

IMPACT OF DIET AND EXERCISE PREVENTS COMPILATION OF DIABETES

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ABSTRACT

Diet and exercise help to maintain optimum blood sugar level in diabetic patient by balancing insulin in the blood. The objective of the study was to measure percentage of diabetic patients doing diet, exercise and percentage of impact of diet and exercise. the results support that diet and exercise have great impact on diabetic patient to control the disease with healthy lifestyle. This also shows that healthy lifestyle can enhance life and maintain insulin level in body. It means that precautions and healthy life is better than the use of insulin and drugs to control on diabetes.

Keywords: Diet, Diabetes Mellitus; Exercise.

I. INTRODUCTION

Diabetes Mellitus is a chronic disease where the blood in the body contains a high sugar level. This disease is caused by the body's inability to use insulin properly, or the inability to manufacture insulin altogether. There are times when it can be caused by both factors. "Diabetes is the leading cause of blindness, kidney failure, and leg amputations. In fact, it is the third leading cause of death in the United States." (Magee, 1999 p. 2)

When you eat a meal, your body begins the digestion process. The food breaks down and enters the bloodstream in the form of sugars. Once the sugars are circulating in your blood, the cells need to be able to admit the sugar. A hormone called insulin is the factor that makes this possible. Once the insulin lets the sugar into the cells, it is used to produce energy.

Diabetes, the sixth leading cause of death in the world, is a chronic disease characterized by persistent hyperglycemia (high blood glucose levels). If Left untreated, diabetes can cause serious complications affecting the circulatory and nervous systems, kidneys, eyes, and feet.

Diabetes Mellitus

- The name "diabetes mellitus means sweet urine.
- It stems from ancient times when physicians would taste a patient's urine as a part of a diagnosis.



What is Diabetes?

It is a metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both; leading to changes in both small blood vessels (Microangiopathy) and large blood vessels (Macroangiopathy) **ADA, 2010**. In diabetic patient, glucose cannot be digested or broken down and hence cannot be absorbed by

the cells of the body. It remains in the blood thus raising the blood sugar level. The effects of diabetes mellitus include long-term damage, dysfunction and failure of various organs like heart attack, stroke, amputations, nerve damage, blindness and kidney disease.

When to Suspect for Diabetes?

There are certain symptoms which can be a signal for onset of diabetes which includes Polydipsia (Excessive hunger), Polyuria (frequent urination), nocturia, Delayed healing of wound, Infections (e.g. urogenital, skin), itching in genital areas, Weakness & tiredness, Unexplained weight loss, Decreased vision, Dehydration, altered sensorium, Breathlessness and many times > 60% of patients do not have symptoms. Observing such changes in body are the signs of onset of disorder.

Prevalence

India is home to 62 million diabetics, second only to China which has 92.3 million diabetics. By 2030, India's diabetes numbers are expected to cross the 100 million mark according to a 2012 report by International Diabetes Federation. More worryingly, WHO projects that in the next 10 years, deaths by diabetes will increase by 35%. The economic burden due to diabetes in India is among the highest in the world. As per WHO estimates, mortality from diabetes, heart disease and stroke cost about \$210 billion in India in 2005. Much of the heart disease and stroke in these estimates were linked to diabetes. Diabetes, heart disease and stroke together will cost about \$333.6 billion over the next 10 years in India alone, estimates WHO.

Diagnostic Criteria for DM

•**ADA:** At least one of the 4 criterions must apply:-

1. Symptoms of Diabetes + casual plasma glucose concentration ≥ 200 mg/dl
2. Fasting plasma glucose ≥ 126 mg/dl, with no caloric intake for at least 8 hour
3. 2 hour plasma glucose ≥ 200 mg/dl during an OGTT, with 75 gm glucose in water
4. HbA1c

SYMPTOMS

- Blurred vision
- Feeling more thirsty than usual
- Dry mouth
- Fatigue
- Hunger
- Fruity breath
- Urinating often
- Unexplained Weight loss
- Frequent infections and delayed wound healing

WARNING SIGNS

As blood sugar levels remain high, Type 1 Diabetes often leads to:

- Unintentional weight loss
- Increase in appetite
- Lack of energy, drowsiness
- Skin Problems

Many people with type 1 diabetes experience uncomfortable skin conditions, including:

- Bacterial infections
- Fungal infections
- Itching, dry skin, poor circulation

II. CONCLUSION

It was concluded statistically for all diabetes patient that management of diet and exercise on treatment plan are the significant factors that strongly impacted the diabetes related consequences among all (Type I, Type II, IGT and GDM) diabetic groups and the related consequences can be prevented by manipulation in diet and exercise on treatment plan.

Lastly, all the above inferences indicated rejection of all four null hypotheses and acceptance of all four alternative hypotheses i. e. (1)- There shall be significant difference in nutritional status of diabetes patient, (2)-There shall be significant difference of diet and exercise management on the average blood glucose level (HbA1c), lipid profile, fasting and post meal sugar of diabetes patient, (3)-There shall be significant difference of modified lifestyle on diabetes related consequences and (4)-There shall be significant difference of diet and exercise on treatment plan of diabetes patient impacted the achievement of the entire selected objectives followed with fulfillment of the aim and the objectives of the proposed research titled "Impact of diet and exercise in Preventing complications of diabetes".

III. SUGGESTIONS

In total, this research presents a series of specific recommendations, many of which can be implemented right away. Summarizing them broadly, they include:

- Glucose is necessary for body. Insulin is the key factor in regulation of blood glucose and is produced by pancreas.
- It's not diabetes but uncontrolled diabetes which is harmful. Hence if from the very beginning if blood sugar is kept under good control then affect of diabetes on various organs can be prevented or at least delayed.
- There is no specific diet called diabetes diet. Diet in Diabetes a healthy diet. There is no restriction of any food item but what matters is the amount of calorie intake, amount of food, frequency and composition of meals.
- Exercise and Yoga with proper care must be the integral part of routine life but medicines have its own work and importance.
- It is uncontrolled sugar which causes complication
- Regular check up is a key to detect complications early so that timely control measures can be taken.
- Raised sugar may not have any symptoms but have serious damaging effects on body. So proper treatment and regular checkups is necessary.

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