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ABSTRACT

Background: Efficacy of Dapagliflozin in combination with Metformin versus Sitagliptin in type 2 diabetic patients in hayat abad medical complex hospital Peshawar to check the efficacy of these anti Diabetic drug on patients and check the results of these two double combination drug using long tram and short tram treatment check effectiveness, safety side effects.

Purpose: Randomized Measured study in Department of diabetes and Endocrinology HMC Hospital, Peshawar after the hospital ethical committee approval for one year i.e. 12-11-2017 to 12-12-2018 check the efficy of dapagliflozin in combination with metformin versus sitagliptin local setting.

Methodology: three hundred subjects were selected via Hospital and opd, Patients were randomly divided into two groups. In Group-A, patients were given 100mg q.d sitagliptin plus 850 mg metformin twice a day. In Group-B, patients were given 10mg qd dapagliflozin plus 850mg metformin twice a day. Patients were followed up in OPD for 7/24 weeks. After 7/24 weeks, blood sample was obtained for assessment of HbA1c. Reports were measured and if HbA1c is < 6.0 then efficacy achieved. All this information was recorded on Performa.

Results: the efficacy dapagliflozin and metformin versus sitagliptin and metformin in type 2 diabetes mellitus patients shows that 105(35.5% in Group A and 81(25.5%) in Group-B had efficacy and p value was 0.10.

Conclusion: the study showed that Role of Efficacy of Metformin and Dapagliflozin is not significantly different when compared with Metformin and Sitagliptin in Diabetes Mellitus Type 2 patients.

Keywords: *Efficacy, Dapagliflozin, Metformin, Sitagliptin, Type 2 Diabetes Mellitus, Hmc Hospital*

INTRODUCTION

Depagliflozin with metformin is generally well tolerated and is an effective tool in helping patients with diabetes to improve glycemic control[1]. Sitagliptin has higher cost than dapagliflozin for management of Diabetes Mellitus Type 2[2]. In one study, dapagliflozin is more effective than sitagliptin for Diabetes Mellitus Type 2 patients[3]. The efficacy was achieved in 16% patients with sitagalptin and 24% patients with dapagliflozin having Diabetes Mellitus Type 2.($p>0.05$)[4]. In another study, efficacy was achieved in 47% patients with sitagaliptin and 29% patients with dapagliflozin for management of Diabetes Mellitus Type2 ($p<0.05$) and sitagalptin treatment over 7/24 weeks resulted in greater percentage% of patients achieving HbA1c goal than dapagliflozin[5].

METHODOLOGY

This study was conducted in Department of diabetes and Endocrinology HMC Hospital, Peshawar, for one year i.e. 12-09-2017 to12-12-2018. Sample size of 300 patients; 110 subjects in two groups A and B calculated with 85% study power and level of significance was 5%. Expected %age of efficacy was 47% with sitagliptin and 29% with dapagliflozin. Non- probability type of sampling technique was used. Patients of age 35-85 years of either gender presenting with identified with DM2 were included and patients having HbA1c>09 and with renal failure i.e. creatinine >1.2mg/dl and on hemodialysis and patients of liver disease were excluded.

Statistics Group Procedure: A total of 300 patients were selected Hospital Peshawar. Consent wastaken and patients were divided into A and B groups. In Group-A, patients were given 100mg q.d sitagliptin plus 850mg metformin twice daily. In Group-B, 10mg qd dapagliflozin plus 850mg metformin twice daily was given. If HbA1c is <6.5 then efficacy achieved. The information were analyzed using SPSS version 21.0.

RESULTS

The Demographical results are shown in tables 1 and 2.

Table 1: Age Distribution

Age (yrs)	Group-A (n=150)		Group-B (n=150)	
	n=	%age	n=	%age
35-50	110	63.64	138	61.82
51-85	40	36.36	42	38.18
Total	150	100	150	100
Mean±SD	**51.58±6.06**		**51.59±6.16**	

Table 2: Gender Distribution

Gender	Group-A (n=150)		Group-B (n=150)	
	n=	%age	n=	%age
Male	80	54.6	75	**50.00**
Female	70	45.4	75	**50.00**
Total	**150**	**100**	**150**	**100%**

Table 3: Mean BMI at baseline

BMI	Group-A (n=150)		Group-B (n=150)	
	Mean	SD	Mean	SD
	40.42	**4.04**	**40.33**	**3.44**

Table 4: Efficacy of Dapagliflozin and Metformin vs Sitagliptin and Metformin

Efficiency	Group-A (n=150)		Group-B (n=150)	
	n=	%age	n=	%age
Yes	59	37.2	38	**22.3**
No	91	66.5	112	**72.3**
Total	**150**	**100**	**150**	**100**

P value=0.10

DISCUSSION

The study reveals with the comparison of efficacy of dapagliflozin and metformin versus sitagliptin and metformin in newly diagnosed type 2 diabetes mellitus patients was 37.2%(n=59) in Group A and 22.2%(n=38) in Group B and p value was 0.10. Other study reveals that dapagliflozin is more effective than sitagliptin for Diabetes Mellitus Type 2 patients.[8] The efficacy was in n-59 patients 37.2% with sitagalptin n-38 22.3% patients with dapagliflozin having DM Type 2.($p>0.05$).[4] In another study, efficacy was 47% with sitagaliptin and 29% with dapagliflozin for management of Diabetes Mellitus Type 2 ($p<0.05$) and sitagalptin treatment over 7/24 weeks

resulted in greater %age of patients achieving HbA1c goal than dapagliflozin.[5] the findings are in agreement with this study however, the difference in our study was statistically not significant.

In this study, feedback of efficacy of dapagliflozin as monotherapyin patients with T2DM.[7] The review[6] focuses on dapagliflozin as add-on and initial combination therapy to other antidiabetics' agents in patients with T2DM. Dapagliflozin has been studied as initial combination therapy with metformin and as add-on therapy to metformin, glimepiride, pioglitazone, sitagliptin (with or without metformin), metformin plus SU and insulin (with or without up to two oral antidiabetic medications). The Role of dapagliflozin has also been compared with the SU glipizide added on to metformin as well as a componentof dual add-on therapy with sitagliptin to metformin.

CONCLUSION

Link between Metformin and Dapagliflozin efficacy is not significantly different when compared with Metformin and Sitagliptin in Diabetes Mellitus Type 2 patients

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