

An Observational Study to Find the Drug Utilization Among Diabetics at a Tertiary Care Hospital

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ABSTRACT

Background: Diabetes is a group of metabolic diseases characterized by hyperglycaemia resulting from defects in insulin secretion, insulin action, or both. The present study was conducted to assess Drug utilization among diabetes mellitus patients in a tertiary care hospital.

Materials and Methods: In the present study drug utilization among 200 diabetes mellitus patients was evaluated. Case records of the patients with patient detail, anti-diabetic prescribed with its dose, frequency, duration was noted. Collected data were entered into the MS excel sheet which was later transported to SPSS.

Results: In the present study a total of 200 patients were included in which 120 (60%) were females and 80(40%) were males. The mean age of patients was 56.08 (8.90) years. In maximum patients Metformin + Glimepiride was prescribed(30%) followed by Metformin (22.5%) and Metformin + Sitagliptin (14%). Dual therapy was prescribed in maximum patients (57.5%) followed by monotherapy (24%) and triple therapy (18.5%).

Conclusion: The present study concluded that Metformin + Glimepiride was prescribed in maximum patients and Dual therapy was prescribed in maximum patients.


Keywords: Drug utilization, diabetes mellitus, Dual therapy, Metformin, Glimepiride.

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INTRODUCTION

Diabetes mellitus (DM) is a spectrum of common metabolic disorders, arising from a variety of pathogenic mechanisms, all resulting in hyperglycaemias. It is a serious public health problem because of its high incidence in the population, its complications, mortality, high financial and social cost involve in the treatment and a significant deterioration in the quality of life of the people. 1As per World Health Organization, around 31.7 million individuals in India were affected by diabetes during the year 2000 which may further rise to 79.4 million by the year 2030.¹

The study of drug utilization is an evolving field. The use of large computerized databases that allow the linkage of drug utilization data to diagnosis is contributing to expansion of this area.² As per American diabetes association (ADA) guidelines 2015, the treatment protocols for type 2 diabetes mellitus would be Metformin, if not contraindicated and if tolerated, is the preferred initial pharmacological agent for type 2 Diabetes. If the A1c target is not achieved after approximately 3 months, consider a combination of metformin and one of these six treatment options:

sulfonylureas, thiazolidinedione's, DPP-4 inhibitors, SGLT2 inhibitors, GLP-1 receptor agonists or basal insulin.³ One initiative was the implementation of essential medicine list, with a separate list for all countries. The national essential list gives names, dosage forms of all drugs that are supposed to be presented at all time and accessible to the patients of that country.⁴ Clinicians are encouraged to prescribe drugs from the national essential medicine list to ensure rational and accessible drugs as per the international recommendations. National essential list of India 2015 mentions glimepiride and metformin as only oral hypoglycemic for diabetes mellitus treatment.⁵ The present study was conducted to assess Drug utilization among diabetes mellitus patients in a tertiary care hospital.

MATERIALS & METHODS

In the present study drug utilization among 200 diabetes mellitus patients was evaluated in the Department of Pharmacology, Krishna Mohan Medical College and Hospital, Mathura, Uttar

Pradesh, India. Institutional ethical committee clearance was obtained and written informed consent was taken from all patients. Patients aged of 18 years or more with the clinical diagnosis of type II DM were included in the study. Patients with co-morbid conditions (heart diseases, hypercholesterolemia, chronic lung diseases, and diseases of the nervous system like Parkinson's disease or Multiple Sclerosis and hypertension were excluded from the study. Case records of the patients which were focused

on the socio-demographic profile of the patients and a pre-tested interview schedule which had sections on the clinical history including present and past history as well as family history. The patient detail, anti-diabetic prescribed with its dose, frequency, duration was noted. Collected data were entered in MS excel sheet which was later transported to SPSS.v23. Only descriptive statistics (Mean, SD, proportions) were used for data analysis and presentation.

Table 1: Utilization pattern of Anti-diabetic drugs

Drugs	N(%)
Monotherapy	
Metformin	45(22.5%)
Glimepiride	3(1.5%)
Dual therapy	
Metformin + Glimepiride	60(30%)
Metformin + Sitagliptin	28(14%)
Metformin + Vildagliptin	22(11%)
Metformin + Glipizide	3(1.5%)
Metformin + Voglibose	2(1%)
Triple therapy	
Metformin + Glimepiride + Teneligliptin	12(6%)
Metformin + Glimepiride + Sitagliptin	10(5%)
Metformin + Glimepiride + Voglibose	8(4%)
Metformin + Glimepiride + Pioglitazone	7(3.5%)

Table 2: Anti-diabetic prescription pattern based on therapy

Therapy	N(%)
Monotherapy	48(24%)
Dual therapy	115(57.5%)
Triple therapy	37(18.5%)

RESULTS

In the present study a total of 200 patients were included in which 120 (60%) were females and 80(40%) were males. The mean age of patients were 56.08 (8.90) years. In maximum patients Metformin + Glimepiride was prescribed (30%) followed by Metformin (22.5%) and Metformin + Sitagliptin (14%). Dual therapy was prescribed in maximum patients (57.5%) followed by monotherapy (24%) and triple therapy (18.5%).

DISCUSSION

Drug utilization study is important in clinical practice because it serves as the foundation for implementing changes to drug dispensing policies at the local and national levels. Also, since it helps in developing strategies to utilize health resources most efficiently, it is particularly needed in a developing economy like India where 72% of all health care burden is borne by the patients.⁷ In the present study a total of 200 patients were included in which 120 (60%) were females and 80(40%) were males. The mean age of patients were 56.08 (8.90) years. In maximum patients Metformin + Glimepiride was prescribed (30%) followed by Metformin (22.5%) and Metformin + Sitagliptin (14%). Dual therapy was prescribed in maximum patients (57.5%) followed by monotherapy (24%) and triple therapy (18.5%). Suthar SD et al. found that 29.6% of the treatment regimens was based on monotherapy with insulin being the most commonly used drug.⁸

Kalra et al. found in a review that premixed insulin is the most commonly prescribed and used insulin in Asia. This may be attributable to the fact that physicians often have a difficult task in evaluating the contradictory recommendations and deciding which to adopt between basal and premixed insulin.⁹

Metformin alone and metformin combination was the most commonly prescribed anti-diabetic drug in the study by Das et al.¹⁰ The addition of thiazolidinediones to metformin in a 24 week randomized, double-blind and parallel-group study reported significantly improved glycemic control.¹¹

CONCLUSION

The present study concluded that Metformin + Glimepiride was prescribed in maximum patients and Dual therapy was prescribed in maximum patients.

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