

Journal of Psychiatry and Behavioral Health Forecast

Type II Diabetes Patient Health Care (Triple Treatment Recommendation)

Yousef F*, Mansour O and Herballi J

Damascus University, Syria

Abstract

Diabetes Mellitus is one of the chronic diseases that are popular among patients older than 45 years old. It causes hyperglycemia (high levels of glucose in the blood than the normal levels). The cure of such disease is not a full recovery of diabetes as much as it is a way that helps patients to live a better life. The triple treatment we recommend in this paper does help in decreasing the severity of the symptoms the one experiences due to such disease and/or lowering the possibility of acute contradictions to occur.

Keywords: Type II Diabetes; Triple treatment; Oral anti-hyperglycemic agents; Diabetes Health care; Metformin; Sulfonylurea

Introduction

What is Type II of Diabetes Mellitus?

Diabetes Mellitus is one of the most popular chronic disease among people older than 45 years old. It usually occurs because of a decrease in insulin secretion from pancreatic B- cells and/or a decrease in insulin sensitivity by its receptors, which we call insulin receptor resistance. In both ways, this leads to a high level of glucose in the blood; Hyperglycemia. Therefore, Type II Diabetes Mellitus is also called non-dependant insulin diabetes [1].

What is Insulin?

Insulin is the main hormone responsible for glucose usage as a source of energy by skeletal muscles and hepatic cells. Insulin secretion increases after eating a meal especially if it is high with its carbohydrate content. The temporary increase of glucose level in the blood is necessary for insulin to be released from beta-cells. After that, Insulin binds to its receptors in the liver and skeletal muscles to stimulate glucose uptake by these cells to be used as a source of energy.

What does happen in the body of diabetic patients?

In diabetes patients, what really happens is that due to the decrease in insulin activity (either low secreted amount and/or low sensitivity to it by its receptors), the cells do not uptake glucose the way it does in normal cases. This leads to high levels of glucose in the blood which might cause in advanced not controlled cases to form what is known as glycosylated hemoglobin. This leads to sever symptoms and contradictions.

How is Type II Diabetes Mellitus diagnosed?

This disease is usually hidden disease. The one does not find out about it unless sever symptoms or/and acute contraindication happens. A few are educated about the fact the Type II diabetes Mellitus is hereditary disease, so they take precautionary procedures to control glucose levels in their blood and avoid such tragedian experiences [1,2].

Clinically, diabetes mellitus causes certain symptoms that are very common. They include night urinating, headaches, feeling thirsty, feeling tired or weak most of the time, blurred vision, weight gaining and feeling hungry, and low sexual act.

The clinical examination can be supported with laboratorial tests for glucose blood levels. The normal range for glucose in blood is [70-110]mg/dl. In diabetes patients, the levels are higher than 126mg/dl.

Other important tests are

Fasting plasma glucose test (FPG): This test is usually done in the morning after 8 hours of fasting. It is measured in mg/dl. The person is normal when his result is 99mg/dl or below, while

OPEN ACCESS

*Correspondence:

Farah Yousef, Damascus University, Syria.

E-mail: farahyousef90@yahoo.com

Received Date: 15 Mar 2018

Accepted Date: 11 Apr 2018

Published Date: 18 Apr 2018

Citation: Yousef F, Mansour O, Herballi J. Type II Diabetes Patient Health Care (Triple Treatment Recommendation). *J Psychiatry Behav Health Forecast.* 2018; 1(1): 1005.

ISSN 2643-802X

Copyright © 2018 Yousef F. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

over 126 mg/dl s\he is diabetic. Between these values the one is considered pre-diabetic.

Glycosylated hemoglobin: This gives an idea of glucose level in the blood for the past 3 months from the day of the test. The one can eat and drink before this test. It is measured in percentages. Therefore, the one is normal when its result below 5.7%, while it is diabetic when s\he has 6.5% or above. Between these percentages the one is considered pre-diabetes.

Random plasma glucose: This test is done when the symptoms are very clear for the professionals. In other words, no need to fast all night to undergo the test. This means the test can be done at any time. It uses the same units as FPG. However when it results with 200 mg\dl or above the one is diagnosed with diabetes.

(Americian Diabetes Association. Classification and diagnosis of diabetes. Diabetes Care. 2016; 39(1): S14-S20.

Glucose tolerance test (GTT): This test gives an idea of glucose processing in the body to detect if there is a problem in this process or not. The one must fast at night to have the test in the morning. Glucose levels in the blood will be measured before and after two hours from taking a sweeten drink. If you have diabetes, the amount of glucose in your blood will be:

- more than 7 mmol/l before the test.
- more than 11 mmol/l two hours after the test.

Another measurement for glucose can be done in urine. In other words, detecting weather glucose is found in urine or not. In normal cases, glucose is not excreted in urine, while in diabetes cases it is.

What is the triple treatment that we recommend for type II diabetes patients?

We can say “diabetes patient is a normal human but with special life system”. The triple treatment includes working on 3 levels. It causes balance between the patient nutrition, life style and medication.

Nutrition: Diabetes patient must have his needs of main nutrition such as minerals, vitamins, protein and fat. However his diet must be low calorie diet (around 1500 kcal\ a day) free of sugar and salt [1-4].

The global community of Diabetes in U.K recommends avoiding eating simple sugars (white sugar which is fast absorbable), salt and saturated fat (such as margarine and butter). Instead, it encourages eating vegetables, fruits which have complex carbohydrates (basmati rice, bread) which is slowly absorbed that it does not cause sudden increase in glucose levels when it is taken in low amounts.

However, NHS recommends this diet to be followed by Type II diabetes patients:

- 1- Eating breakfast (very important).
- 2- Drinking a plenty of water (around 2 liters a day).
- 3- Eating complex carbohydrates.
- 4- Eating fibers.
- 5- Eating around 5 portions of vegetables and fruits (non-starchy vegetables such as carrots and tomatoes, starchy ones: potatoes and corn, fruits: orange, apples, bananas, and grapes).
- 6- Substitute saturated fats with non-saturated ones (vegetable oils: olive oil, soya oil, corn oil).

- 7- Eating dietary with low fat content.
- 8- Eating meat that is free of skin and bones.
- 9- Avoid treated meat.
- 10- Eating fish twice a week and be sure of having fish oil at least once a week.
- 11- Eggs and grains can be a second source for protein in a adequate amounts.
- 12- Avoid frying or toasting when preparing meals. Grilling, baking and steaming are highly recommended.
- 13- Avoid snacks such as chips and cakes.
- 14- Eating nuts without salt.
- 15- Avoid eating salt more than 6g a day.
- 16- A void alcohol.

This regime helps in controlling glucose levels in the blood and in weight loss.

However, each patient can determine which nutrition suits him best. This can be by testing each kind of food to know which one causes a change in glucose blood levels

National institute of diabetes and digestive and kidney diseases (NIDDK) recommends the changes in the nutrition to be done slowly as these changes seem to be challenging at the beginning.

NIDDK agrees with NHS diet. It also recommends eating whole grains like wheat, rice, oats. The one can use oils for cooking food instead of butter or margarine. There are also several foods the patient must avoid as much as he can such as fried foods, beverages with added sugars.

Not only the quality but also the quantities of food can be controlled. The patient can use the plate method to control his food portion sizes. This include using a 9-inch plate. Half of this plate for non-starchy vegetables, one-fourth of it for meats, the last fourth for grains or starchy vegetables.

For Carbohydrate intake, the one can use the carbohydrate counting to know how many grams of carbohydrate there is in each portion of food. This helps in managing how many calories of 1500 calories a day the patient would like to take as carbohydrate as we all know that 1 gram of carbohydrate gives 4 calories. The patient can also check the food label to know its content of carbohydrates for that.

Daily life style: The previous diet is not enough alone in controlling the patient case especially in advanced cases or which the patient does not take his medication course regularly. Therefore, changes must be done in his daily life styles.

Physical activity and weight loss: Wight loss is one of the main goals to be achieved by Type II diabetes patient. To do so, aerobic sports are very useful for diabetes patients. It increases the heart beats and makes the breath harder. Therefore, sports like walking is very useful. Walking for at least 30 minutes a day makes the glucose levels in the blood more stable. The one can also climb the stairs, dance, ride a bike, or play basketball instead of walking. Weight loss can also be managed in diabetic patients by surgery [1,2].

Strength training is also good for diabetic people in both men and women. Doing these exercise in moderate level helps building

muscles and decrease the body fat. This leads to burn more calories. As a result, the one loses weight.

Fresh air and avoiding stress: The patient must have a fresh air from time to time. This by stop smoking and visiting country sides and mountains.

Avoiding life stress in work or community is also highly recommended as diabetic person usually feel depressed and fatigue.

Controlling tests: This part includes controlling glucose and cholesterol levels in the blood in addition to blood pressure. This also includes abstaining from smoking. These can be called ABCS:

(A: A1C Test glycosylated hemoglobin to be below 6.5%, B: blood pressure below than 140\90, C: for Cholestrol management. S: stop smoking).

The one can also check his blood glucose level at home with blood glucose meter. The patient can write down the value he gets by this meter on glucose self-check chart.

Continuous glucose monitoring is another way to measure glucose level in the fluids between body cells every few minutes. If the sensor give too high or too low values the one must check his glucose blood level using blood glucose meter.

(National institute of diabetes and digestive and kidney diseases NIDDK).

Taking care of diabetic patient feet is highly recommended to avoid diabetic foot incidence. This include wearing comfortable and supportive shoes. Sandals are highly recommended for summer seasons.

Medication

Type II diabetes medication does not work in case B-cells are FULLY DAMAGED. In other words, these medication needs insulin to be secreted even in low amounts so the drug can be effective [1-7].

We can shortly mention here the most popular medications used for Type II diabetes Mellitus as oral drugs:

- 1- Hypoglycemic agents.
- 2- Regulatory agents.

Hypoglycemic agents

They include sulfonylureas, meglitinide and d-phenylalanine derivatives, dpp-4 inhibitors.

Sulfonylurea: Most common agents are glimipiride, glyburide, glipizide. They increase insulin secretion from pancreas after having a meal and for many hours. Their common side effects are suffering from sudden hypoglycemia and or weight gain.

Meglitinide, Rapaglinide, and nateglinide: They stimulate insulin secretion from pancreas after a meal. It might cause low blood glucose like sulfonylureas.

DPP-4 inhibitors: This group includes sitagliptin, sexaglipitin, and linagliptin. They increase insulin secretion and lower the amount of glucose made by the body. They prevent the damage of GLP-1 hormone. These drugs can be taken once a day. They have many side effects such as stomach ache, stuffy nose but they do not cause low blood glucose.

Regulatory agents

They include Biguanides, thiazolidinedions (TZDs), alpha-glucosidase inhibitors.

Biguanides: They are represented with metformin. It enhances insulin sensitivity by its receptors in the liver and skeletal muscles. It is usually taken twice a day after meals. Its common side effects are loss of appetite, and abdominal upset. However, it does not cause low blood glucose. Lactic acidosis is also rare to happen.

Thiazolidines (TZDs): Thiazolidines represented with pioglitazone also enhances the body sensitivity to insulin effects. It is usually taken once aday. It does not cause hypoglycemic incidences but it might increase the congestive heart failure and cause weight gain.

Alpha glycosidase inhibitors: They include acarbose and miglitol. They slow the absorption of glucose after eating. Therefore, they must be taken within ameal. Their common side effects are gas, diarrhea, and stomach ache.

We sophisticate on the fact that the patient must do the glucose blood test every morning in his house to assure how much this program is effective for him.

Conclusion

Type II diabetes patient can be like any other healthy person as long as he is patient in applying the triple treatment. We presented in this paper. As this treatment works on his three main levels of life, the one can find good results stabilizing glucose blood concentration and achieving weight loss. This all so the Type II diabetes patient has a better life.

References

1. Bastaki S. Review Diabetes mellitus and its treatment. Int J Diabetes & Metabolism. 2005; 13: 111-134.
2. Type 2 diabetes. Symptoms. 2018.
3. Type 2 diabetes. Diagnosis. 2018.
4. American diabetes association (ADA).
5. U.S. department of agriculture nutrient data lab.
6. NHS Diet Advice for Diabetes. 2018.
7. Living with diabetes. 2018.
8. Cordera R, adami GF. From bariatric to metabolic surgery: looking for a "disease modifier" surgery for type 2 diabetes. Worl Journal of diabetes. 2016; 7: 27-33.
9. U.S. department of health and human services, office of disease prevention and health promotion 2008, physical activity guidelines for Americans summary.
10. Type 2 diabetes. Medications. 2018.
11. Uzor ph, Patience o. oral anti-diabetic agents-review and updates. british journal of medicine and medical research. 2015; 5: 134-159.
12. White J. A brief history of the development of diabetes medications. Diabetes spectrum. 2014; 27: 82-86.
13. Seltzer H. Efficacy and safety of oral hypoglycemic agents. Annual Review of Medicine. 1980; 31: 26172.
14. Deruiter J. Overview of the antidiabetic agents. Endocrine Pharmacotherapy Module. Spring. 2003: 1-33.

15. Natrass M, Alberti KG. Biguanides. *Diabetologia*. 1978; 14: 71–74.

16. American Diabetes Association. Implication of the united kingdome prospective diabetes study. *Diabetes Care*. 2002; 25: 528-532.