diet and chorizo in the Latino diet. These high fat/cholesterol foods contribute to obesity and hence increase the number of individuals diagnosed with type 2 diabetes.

Depression is an illness that involves the body, mood, and thoughts. It affects eating, sleeping, self-image, self esteem and perception of the world.

Hemoglobin is the oxygen-carrying pigment that gives blood its red color and it is also the predominant protein in red blood cells. Hemoglobin A1c is a minor component of hemoglobin to which glucose is attached. The complications of diabetes can be delayed or prevented if the HbA1c level can be kept close to 7%.

The variables associated with type 2 diabetes are: hematocrit, hemoglobin, total cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL), triglycerides, creatinine, and blood urea nitrogen.

Tools

Abstraction Form-Sample characteristics of the individuals that participated in the study. Affinity Software (lab charts)-The software that contained the Hb1Ac, lipid panels, chemistry and hematology lab results. Beck's Depression Inventory-A validated 21 question survey that assesses depression.

METHODS

Once approval from the institutional review board (IRB) at Charles R. Drew University was received, patients were recruited from a randomized list in King/ Drew Medical Center's 5B Diabetes and Fingerstick Clinics. Patients were then approached by research assistants and given a flyer. Those who accepted set up an appointment in the Clinical Research Center. They were paid $20 for participating in the study. Their HbA1c, lipid panel, chemistry, and hematology lab results were extracted and recorded. The patients were given a face-to-face Beck's Depression Inventory (BDI) to assess their depression. Once the patients completed the survey, the data was input into an Excel document, coded, and then we used the Statistical Analysis System to find any associations between the variables associated with type 2 diabetes.

RESULTS

In our sample population of 40 men there was a direct relationship between depression and hemoglobin, there was also a significant statistical relationship between HbA1c and cholesterol. Although we did not find an association

between depression, metabolic control, and men with type 2 diabetes, we did see an association between hemoglobin and the BDI results. As their hemoglobin decreased the number of severely depressed patients increased. No other relationships between depression and the variables were found. Future studies should address how patient medication could be a confounder. Future plans include distributing the developed brochures at King/Drew Medical Center once it is approved by the IRB.

RESOURCES

1. www.diabetes.org
2. www.blackhealthcare.com/BHC/Diabetes/Description.asp
3. www.psychologyinfo.com/depression/description.html
4. www.faqs.org/nutrition/Pre-Sma/Regional-Diet-American.html
5. www.medicinenet.com/hemoglobina1c/aticle.atm
6. www.diabetes.org/type-2-diabetes/blood-glucose-checks.jsp
7. www.americanheart.org/presenter.jhtml?identifier=4488
8. www.loweringcholesterol.net/show/cholesterol-levels
9. www.nih.gov/news/WordonHealth/oct2000/story04.htm
10. www.dtu.ox.ac.uk/lds/protocol.html
11. www.answers.com/topic/hematocrit
12. www.nlm.nih.gov/medlineplus/ency/article/003474.htm
13. www.webmd.com/hw/kidney_failure/aa36271.asp
14. www.abtestonline.org/understanding/analytes/bun/test.html
15. www.med.umich.edu/1libr/aha_bunitest_crs.htm
16. www.americanheart.org/presenter.jhtml?identifier=183
17. www.nlm.nih.gov/medlineplus/enyc/article/003645.htm
18. www.nlm.nih.gov/medlineplus/enyc/article/003646.htm
19. www.medicinenet.com/creatinine_blood_test/article.htm
20. www.webmd.com/hw/health_guide_atoz/st158077.asp?navbar=hw207814
21. heartdisease.about.com/cs/cholesterol/a/choltri.htm
22. www.americanheart.org/presenter.jhtml?identifier=180
23. www.metrika.com/3medical/hemoglobin-m.html