EFFICACY OF TENELIGLITPIN AS MONITORED WITH CONTINOUS GLUCOSE MONITORING SYSTEM (CGMS) IN COMPARISON WITH STANDARD OF CARE IN INDIAN SETTING

Dr Hemant Thacker[1], Dr. Jothydev Kesavadev[2], Ms. Rupal Shrimanker[1]

1. Bhatia Hospital, Mumbai, India
2. Jothydev's Diabetes and Research Center, Kesari Nagar, Poojapura, Thiruvananthapuram, India

Introduction

- HbA1c gives generalized retrospective information about a patient's glucose exposure.
- Literature has shown that patient with similar HbA1c values can have dissimilar pattern of glucose peaks and nadirs throughout the day and night
- In India, Sulphonylureas and Gliptins are widely used as adjuvants to Metformin

Objectives

- To evaluate the efficacy of teneliglitpin as monitored with continuous glucose monitoring system (CGMS) in comparison with standard of care in Indian setting

Methodology

- This was a single centre, prospective, open label, comparative study between Teneligliptin and Glimepiride in patients with type 2 diabetes recruited from outpatient clinic
- Patients aged 30–79 years, with HbA1c above 7.0% and below 9.5% in spite of optimal metformin dose, diet and exercise therapies were divided into two groups to receive Teneligliptin* or Glimepiride as adjuvant to metformin.
- Baseline parameters like post prandial glucose level, and fasting glucose level were noted, and 14 days continuous glucose monitoring (CGMS) was conducted using a CGMS device**
- Statistical analysis for demographic data of age and Body Mass Index (BMI), inter group changes in mean fasting glucose, mean post-parandial glucose, average time spent in target, above target and below target was conducted using Student-t test

- Statistical analysis for demographic data gender was based on chi-square method

Results

- Fifty-two subjects aged 30–79 years, with HbA1c above 7.0% and below 9.5% in spite of optimal metformin dose, diet and exercise therapies were divided into two groups to receive Teneligliptin* or Glimepiride as adjuvant to metformin.
- Demographics presented in Table 1

DEMOGRAPHICAL DATA (Table 1)

| Parameters	Met + Sulfonylurea	Met + Teneligliptin	P Value
No. of cases	24	28	
@Age (yrs)			
Mean	56.96	58.59	0.55 (NS)
SD	10.44	08.75	
Range	32.0 – 73.0 Yrs	41.0– 73.0 yrs	
@BMI (Kg/m2)			
Mean	25.75	25.63	0.72 (NS)
SD	02.31	02.87	
Range	21.6 – 31.7	20.5 – 33.9	
#Sex (%)			
Male	12 (50.0)	18 (64.3)	0.30 (NS)
Female	12 (50.0)	10 (35.7)	

@By Student t test
#By Chi - Square Test
NS = Not Significant

- After 14 days the mean fasting glucose level dropped by 15.2% and mean post prandial glucose level dropped by just 4.6% in Glimepiride group while in Teneligliptin group, mean fasting glucose level reduced by 9.6% and post prandial glucose level reduced by 13.6%
- CGMS analysis showed 10.04% cases of Glimepiride had glucose level below 80mg/dl, the lowest recorded was 40mg/dl Vs that in Teneligliptin group was just 3.4%, with lowest glucose level of 73 mg/dl.

- Comparison of average time in target of between the groups in figure 1

COMPARISON OF AVERAGE TIME IN TARGET OF BETWEEN THE GROUPS (Figure 1)
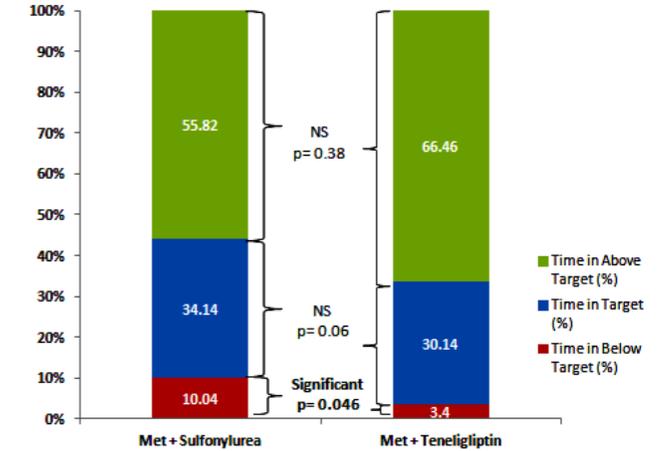
- Similarly the mean highest glucose excursion of 320 mg/dl was observed in Glimepiride arm, while in Teneligliptin arm it was 287mg/dl. The average glucose level and percentage of time in target were not significantly different among the two groups

Conclusion

- This study has explored the benefits of teneligliptin beyond the regular glycemic parameters, Teneligliptin has shown better post prandial glucose control with less glucose excursion and lower incidence of hypoglycaemia

* Teneligliptin prescribed was Inogla,Wockhardt LTD, India
** The CGM device used was FreeStyle Libre, Abbott LTD, USA