Type 2 Diabetes Quantitative Research Article Critique

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Doctors use innumerable medicines and drugs with the aim to improve the glycemic level of patients who have Type 2 diabetes. As mentioned by Clemens et al. (2016), diabetes can cause chronic and end-stage renal disease. The International Diabetes Federation or IDF has claimed that Type 2 diabetes mellitus or T2DM is an international pandemic. The impaired secretion of insulin and the resistance of the tissues secreting insulin contribute to the medicine intake of T2DM. In today's medical world, T2DM is quite a prevalent disease and a major health concern worldwide. Garber et al. (2016) stated that IDF had estimated that nearly 387 million people are diagnosed with diabetes, and 60-70% of them have developed T2DM. It increases the risks of several health complications such as kidney failure, vision loss, stroke, and premature death. This assignment will discuss the evidence-based article on T2DM, case study, study approach, sample, and population. Along with this, the outcomes and identification of reliability, validity and biases of the study will also be discussed.

Evidence-based Quantitative Article

T2DM is caused by dysfunction of the endocrine system and is chronic in nature. In this section, a quantitative article based on T2DM will be discussed. Mr X from the USA has been admitted to the hospital with Microalbuminuria and Type 2 Diabetes. Mr. X was a local English teacher at a high school near Manhattan (Green et al. 2015). At the age of 52, he was diagnosed with T2DM. He was a regular smoker and occasional drinker, and he quit both practices at the age of 45 years. Due to smoking and consuming alcohol, his weight increased immensely; his weight was nearly 230 pounds and his height was 5'9 inches. After leaving smoking and drinking, he continued to remain obese. But, after he was admitted to the hospital due to T2DM, the doctors advised him to take medications rather than using insulin. It, therefore, made Mr X follow a strict diet and exercise regime (Inzucchi et al. 2015).

Within 4 months of this strict regime, Mr. X lost nearly 30 pounds. Moreover, the doctors prescribed him medicines to control the insulin secretion within his body, instead of providing external insulin for it. Within 6 months, it was seen that he lost 50 pounds; his blood pressure was 160/100 mm Hg, and his heartbeat had a pulse rate of nearly 84 beats/ min (Jafari & Britton, 2016). The doctors checked him thoroughly, and there was no evidence of peripheral vascular blockage or congestive heart failure. The hospital laboratory also tested the protein traces in Mr. X's urine through urinalysis. It was seen that the blood urea nitrogen contained nearly 14mg/dl, random serum glucose was 169 mg/dl, and the serum creatinine contained was 1,2mg/dl. Moreover, the urine collection of 24 hours revealed

that the excretion rate of urinary albumin was nearly 250mg/day (Kahn, Cooper & Del Prato, 2014).

Summarizing the Case-Study

The case study shows that early detection, as well as treatment of albuminuria, is quite important and essential in cases of diabetes. As stated by Kohan et al. (2014), in the case of T2DM, elevated blood sugar levels due to the insufficiencies of the pancreas help regulate the body's metabolism. Insulin is a key regulator that plays an active role in the entire body's metabolism. As seen in the case discussed above, in T2DM, the human body is not responding properly to insulin secretion, creating a condition of insulin resistance. The pancreas also becomes unable to produce insulin to overcome resistance. According to Li et al. (2014), there are several causes of the occurrence of T2DM such as obesity, inactivity, age, family history, smoking, drinking, etc. As seen in the case of Mr X, the doctor has prescribed oral medications, a healthy diet, and regular exercise to meet the target glucose levels in the blood.

Model (2015) stated that the treatment of T2DM is becoming increasingly complex with the introduction of new and innovative oral therapies in the global market. The continuation of oral medications helps simplify the initiation of insulin and allows the patients to improve their glycemic control. As per the ADA (American Diabetes Association) and EASD (European Association for the Study of Diabetes), the consensus algorithm is being released for the initiation and adjustment of the therapy for treating Type 2 DM. As Neal et al. (2015) mentioned, oral treatment is based on clinical trials, enhancing the safety and efficiency of curing Type 2 DM. In the case of Mr X, oral medication has been given which is followed by regular exercise and a strict diet regime. The oral medications helped Mr X improve glycemic control and reduce the risk of hypoglycemia. The patients' treatment and their bodies' responses to the oral medication decide the continuation of the oral therapies.

Study Approach, Sample Size, and Population

Oral medicines are the tools that help patients step up and reach the targeted blood glucose levels. As Vijan et al. (2014) mentioned, the study sample has been collected through secondary research. The researcher has studied several books, articles, and PubMed websites to review studies regarding the medication of diabetic patients. It is seen that the sample taken by the researcher for this case study is of Mr X, who was admitted to the hospital with Type 2 DM. It is seen that though the patient had left smoking and drinking for many years and is still obese, the doctors initially asked him to reduce his weight and provided him with oral medications. According to White et al. (2013), the overall weight of the patient was reduced considerably through oral medications, exercise, and diet. It was also seen that due to oral medication, the patient's insulin secretion became normal, and the cells reduced their resistance to insulin, which reduced the sugar level of the patients.

Evaluating the Outcomes and Identifying the Reliability and Validity:

Type 2 DM is caused when the human pancreas cannot produce sufficient insulin hormone, which leads to the body tissues becoming resistant to the normal insulin level. It increases the glucose level in the blood and complications arise when it is not treated. As Raj, Sahay & Tripathi (2016) mentioned, patients suffering from Type 2 DM need regular monitoring and ongoing treatment to maintain normal sugar levels in the blood. While the researcher was discussing the case study, it was seen that doctors and medical practitioners nowadays prefer oral medication before using insulin in the blood. The reliability and validity of the results can be seen through the improvements among the patients on the application of oral medications instead of insulin. The case of Mr. X shows that the patient's condition has improved on the application of oral medications, instead of insulin. There are several cases which show that the initial usage of insulin causes renal failure and infection, where people may face early death (Samsom et al. 2016).

Brassiness of the Study:

The study is unbiased, as the researcher has done vivid secondary research to find examples of patients treated with oral medication instead of insulin. The doctors claim that the usage of insulin causes renal diseases and at the early stage, the body becomes dependent on the insulin, rather than regulating its functionalities (Scirica et al. 2013). Doctors have claimed that the early stage of in-taking insulin reduces the metabolism and also lowers the dietary intake due to the decreasing appetite of the patients.

Conclusion

The overall assignment deals with using oral anti-diabetic medication to reduce the risk of kidney disease compared to insulin use. It is discussed that the patients are infected with renal diseases due to the sensitivity and continuous usage of insulin. A case study of Mr X has been discussed, which shows that he was suffering from Type 2 DM and was admitted to the hospital. The doctors, after a thorough check-up, decided to provide him with oral medications followed by exercise and a strict diet, instead of insulin. Within a few months of the oral medication, Mr. X responded positively to the oral medication and the lifestyle provided by the doctors. It helped him regulate insulin production and reduced the body's resistance against it. This example proved the reliability and validity of oral medication. The ADA and EASD are also reporting several cases of patients where oral medication has helped the patients to lead a normal life, without taking insulin. Moreover, the study conducted is quite unbiased, proving that Type 2 DM could be treated easily through oral medication instead of taking insulin.

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