

Diabetes type ii

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Diabetes is a condition characterized by individuals having elevated levels of blood sugar resulting from the body not producing sufficient insulin or the body cells not effectively responding to the insulin already present in the body (Kilvert & Fox, 2007). Insulin, a hormone produced in the pancreas, enables the body cells to take up glucose and oxidizes it into energy (Zieve & Wexler, 2009). Lack of this glucose uptake by the body cells will result to the accumulation of glucose in the blood, a condition known as hyperglycemia (Kilvert & Fox, 2007).

Hyperglycemia leads to a number of other serious complications. In type II diabetes also known as non-insulin-dependent diabetes mellitus (NIDDM) results from the body cells becoming resistant to insulin or the insulin that is produced in the body is insufficient (Kilvert & Fox, 2007). The onset of diabetes type II can be characterized by individuals having general weakness, chronic fatigue, malaise and lethargy. Frequent urination is not unusual and individuals often complain of excessive thirst.

Excessive movements in the bowel and unexplained weight loss have been observed among individuals afflicted by the condition (Mayo Clinic, 2009). The individuals suffering from diabetes type II start having blurred vision caused by the alteration in the shape of the lens due to osmotic factors chiefly the elevated levels of blood glucose. Frequent thirst leads to the affected individual taking a lot of fluids. Diabetes type II is known to be a genetic disease although medical causes have been explained (Kilvert & Fox, 2007).

There is an observation of an increased risk of developing diabetes type II in families where the parents have the disorder. A mutation in the gene known
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as the Amyloid Polypeptide gene lead to the early signs of the condition and makes the progress to a more severe diabetes type II condition possible (Kilvert & Fox, 2007). Apart from genetics, the condition can be caused by an alteration in the metabolism and deranged cell processes. Environmental factors have also been blamed to cause diabetes type II particularly some diets and weight (Zieve & Wexler, 2009).

Some drugs have been identified to increase the risk of diabetes type II such as the thiazide diuretics, which inhibit the secretion of insulin because of the hypokalemic condition they cause. Thiazides also increase the insulin resistance due to elevated levels of mobilization of free fatty acids (Mayo Clinic, 2009). Other drug agents that can be blamed for drug induced hyperglycemia include beta blockers, somatropin, protease inhibitors, phenothiazines, flouroquinolones, corticosteroids, antipsychotics and calcium channel blockers.

Treatment of Diabetes Type II

The immediate objective of treating diabetes type II is to reduce the elevated levels of blood glucose while the long-term goal of diabetes treatment is the prevention of diabetes-related conditions, which arise after individuals have developed the complication. Diet and exercise remain the primary ways of managing diabetes (Ligaray & Isley, 2010). The afflicted individuals should be able to accurately test and record their levels of blood glucose. The knowledge on what to eat and what medications to use should be well known by people suffering from the disease. The patients should get important information from their doctors.

Individuals with diabetes type II are recommended to eat at the same times every day and their meals should be consistent in terms of the type of foods

they choose to eat (Ligaray & Isley, 2010). The adherence of the meal intervals and the type of foods eaten help prevent the increase or decrease in the levels of blood sugars. Individuals can plan their meals by eating the right quantity of foods, choosing healthy foods and eating the meals at the required time. Another aspect is the weight management. It has been observed that some people after cutting weight can stop taking medications even when they still have diabetes.

In extreme overweight individuals, bariatric surgery may be recommended. Gastric bypass surgery and laparoscopic gastric banding are some of the weight reduction procedures that can be recommended in the management of diabetes (Ligaray & Isley, 2010). For diabetics, regular physical exercise is imperative (Mayo Clinic, 2009). It has been observed that aerobic exercise carried out regularly can help reduce the levels of blood sugars without the need of any medication. Exercise help to burn any excess fats and calories and therefore individuals with diabetes can easily manage their weight through exercises.

Blood pressure and blood flow, which may be seen as a problem in diabetes type II can be improved (Mayo Clinic, 2009). Exercise decreases the insulin resistance in body cells without necessarily having any body loss. The body's energy level is also said to improve with exercise and the ability to handle stress as well as lowering of tension are some of the benefits of exercise. When all the options of exercise and diet have failed, individuals may opt for medications that are prescribed by physicians. The drugs acting against diabetes function to lower the blood sugar levels in a number of ways (Ligaray & Isley, 2010).

Physicians may prescribe for patients more than one type of medication because of the different modes of action of the different agents used in diabetes management. The drugs are also prescribed along with insulin when it is required. The drugs used in diabetes treatment are either given intravenously or orally. For instance, biguanides sold as metformin is used to decrease the hepatic production of glucose (Mayo Clinic, 2009). The rationale of biguanides is to make the fat cells, hepatic cells and the muscle cells to absorb more glucose from the bloodstream hence lowering the total blood sugar levels.

Alpha-glucosidase inhibitors are also important agents that lower the carbohydrate absorption from the digestive tract. This lowers the glucose levels especially after the meals. Sulfonylureas help in triggering the pancreases to produce more insulin and they are administered by oral route (Ligaray & Isley, 2010). Other agents used in diabetes management include the thiazolidinediones, pramlintide and exenatide and meglitinides. Insulin is only prescribes to patients who fail to respond to other methods of disease management such as diet monitoring, exercise and other medications (Mayo Clinic, 2009).

In addition, insulin may be recommended for individuals who have poor reactions towards other medications used. Usually, insulin is injected under the skin by the use of an insulin pen device or a syringe. Insulin is never administered orally as proteolytic enzymes in the stomach may act on the hormone hence affecting the efficacy. In diabetes type II, the body cells fail to respond effectively to insulin even when it is present (Ligaray & Isley,

2010). This is typically seen in type II diabetes mellitus where the resistance is caused by post-receptor derangements.

Post-receptor effect implies that the insulin is sufficiently produced but the cells which should physiologically respond to the molecule have a problem recognizing the insulin (Ligaray & Isley, 2010). There is a general observation that the increased glucose production in the liver particularly in inappropriate times contributes to the inability of the body cells to respond to the ligand, insulin (Ligaray & Isley, 2010). This process, the conversion of glycogen to glucose affects the insulin level, which is important in hepatic function.

The reduced insulin-dependent glucose transport especially in muscles and adipose tissues also contributes to the problem of diabetes type II. Similarly, there is an impaired function of beta-cells in the early phase of insulin release following the hyperglycemic stimuli. Diabetes type II is a condition which not only affects the regulation of glucose levels but also other important body systems such as the immune system, renal function, reproductive system and cardiovascular system are largely affected (Kilvert & Fox, 2007). The immune system is hampered among the individuals suffering from diabetes type II.

This can be seen in situations where diabetic individuals take a longer time to heal from the wounds and minor surgical incisions. The incidences of coronary artery complications as well as the arterial diseases are common among the individuals suffering from diabetes type II (Zieve & Wexler, 2009). Renal failure can be the most disturbing complication of diabetes type II where individuals may require dialysis for blood purification (Mayo Clinic, <https://assignbuster.com/diabetes-type-ii/>

2009). Diabetes type II has also been identified to be causing erectile dysfunction which can be a major problem in marriages.

In general, diabetes type II is a problem which affects a number of body systems and leaves the affected individual and the family members and friends with a great burden. It is a condition of economic importance and effective approach should be directed to its prevention and treatment. The social aspect of the patients and those close to them is affected. Although medications have been developed to manage the condition, effective treatments have not been developed, which can completely treat the problem. This calls for extensive research to come up with ways to manage diabetes type II.