

## **Half of Three Oral Antidiabetic Drugs as a Regimen for Treatment of Type 2 Diabetes Mellitus Patients in Low-income Populations**

There is a progressive increase in the number of patients developing type 2 diabetes mellitus (T2DM), worldwide. Several classes of antidiabetic drugs are available. Metformin is a biguanide with many pleiotropic effects in addition to decreasing hyperglycemia. Dipeptidyl-peptidase 4 (DPP4) inhibitors are a group of medications used as glucose-lowering agents in T2DM. The combination of metformin plus DPP4 inhibitors have an additive effect on improving HbA1c level but of high cost, especially in low-income countries like Egypt. So, the aim of this study is to assess the efficacy and safety of adding sulphonylureas (e.g, glimepiride or gliclazide) to half the dose of a DPP4 inhibitor /metformin combinations compared to using the full dose of this DPP4 inhibitor /metformin combination in T2DM. Materials and Methods: This prospective study was conducted on 186 patients with type 2 diabetes mellitus (T2DM), who achieved glycemic targets on DPP4 inhibitor (sitagliptin or vildagliptin) 50 mg /metformin 1000 mg, twice daily fixed-dose combination. The enrolled subjects were then divided into 2 groups. Group 1 were 92 patients continued on the same regimen. Group 2 (patient who could not afford the high cost of the DPP4 inhibitors) shifted to half the dose of the DPP4 inhibitor / metformin plus a dose of sulphonylureas (SU) either Glimepiride (4 mg) or Gliclazide (60 mg slow release form) once daily. For both groups: weight, fasting blood glucose (FBG), 2 hours postprandial glucose (2 hrs PPG), and glycated hemoglobin (HbA1c), were measured at the start and after 12 weeks of the study. Results: There were a decrease in FBG, 2hs PPG, and HA1c with an increase in weight and in the mean number of hypoglycemic episodes per patient among participants shifted to half the dose of DPP4 inhibitor /metformin with an added dose of SU compared to the other group of patients continued on the full dose of the same DPP4 inhibitor /metformin combination. Conclusion: Adding sulphonylureas (either glimepiride or gliclazide) to half the dose of a DPP4 inhibitor/metformin combination is non-inferior to using the full dose of this DPP4 inhibitor/metformin combination twice daily in T2DM patients with low risk of hypoglycemia. This regimen may be effective and safe for low-income populations like Egypt.