

A COMPARATIVE STUDY OF REPAGLINIDE VERSUS GLIMEPIRIDE MONOTHERAPY IN TYPE-2 DIABETES MELLITUS PATIENTK. Sudheer¹**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: Diabetes mellitus refers to a group of common metabolic disorder that share the phenotype of hyperglycaemia. Insulin resistance and abnormal insulin secretion is central to the development of type 2 DM the primary effect is controversial. Present study is a prospective study conducted to evaluate and compare the effect of glimepiride and Repaglinide in patient with type-2 DM attending general medicine between Oct. 2013 to Oct. 2015. Both the drugs have same glycaemic profile and lipid profile but there is significant difference in the change in PPBs and HbA1c % but a study with more no of patient is required to evaluate it more effectively.

KEYWORDS: Diabetes mellitus, Glimepiride, Repaglinide, Monotherapy.

INTRODUCTION: DM refers to a group of common metabolic disorder that share the phenotype of hyperglycaemia. Insulin resistance and abnormal insulin secretion is central to the development of type 2 DM the primary effect is controversial.⁽¹⁾ Globally, as of 2010, an estimated 285 million people had type 2 diabetes mellitus making up about 90% of the cases. In 2013, according to International Diabetes Federation, an estimated 381 million people had diabetes. Its prevalence is increasing rapidly, and by 2030, this number is estimated to almost double. Diabetes mellitus occurs throughout the world, but is more common (especially type 2) in the more developed countries. The greatest increase in prevalence is, however, expected to occur in Asia and Africa, where most patients will probably be found by 2030.^(2,3) As it is a chronic disease so lifelong pharmacotherapy is required to maintain euglycemia and to prevent the complications such as cardio vascular disease, retinopathy, nephropathy and neuropathy ^(4,5) Various classes of medication are approved for treatment of type – 2 DM present study has been conducted to compare the effect of two drugs glimepiride and Repaglinide on various parameters.

MATERIAL AND METHOD: Present study is a prospective study conducted to evaluate and compare the effect of glimepiride and Repaglinide in patient with type-2 DM attending general medicine between Oct. 2013 to Oct. 2015.

Inclusion Criteria:

- ❖ Sex – Male.
- ❖ Age - 30 to 60 years.
- ❖ FBS - 140 to 220 mg /dl.

Exclusion Criteria:

- ❖ Diabetic Ketoacidosis.
- ❖ H/o of sensitivity of drug.
- ❖ Hepatic and Renal disorders.

ORIGINAL ARTICLE

Twenty male patient were selected (because number male patient was more and was easy to be in touch with them and drop out case was less) and divided in to two groups as per inclusion and exclusion criteria group I consists of 10 newly diagnosed type-2 DM taking Glimiperide 1mg and group-2 consists of 10 newly diagnosed type-2 DM taking Repaglinide monotherapy 1mg. once daily laboratory parameters like FBS, PPBS, TG, LDL, HDL, chol and Hb A1c% have been measured before and after study. The study was conducted for 12 weeks and every 15 days FBS and PPBS were done and Pt was asked to visit every 15 days. Before starting the study prior permission was taken from institutional ethics committee and informed consent was obtained from each patient enrolled for study in two language English and local language. FBS and PPBS was estimated by glucose oxidase method.HbA1c was estimated by spectrophotometry. HDL was estimated by precipitation method. Serum cholesterol was estimated by ZAK modified method. LDL by W. D. Friedewald, R. I. Lavy and D. C. Friedrickson and triglyceride was estimated by Debnath modification of NERI and FRIENGE.⁽⁶⁾

RESULT: After 12 weeks of treatment all parameter were repeated. As the patient was called for FBS and PPBS every 15 days so they were also asked for any drug reaction or hypoglycaemia episode in between.

			Mean	SE	T	P
FBS	Gli	BT	160.2	7.60	11.01	<0.001
		AT	130.6	7.76		
	Rep	BT	168.4	7.54	6.00	<0.001
		AT	132.6	9.14		
PPBS	Gil	BT	190.6	5.68	6.20	<0.001
		AT	100.4	7.70		
	Rep	BT	200.2	9.0	5.0	<0.01
		AT	156.2	6.00		

Table 1: Effect on FBS and PPBS

Bt: Before Treatment, At: After Treatment (Gli: Glimiperide, Rep: Repaglinide)

Effect on FBS and PPBS:

1. The mean change in FBS was 18.47% with the treatment group taking Glimiperide 1mg and the mean change in FBS with Repaglinide group was, 21.25%.
2. The mean change in PPBS was 15.78% in treatment group taking Glimiperide. 1mg and the mean change in PPBS with Repaglinide was 22%.

Effect on Lipid profile:

1. The mean change in the serum TG was 6% with Glimiperide 1mg and 17.64% with Repaglinide group.
2. The mean change in the serum LDL was 6% in Pt taking Glimiperide 1mg and 8% in Repaglinide group.

ORIGINAL ARTICLE

3. The mean change in cholesterol with pt taking Glimepiride was 15% but mean change in chol with Repaglinide group was 5%.
4. The mean change in HDL concentration with Glimepiride group was 14% and change in conc of HDL with Repaglinide was 7%.

					P
TG	Gli	BT	160.00	3.20	<0.05
		AT	150.00	8.90	
	Rep	BT	170.00	6.43	<0.05
		AT	140.00	4.14	
LDL	Gli	BT	160.00	3.0	<0.05
		AT	150.00	3.2	
	Rep	BT	166.00	3.2	<0.05
		AT	152.00	2.03	
CHOL	Gli	BT	199.00	2.6	<0.001
		AT	170.00	3.42	
	Rep	BT	200.00	2.77	<0.01
		AT	190.00	2.60	
HDL	Gli	BT	42.00	1.26	<0.001
		AT	46.00	1.75	
	Rep	BT	43.00	1.30	<0.05
		AT	46.00	1.70	

Table:-2 Effect on Lipid profile

BT: BEFORE TREATMENT, AT: AFTER TREATMENT (GLI: GLIMIPERIDE, REP: REPAGLINIDE).

Effect on Glycosylated Haemoglobin: Mean change in the Glycosylated haemoglobin was 10.2% with group taking Glimepiride and with patient taking Repaglinide was 17.39%.

			Mean	SE	P value
HbA1c	Gli	BT	8.80	0.08	<0.001
		AT	7.90	0.06	
	Rep	BT	9.2	0.20	<0.001
		AT	7.6	0.17	

Table 3: Effect on Glycosylated Haemoglobin

BT: BEFORE TREATMENT, AT: AFTER TREATMENT (GLI:-GLIMIPERIDE, REP:- REPAGLINIDE).

DISCUSSION: Fasting and postprandial blood sugar was significantly decreased (P= <0.001) in both the group which is as per studies Melander.⁽⁷⁾

ORIGINAL ARTICLE

There was significant change in the all the lipid parameters as in the study of Armitage and Ginsberg.^(8,9) But changes by Repaglinide TG and serum LDL was more than Glimepiride this is as per the studies of Zhany H.⁽¹⁰⁾

As per the study of J.Ma, L.Y.Lin et.al. The reduction in the glycosylated haemoglobin was more with Repaglinide because Repaglinide decreases more postprandial hyperglycaemia. In our study also the % change in glycosylated haemoglobin was more in the group taking Repaglinide than Glimepiride as % change in PPBS was also more.

So we can say that both the drugs are effective but the decrease in PPBs and HbA1C% was more with Repaglinide.

CONCLUSION: So we can conclude that both the drugs have same glycaemic profile and lipid profile but there is significant difference in the change in PPBs and HbA1c% but a study with more no of patient is required to evaluate it more effectively.

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ORIGINAL ARTICLE

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