



ASSESSMENT OF GLYCEMIC CONTROL AND DRUG RELATED OUTCOME BY SOME ORAL ANTIDIABETIC DRUGS IN TYPE-II DIABETIC PATIENT AT TERTIARY CARE HOSPITAL

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ABSTRACT

Diabetes mellitus (DM) is a chronic metabolic disorder characterized by persistent hyperglycaemia. It may be due to impaired insulin secretion, resistance to peripheral actions of insulin, or both. The proportion of people with type 2 diabetes is increasing in most countries. 1 in 5 of the people who are above 65 years old have diabetes. The Prospective, randomized, observational study conducted with 150 study population for 6 months period at KG hospital, the data were collected. The study population were follow uped. The efficacy of DPP-4 and SGLT-2 inhibitors efficacy is measured. To Assess Glycemic control of some Oral anti diabetic drugs and drug related outcomes In Type-II Diabetic Patient at Tertiary Care Hospital. A total of 150 diabetic outpatients were enrolled in the study. The result indicates (68%) male and (32%) female. Prescribing pattern shows 61.33% (n=92) received monotherapy and 38.66% (n=58) were on combination therapy. Metformin (44.56%), Glibenglamide (16.3%) and Vidagliptin (19.56%) are in Monotherapy. Metformin and glimepiride (37.93%), Metformin and Glipizide (20.68%) and Metformin and Teneligliptin (13.79%) are found to be Combination therapy. 78.60% (n=118) were 8-9% of HbA1C. It was declined at the end of the study to 12.00% (n=18). This was due to the Continuous improvement in Quality of the life of the patient. The study concludes significant reduction of HbA1C at end of the study. The study the recommends, Metformin and vidagliptin drugs to manage the Blood glucose level.

KEYWORDS: Monotherapy, Glycaemic control, vidagliptin, drug related outcomes.

INTRODUCTION

Diabetes mellitus type is a chronic disease characterized by coexisting insulin deficiency and insulin resistance, with the resultant hyperglycemia leading to micro and macro vascular complications. Diabetes mellitus is an alarming rise from 40 million to 70 million people by 2025 in India. According to the Indian Council of Medical Research-Indian Diabetes study (ICMR), a national diabetes study, India currently has 62.4 million people with diabetes. This is set to increase to over 100 million by 2030. The prevalence of diabetes among adults has reached approximately 20% in urban and approximately 10% in rural populations in India. The world health organization (WHO) has projected that the global prevalence of TYPE-2 diabetes mellitus will more than double from 5 million in 1995 to 300 million by 2025. Between 1995 and 2025, there will be a 35% increase in worldwide prevalence of diabetes mellitus, from 4 to 5.4%.

Prescription pattern analysis is defined as insight regarding the existing drug usage to ensure rational drug therapy. Prescription is one of the most important tools that communicate between the physician and the patient and also a written order of medication schedule to the patient. The main aim of assessing prescribing pattern is to facilitate rational use of medicines. Irrational prescribing increases the cost of medical treatment, non-adherence to drug therapy, which can result in complications especially in diabetes due to uncontrolled blood glucose levels and also lead to rise in drug and health care costs. Glycaemic control remains the major goal for prevention of complications arising from diabetes. Poor glycaemic control can be prevented by using rational & safe use of anti-diabetic drugs. Currently used anti-diabetic medications are effective, however Poor Patient compliance, Insulin resistance & western lifestyle leads to poor glycaemic control. The drug utilization studies or prescription pattern studies are important for the rational use of medicines.

AIM

To Assess the Glycaemic control of some Oral anti diabetic drugs and drug related outcome In Type-II Diabetic Patient at Tertiary Care Hospital

METHODOLOGY

A prospective randomized Comparative study is conducted in the diabetic department of KG Hospital with 150 Type-II diabetic patients for the period of 6 months. Type-I and gestational diabetes patients are excluded from this study. Data collection form administered after receive the Consent form. The data were analysed by SPSS software.

RESULT

The study conducted with 150 outpatients with Type-II diabetic enrolled in study. The study found that majority of the population were Male patients 68% (n= 102) followed by female patients 32% (n= 48). It was given in Figure 1.

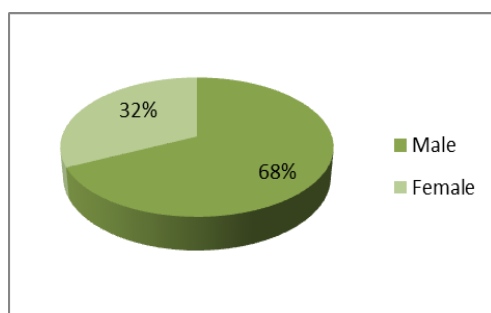


Fig 1: Gender wise distribution of diabetic patients.

The study results that, Among 150 outpatients of study population with age group ranging between 18 to 65 years, majority of study populations were under the age group 46 to 55 years (52.03%) and the least were in the age group of 18 to 25 (2.6%). The Family history of the study population was assessed and found that, the genetic factors in causing diabetes mellitus plays an important role and among 150 outpatients 32.00% (n=48) have a family history of Diabetes and 40.16% (n=60) patients do not have a family history of diabetes. The Social history of the study populations were assessed and found that, the majority of the patient 54.06 % (n=81) with Non-veg and 46.20% (n=46) were vegetarian. 61.7% (n=63) were Alcoholic and 38.3% (n=39) were Smokers. It was tabulated in Figure 2.

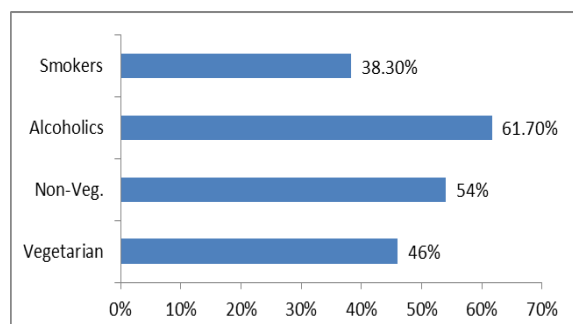


Figure 2: Social history of the study populations;.

The Study assessed the Occupation status in the study population and found that, the number of own business was 49.31% (n=74) of and only 8.1% (n=12) of Professionals. It was given in Figure 3

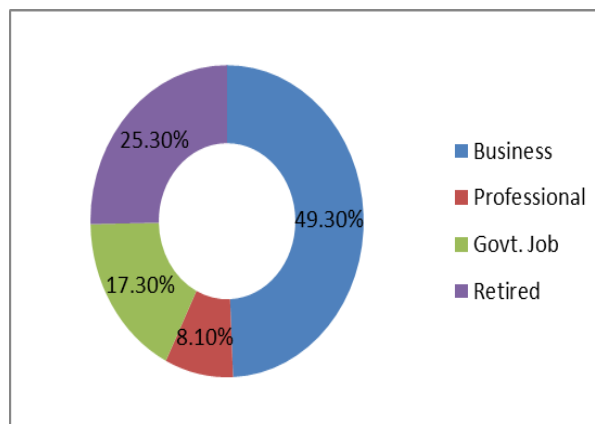


Figure 3: The Occupation status of the study population.

Prescribing pattern of oral hypoglycaemic drug in the study population was assessed and found that, A total of 61.33% (n=92) of patients were prescribed monotherapy and 38.66% (n=58) of patients were being prescribed a combination therapy (Both dual and triple drug therapy) for diabetes. Amongst monotherapy metformin (biguanide) was maximally prescribed. Other classes of drugs used as mono therapy were glipizide and glimepiride (sulfonylurea). Which was given in Figure 4.

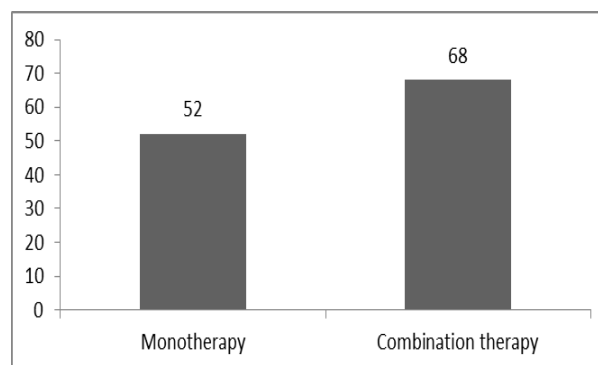


Fig 4: Distribution of therapies.

In the dual therapy, a combination of metformin with glimepiride (sulfonylurea) was maximally prescribed. 37.93% (n=22). In fixed dose Combination, Metformin and Teneeligiptin (DPP-4 inhibitor) were Prescribed in 13.79% (n=8) and was given in Table 1.

Table 1: Oral hypoglycemic drug pattern used during study.

Oral hypoglycemic drugs	Dose	Number of drugs prescribed	Percentage
Monotherapy:-			
Metformin	500mg	41	44.56%
Glimepiride	1mg 2mg	15	16.3%
Glipizide	5mg	2	2.17%
Vidagliptin	5mg	18	19.56%
Linagliptin	1mg	12	13.04%
Empagliflozin	1mg	4	4.34%
Single Pill- Fixed dose Combination:- (SP-FDC)			
Metformin + Glimepiride	500mg + 1mg 500mg + 2mg	22	37.93%
Metformin + Glipizide	500mg + 5mg	12	20.68%
Metformin + Tenelegliptin	500mg + 20mg	10	17.21%
Metformin + Vidagliptin	500mg + 20mg	8	13.79%
Metformin + Empagliflozin	500mg + 20mg	6	10.34%

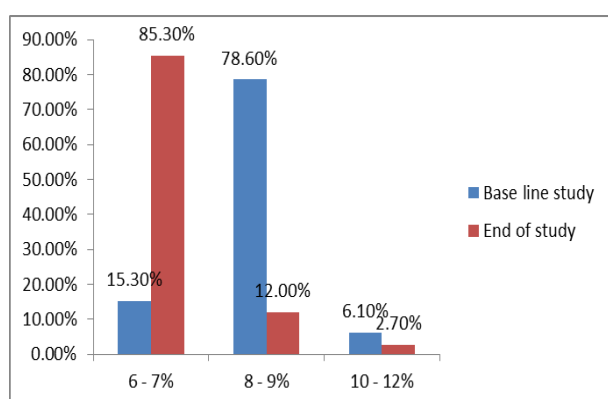
The Glycaemic Control of Oral hypoglycaemic drugs were assessed and found that the continuous monitoring

of patients and medication reduce the Glycaemic level in better manner. And the result was given in Table 2.

Table 2: Glycaemic control of oral hypoglycaemic drug.

Parameters	Base line study	At 5 th Week	At 10 th Week	At 15 th Week
FBS (mg/dl)	180 ± 4	160 ± 5	150 ± 4	110 ± 2
PBS (mg/dl)	200 ± 6	180 ± 2	160 ± 3	140 ± 3
RBS (mg/dl)	400 ± 2	300 ± 4	250 ± 5	120 ± 5

The average blood glucose level HbA1C was assessed in baseline study and end of the study. HbA1C level at baseline for 8 – 9% was found that 78.60%(n=118). It was declined at the end of the study to 12.00%(n=18). This was due to the Continuous improvement in Quality of the life of the patient. It shown in Figure 5.

**Figure 5: Glycaemic Control in study Population.**

CONCLUSION

The Glycaemic control was measured and found significant reduction in end of the study. The average blood glucose is measured with HbA1c test and concluded that, the Quality of Life of the diabetic patient improved by the follow up and continuous monitoring of the Patients. Hence, the study strongly recommends the Metformin and vidagliptin to effective management of Blood glucose level.

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