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## MARKED IMPROVEMENT OF INSULIN RESISTANCE UPON ADMINISTRATION OF INSULIN SENSITIZERS

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**Background:** Type 2 DM progression is highly associated with decreased beta cell mass and insulin resistance leading to hyperglycemia. Insulin resistance remains an important challenge to tackle for better blood glucose control. Although metformin is considered to be a strong insulin sensitizer, its main effect is by suppressing hepatic glucose output while pioglitazone produces a greater increase in peripheral glucose uptake. Both medications play a role in improving insulin sensitivity and lead to better glucose utilization. **Clinical Case:** A 42-year-old gentleman with a type 2 DM for 9 years presented with uncontrolled DM and early maculopathy. His regimen included biphasic human insulin 70/30 100 Units twice daily and a regular human insulin 100 Units OD. His HbA1c was 13.7 % and HOMA-IR 35. Escalation therapy with multiple drugs was attempted and his regimen was changed to biphasic-insulin 70/30 100 units in the morning and 50 units in the afternoon along with sitagliptin/metformin 50/1000mg, and Glimepiride/Pioglitazone 4/30mg. Two days later, the patient developed episodes of hypoglycemia upon which his biphasic human insulin dosage was reduced. The patient returned ten days later complaining of recurrent hypoglycemia; a decision was made to switch his insulin regimen to glargine U 300 50 Units daily and addition of dapagliflozin 10mg/daily in addition to his ongoing regimen. 2 weeks later, the patient returned for follow-up with within range 6-point SMBG. **Conclusion:** Good glycemic control may be better-achieved insulin sensitizers despite being on a very high dose of insulin.



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