

Glucometer for Pharmacological Glycosuria

Arvind Meena, Deepak Kumar, Rajasri Bhattacharyya and Dibyajyoti Banerjee*

Department of Experimental Medicine and Biotechnology, Postgraduate Institute of Medical Education and Research, India

***Corresponding author:** Dr. Dibyajyoti Banerjee, Department of Experimental Medicine and Biotechnology, Postgraduate Institute of Medical Education and Research, Chandigarh 160012, India, Email: dibyajyoti5200@yahoo.co.in

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Abbreviations: SGLT2: Sodium-Glucose Cotransporter 2; FDA: Food and Drug Administration

Editorial

Diabetes mellitus is commonly known as diabetes. It is chronic metabolic disorder in which the pancreas does not produce the adequate amount of insulin, or the produced amount of insulin does not work appropriately. It is estimated that 422 million young were living with diabetes in 2014 globally, just doubled the number as compared to 1980. The global prevalence of diabetes is increased two-fold since 1980, from 4.7% to 8.5% in the young population [1-4]. It has been observed that in 2000, 31.7 million individuals with diabetes in India, and topped the world with the highest number. The prevalence of diabetes is predicted 79.4 in India by 2030. Therefore, the management of diabetes is essential to cure the individuals, but there is no permanent cure for diabetes. Early diagnosis of diabetes will always lead the better outcomes to cure the disease. The longer individual lives with undiagnosed diabetes the worst outcomes likely to be [5-8].

Epidemiology of hyperglycemia suggests that the globe is facing an epidemic of type 2 diabetes mellitus [9]. Type 2 diabetes can be managed by various pharmacotherapies, which are available today such as, metformin,

thiazolidinediones, insulin and glucagon-like peptide-1 agonists. Efficacy of these therapies altered in each patient due to the limiting side effects including hypoglycemia, weight gain and fluid retention [10-13]. Thus, new approaches are required for the better management of type 2 diabetes. Among the new therapy for the treatment of type 2 diabetes, few pharmacological compounds which cause the glycosuria are in the very advanced phase of ongoing clinical trials with noticeable results. These compounds are the member of Gliflozin family. Canagliflozin is the first drug which is approved by FDA for the treatment of type 2 diabetes [14]. Other compounds of this family are, and empagliflozin are in the ongoing phase III and Phase II clinical trials [15,16]. Canagliflozin is the inhibitor of sodium-glucose cotransporter 2 (SGLT2). SGLT2 is present in the renal proximal tubules and reabsorbed almost 90% of renal glucose [17]. Mutation in SGLT2 leads to the increased concentration of glucose in urine [18]. These pharmacological compounds work independently of insulin and maintain the homeostasis by inhibiting the SGLT2 which lead to the increased urinary glucose excretion.

These new compounds reduce glucose levels without causing the hypoglycemia and weight gain, but the possibility of various side effects remains to be further elucidated. Therefore, we strongly recommend the point of care facility for the estimation of urine glucose level that has the potential to understand the efficacy of these new drug molecules. So in near future glucometers may

be commonly necessary to estimate glycosuria for the understanding efficacy of these new drug molecules in diabetes patients.

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