

# Half of three regimen for treatment of T2 DM in low income populations

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## OBJECTIVES

Diabetes mellitus is a global problem affecting >415 million persons globally . The cost of its treatment is another global challenge as the annual cost of diabetes management is over 600 billion US \$. Diabetes affects middle and low socio economic countries than well developed countries and hence the burden is more on the low income countries. DPP4-I are a recent group of oral medications that are safe , effective in treating Patients with T2DM with low risk of hypoglycemia and some weight loss but they are more expensive compared to SUs **Aim of the work:** is to compare the efficacy and safety of treating type 2 diabetes mellitus patients with full metformin /DPP4 inhibitor fixed combination ( full dose ) versus continuing on only half dose plus adding a half dose of SUs ( new generations as glimipride or gliclazide)

## METHODS

This study included 192 type 2 diabetic subjects who achieved glycemic targets on DPP4-i /metformin Fixed dose combination , subjects were then divided into 2 groups. Group - 1 continued on same regimen, Group 2 (patient who could not afford the high cost of the DPP4-I ) shifted to t half the dose of the DPP4 / metformin plus a small dose of either Glimipride (4 mg ) or Gliclazide (60 mg ) once daily . The study continued for 24 weeks . All the subjects were subjected to thorough history and medical examination . At the start and at the end of the study FBS , 2HPP, A1c , were measured , Also body measurements including height , weight , waist (BMI) ,waist circumference , any hypoglycemic attacks were reported . Also the monthly costs of the used medications were calculated

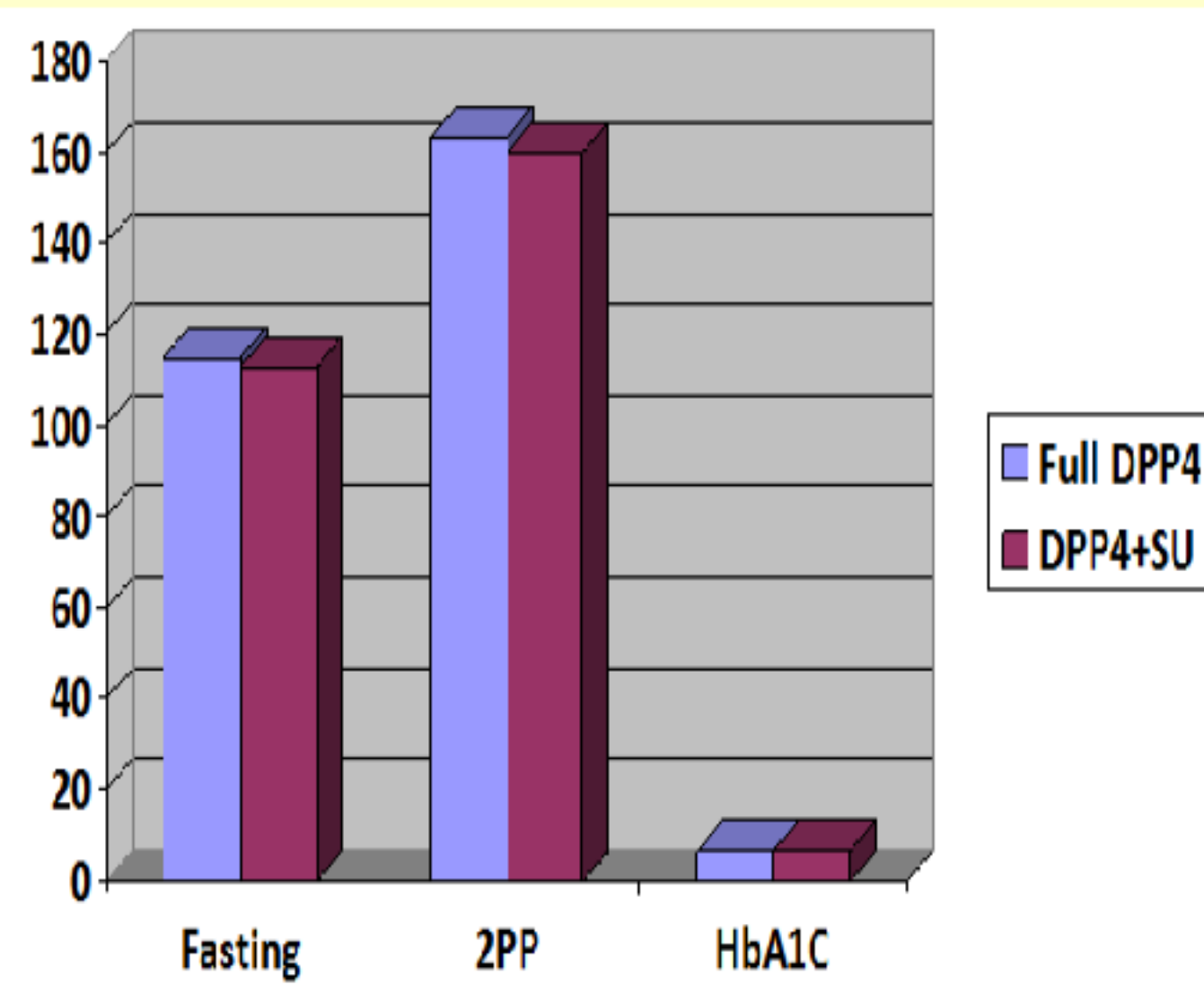


Figure (1) comparing first group of full dose DPP4+metformin, and second group of

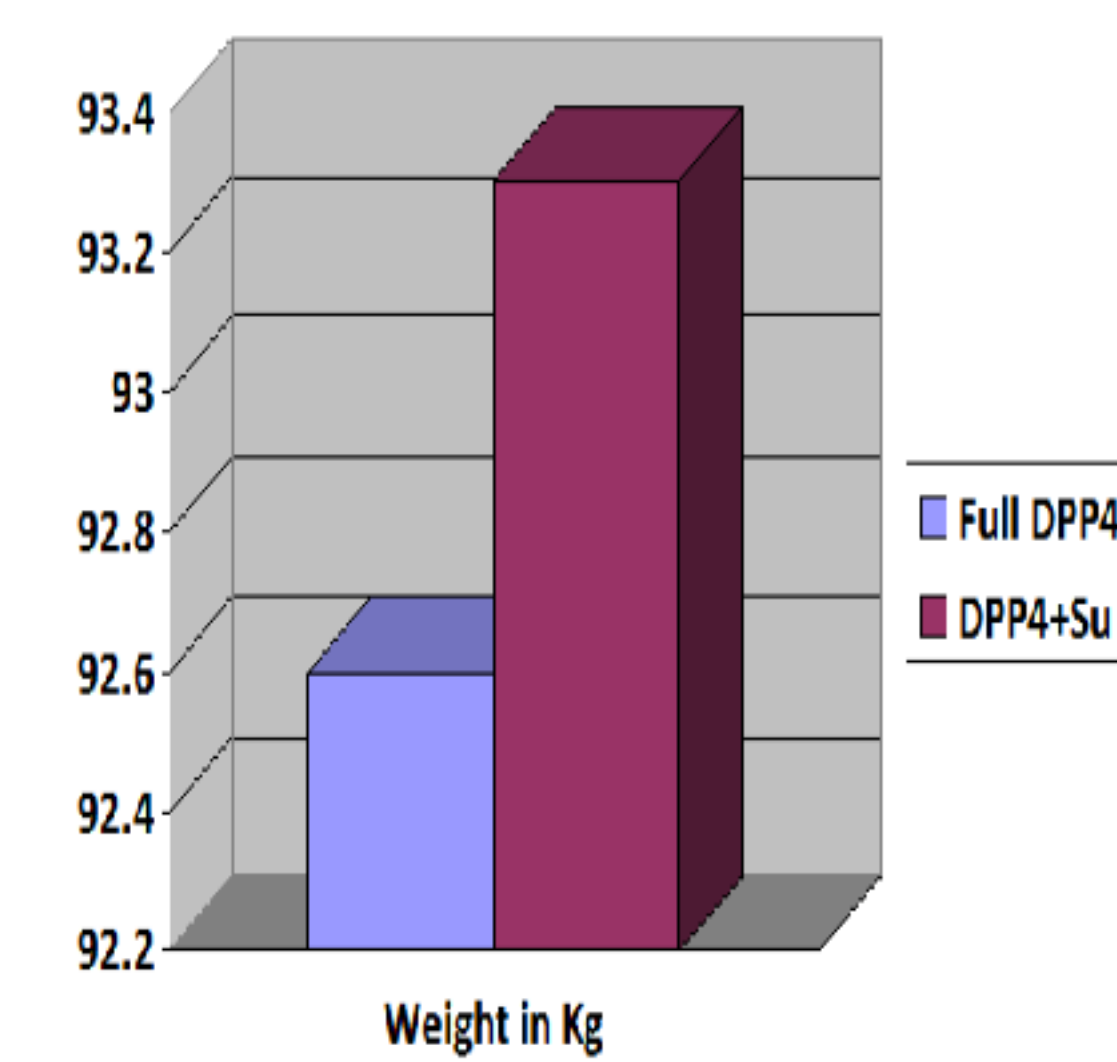


Figure 2 showing comparison of weight between 2 groups

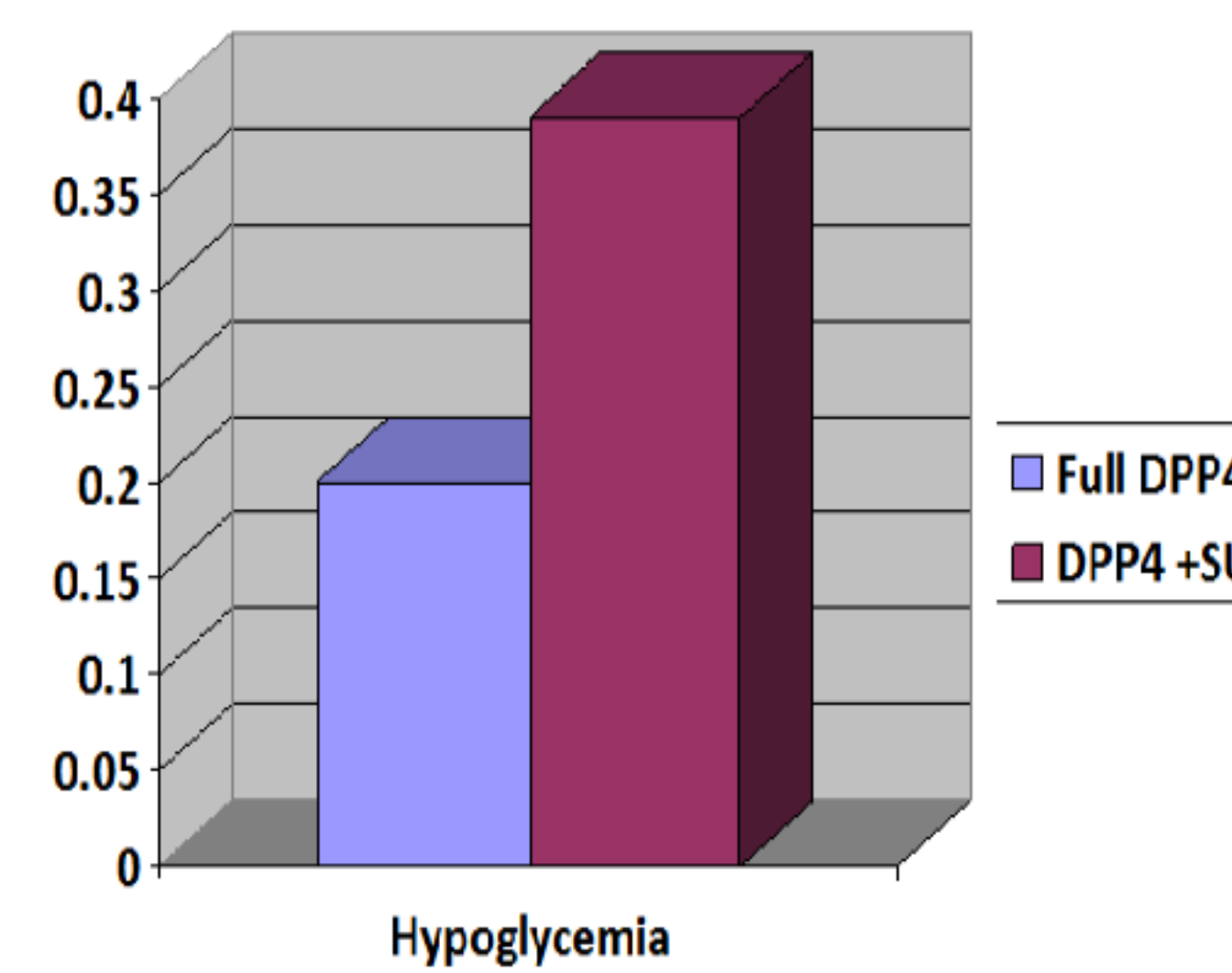


Figure 3 showing hypoglycemia in both groups

Table (1) Comparison between mean of 2 groups

	Full dose DPP4/Metformin mean±SD	Half dose DPP4/Metformin +Sulfonylurea mean±SD	P-value
Fasting blood glucose	115 ± 9.3	113.4 ± 10.3	0.54
2PP blood glucose	163 ± 12.2	160 ± 11.6	0.49
HbA1C	6.7 ± 1.1	6.7 ± 0.9	0.67
Weight	92.6 ± 3.4	93.3 ± 4.2	0.7
Hypoglycemia (event/month)	0.27 ± 0.1	0.39 ± 0.2	0.03

## RESULTS

The results of this work showed that; the average FBS in group - 1 (full dose DPP4-I/metformin) was 115 mg/dl while in group -2 (half dose of DPP4-I/Mmetformin + SU ) it was 113 mg/dl, the 2HPP blood glucose was 163 mg/dl in group - 1 while in group -2 it was 160 mg/dl, The A1C group - 1 was 6.72, while in group 2 it was 6.68. and the differences were not statistically significant (p > 0.05) . as regard the incidence of hypoglycemic events it was 0.27 events /month in group -1 compared to 0.39 events /month in group-2 (p =0.031) The total cost of treatment in group i(full dose metformin+DPP4) was 600 L.E over the 3 months while the total cost of group 2(1/2 dose DPP4+ metformin+ sulfonylurea) was 375 L.E.

## CONCLUSIONS

It was concluded that DPP4-I are one of the new groups for treating T2 DM with less gain and lower risk of hypoglycemia but at a higher cost that SUs and this high cost is a barrier for many patients in the developing low income countries to use them or to continue using them . This study showed that for patients who can not afford the high cost of the DPP4-I they can use only half of the dose together with a small dose of one of the recent generations of SUs to gain most of the benefits of the incretin therapy to reach the glycemic targets with no weight gain and little increase in the risk of hypoglycemia that could be prevented by further reduction of the dose of the used SU or some dietary and life style modifications

## References

- 1-. Bennett WL, Maruthur NM, Singh S, et al. 2011 Comparative effectiveness and safety of medications for type 2 diabetes: an update including new drugs and 2-drug combinations. Ann Intern Med ;154:602–613
- 2- Nathan DM, Buse JB, Kahn SE, et al.; GRADE Study Research Gr . Rationale and design of he glycemia reduction approaches in DM: a comparative effectiveness study Diabetes Care 2013;36:2254–2261