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Drug Use Evaluation In Diabetic Patients at Out Patient Department Gorakhpur

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Abstract

Objectives: The aim of the present study was to assess drug utilization in diabetes patients as a quantitative type of prescription auditing to generate data with respect to their extent variability of drug usage in a heath care system of the area of Gorakhpur.

Material and Methods: The data for the study was collected from the survey conducted in February 2009-April 2009 at various hospitals of Gorakhpur. Two hundred diabetic patients were interviewed as a pre designed questionnaire based on clinical details. All the diabetic patients who visited the OPD during the study period enrolled in the study.

Results: The pattern of drug prescription in diabetes showed that sulfonylurea (65%) and biguanides (65%) were most frequently prescribed followed by thiazolidinediones (23%) and alpha glucosidase inhibitors (3%). Insulin was prescribed in 31 (15.5%) patients. Among Most common co-existing illness was found hypertension (31.97 %). Majority of drugs were prescribed in oral dosage form (84.5 %) followed by Parenteral (15.5 %).

Conclusion: It is concluded that the present prescribing pattern of antidiabetic drugs Gorakhpur does not completely meet standard guidelines of diabetic treatment. Hence there is a need to encourage physicians of Gorakhpur to follow the guidelines while treating diabetes.

Key words:

Drug utilization, prescribing pattern, Diabetes Mellitus.

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Drug utilization studies are powerful exploratory tools to ascertain the rational usage of drugs in society [1]. Drug utilization review is *"the evaluation of drug use in given health care against predetermined criteria and standards to assess the appropriateness of drug therapy"* [2]. These studies create a sound sociomedical and health economic basis for healthcare decision making. According to World Health Organization (WHO) drug utilization studies are the important indicators to assess the clinical and inappropriate drug use over the time. It is also used as a supervisory tool in health facilities and to measure the effect of an intervention [3]. Various guidelines are available that recommended for different classes of drug to treat diabetes.

Diabetes Mellitus (DM) is characterized by abnormalities in the normal carbohydrate, fat, and protein metabolism. On the basis of the body response to insulin DM is mainly divided in two type's i.e Type-I DM and Type-II DM. Type-I is insulin dependent diabetes mellitus which involves damage of pancreatic ß cells, while Type-II is non-insulin dependent diabetes mellitus which progress with the resistance to insulin. It is estimated that in India there are around 50.8 million in registered till year 2010 and this number may raise to 87.0 million by 2030 [4]. Current estimates revealed that there are at least 150 million people living with diabetes worldwide of which two-third is from developing countries [5]. The total number of diabetic patients is predicted to rise approx. 300 million by 2025 [6]. Due to high blood sugar levels DM patients are more susceptible to a wide range of infectious bacterial and fungal infections [7]. Diabetes treatment depends upon type and severity of diabetes. Treatment decisions are influenced by the age, life expectancy, comorbid conditions and severity of vascular complications.

The present study was conducted to establish the current prescribing pattern of antidiabetic drug in the area of Gorakhpur. Two hundred diabetic patients were the part of this study, of whom 125 (62.5%) were males and 75 (37.5%) females. Majority 44.5% of the patients were from the age group 40-50 years, followed by the age group 50-60 years (26.50%). About 53 (26.5 %) patients had no co-existing illness, while 47 (31.97%) patients had hypertension. Antidiabetic agents prescribed were second generation sulfonylurea, biguanides, thiazolidinediones and insulin. It was seen that 75 (37.5%) were on monotherapy and 125 (62.5%) were on polytherapy for diabetes. Out of 125 patients on polytherapy 89 (44.5%) were on a two drug combination, 35 (17.5%) on a three drug combination and 1 (0.5%) on four drug combination. In monotherapy insulin 31 (15.5%) was found maximum prescribed followed by thiazolidinediones 13 (6.5%), sulfonylurea 11 (5.5%), herbal 8 (4%), biguanides 7 (3.5%) and acarbose 5 (2.5%). Among antidiabetic drugs sulfonylurea (65%) and biguanides (65%) were most

frequently prescribed followed by thiazolidinediones (23%) and alpha glucosidase inhibitors (3%).

TABLE 1: Anti-diabetic Drug Utilization (Individual\Combination)

Anti-diabetic drugs	Mono-Therapy	Combination	Total
Sulfonylurea	11	119	130 (65%)
Biguanide	7	123	130 (65%)
Thiazolidinediones	13	43	56 (28%)
Acarbose	5	1	6 (3%)
Insulin	31	-	31 (15.5%)
Herbal	8	-	8 (4%)

The treatment pattern observed in this study were found in following order Biguanides= Sulfonylurea > Thiazolidinediones > Insulin > Herbal > Acarbose. Among the sulfonylurea category prescription was found to be maximum for glipizide followed by gliperamide. Among Biguanides only prescribed drug was metformin. Among thiazolidinediones category pioglitazone was maximum prescribed followed by rosiglitazone. There is a need to encourage physicians to follow the guidelines while treating diabetes. Overall there was no implementation of the clinical and therapeutic guideline for the management of DM which may be one of the potential reason for the current prescription pattern for the diabetic patients. Health regulatory authorities should take some initiatives to ensure the implementation of the therapeutic guidelines in all the health care settings through out India. Such initiatives will not only result in rational and quality use of medicine but also help in reducing the drug related problems with a higher therapeutic outcomes and better control for the conditions like diabetes mellitus.

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Conflict of Interest

All the authors have no conflict of interest

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