ISSN: 0976-822X

Available online on www.ijcpr.com

International Journal of Current Pharmaceutical Review and Research 2022; 14(3); 86-90

Original Research Article

A STUDY ON ADVERSE EFFECTS OF DRUGS DURING THE CLINICAL MANAGEMENT OF DIABETES

Khushboo

Department of Pharmacology, Jaipur college of Pharmacy, Jaipur (Raj.)

Received: 15-07-2022 / Revised: 06-08-2022 / Accepted: 25-09-2022
Corresponding author: Khushboo
Conflict of interest: Nil

Abstract

Background: DM is one of the widely spread disorder in the world. In this disease the blood sugar level increases. The management of DM is done by several oral hypoglycemic drugs. In this study we are observing the adverse effects during the management of DM and produced due to the consumption of anti-diabetic drugs. After the completion of the study we will be able to know the outcome of the adverse effects.

Aim & Objective: To observe the adverse drug reactions of drugs during the clinical management of the diabetes to overcome them and make life easy by safe use of drugs and balanced diet.

Method: The patients were selected from O.P.D of Imperial Hospital & Research Center. Total 509 patients will be selected on the basis of different study criteria. Patient counseling process was carried out using specified forms taken them for analysis.

Observation: Individuals of age 35-75 year, both sex and different type adverse effects were selected for present study. Initially total 550 patients were taken; out of 550 patients, 41 patients had discontinued the clinical trial due to selection criteria. Finally 509 patients were included. It was found that out of 509 patients 30% were below 50yr. male, 24% were below 50yr. females, 25% were above 50yr. male & 21% were above 50yr. females. It was found that out of 509 patients 75, 76, 84 & 132 patients of them were affected due to Dryness; Hair loss, Muscular & joint pain; Irregular breathing.

Result & Conclusion: As per the anthropometric assessment showing in the table and chart, the multiple and combination therapy of drugs having multiple and highest peak of the adverse effects. The highest percentage of adverse effects were found with drugs Metformin + Glimpride + Pioglitazone. The patients with Metformin + Glimpride + Pioglitazone were suffering from all the side effects as compared to other. The highest peak of patients found of the adverse effects were found with drug Metformin + Glipizide in male below 50 year old, where as in male above 50 year old found highest peak of patients with drug Metformin + Glimpride + Pioglitazone. The minimum adverse effects were recorded with drug Metformin with minimum number of patients. The second minimum adverse effects were recorded with drug Glimpride. As per the above results we can conclude that the drug Pioglitazone having maximum adverse effects as compared to other drugs.

Keywords: Diabetes, DM, Hyperglycaemia

INTRODUCTION

DM is one of the widely spread disorder in the world. In this disease the blood sugar level increases. The management of DM is done by several oral hypoglycemic drugs. In this study we are observing the adverse effects during the management of DM and

produced due to the consumption of anti-diabetic drugs. After the completion of the study we will be able to know the outcome of the adverse effects. Diabetes mellitus (DM) is probably one of the oldest diseases known to man. It was first reported in Egyptian manuscript about 3000 years ago.[1]

In 1936, the distinction between type 1 and type 2 DM was clearly made.[2]Type 2 DM was first described as a component of metabolic syndrome in 1988.[3] Type 2 DM (formerly known as non-insulin dependent DM) is the most common form of DM characterized by hyperglycemia, insulin resistance, and relative insulin deficiency.[4] Type 2 DM results from interaction between genetic, environmental and behavioral risk factors.[5,6]

People living with type 2 DM are more vulnerable to various forms of both short- and long-term complications, which often lead to their premature death. This tendency of increased morbidity and mortality is seen in patients with type 2 DM because of the commonness of this type of DM, its insidious onset and late recognition, especially in resource-poor developing countries like Africa.[7]

Method & Material: The patients were selected from O.P.D of Imperial Hospital & Research Center. Total 509 patients will be selected on the basis of different study criteria. Patient counseling process was carried out using specified forms taken them for analysis.

Selection: The patients were selected from O.P.D of Imperial Hospital & Research Center. Total 509 patients will be selected out of 550 on the basis of different study criteria. The questionnaire forms were filled for the patients as sample. The inclusion and exclusion criteria for the patients were as follow:

Inclusion Criteria: Males or females age would not less than to 35 years. Males or females age would not more than to 75 years. No limitations of physical activity

Exclusion Criteria: Severe orthopedic/cardiovascular/respiratory conditions restricting physical activity, Women who were pregnant and lactating at the time of study and Known case of HIV infection Instrumentation and Outcome Measurement: To carry out the study following tools were used. Subjects were assessed for the following ACQ.

- Anthropometric Assessment
- Clinical Assessment
- Questionnaires

The summarized clinical assessments after the counseling and questionnaires was detailed in the tabulated form for anthropometric data of observed adverse effects as follow:

AE-1 = Dryness, AE-2 = Hair loss

AE-3 = Muscular & Joint Pain, AE-4 = Irregular breathing

OBSERVATION : Individuals of age 35-75 year, both sex and different type adverse effects were selected for present study. Initially total 550 patients were taken; out of 550 patients,41 patients had discontinued the clinical trial due to selection criteria. Finally 509 patients were included. It was found that out of 509 patients 30% were below 50yr. male, 24% were below 50yr. females, 25% were above 50yr. male & 21% were above 50yr. females. It was found that out of 509 patients 75, 76, 84 & 132 patients of them were affected due to Dryness; Hair loss, Muscular & joint pain; Irregular breathing.

Table1: Anamnetic, Anthropometric Parameters of participants

DRUG USED	B50M-AE-1	B50M-AE-2	B50M-AE-3	B50M-AE-4	A50M-AE-1	A50M-AE-2	A50M-AE-3	A50M-AE-4	B50F-AE-1	B50F-AE-2	B50F-AE-3	B50F-AE-4	A50F-AE-1	A50F-AE-2	A50F-AE-3	A50F-AE-4
METFORMIN+ VOGLIBOSE	15	16	21	31	14	7	20	20	17	6	18	27	7	1	19	17
GLIMPRIDE	0	2	2	6	0	0	0	4	5	0	0	13	1	1	1	6
METFORMIN+ GLIPIZIDE	17	22	18	35	8	6	18	17	19	6	14	30	9	6	25	30
VIDAGLIPTIN+METFORMIN	11	10	7	16	6	6	9	11	5	2	6	12	5	3	19	20
METFORMIN+ GLIMPRIDE+ PIOGLITAZONE	**10**	**10**	**10**	**10**	**26**	**26**	**26**	**26**	**5**	**5**	**5**	**5**	**3**	**3**	**3**	**3**
METFORMIN	**1**	**0**	**1**	**4**	**3**	**3**	**3**	**3**	**3**	**0**	**0**	**8**	**1**	**0**	**1**	**0**
GLIMPRIDE+ METFORMIN	21	**16**	**25**	**30**	**11**	**12**	**22**	**24**	**15**	**4**	**7**	**19**	**2**	**1**	**14**	**14**

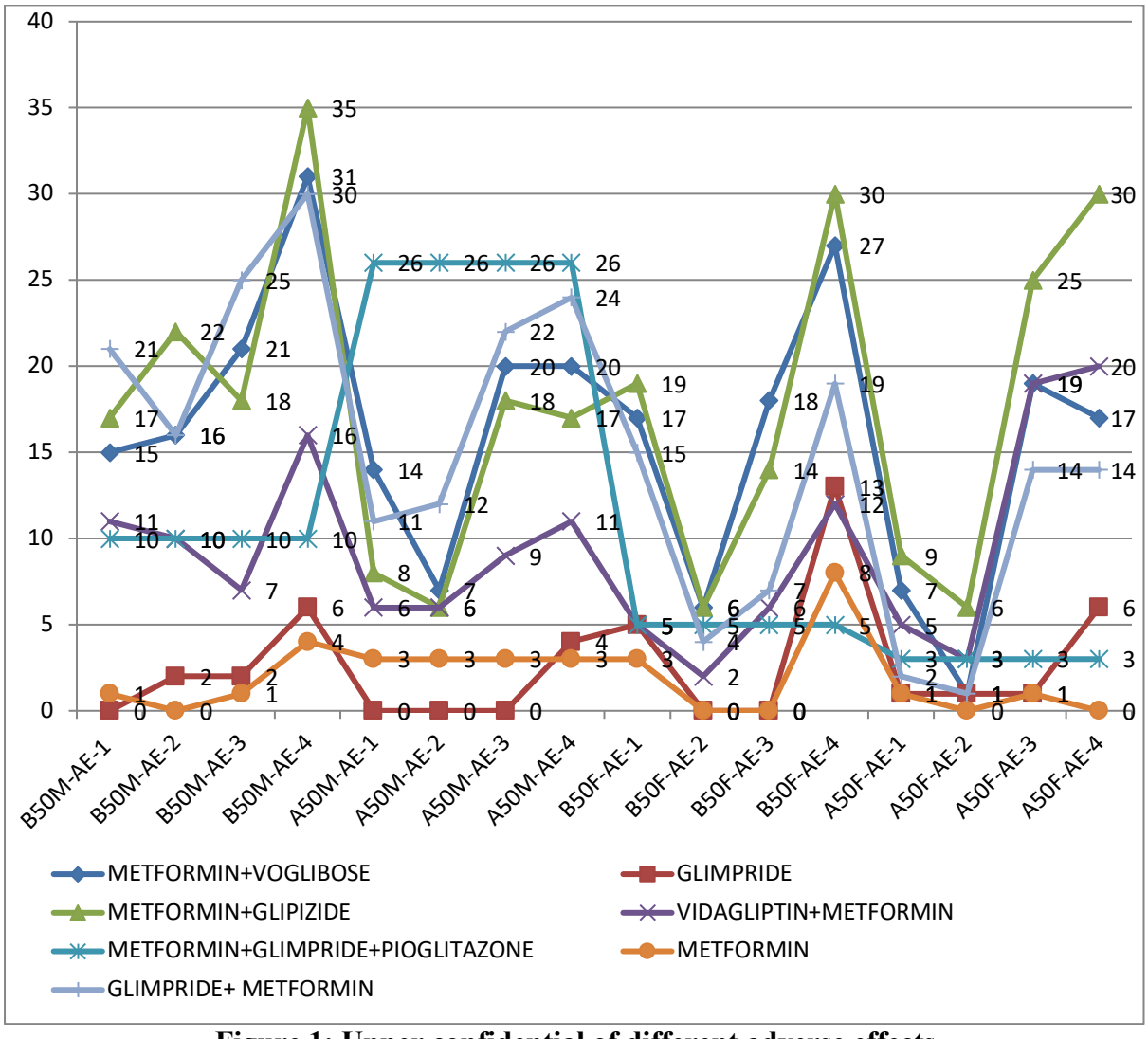

Figure 1: Upper confidential of different adverse effects

RESULT & CONCLUSION

As per the anthropometric assessment showing in the table and chart, the multiple and combination therapy of drugs having multiple and highest peak of the adverse effects. The highest percentage of adverse effects were found with drugs Metformin + Glimpride + Pioglitazone. The patients with Metformin + Glimpride + Pioglitazone were suffering from all the side effects as compared to other. The highest peak of patients found of the adverse effects were found with drug Metformin + Glipizide in male below 50 year old, where as in male above 50 year old found highest peak of patients with drug Metformin + Glimpride + Pioglitazone. The minimum adverse effects were recorded with drug Metformin with minimum number of patients. The second minimum adverse effects were recorded with drug Glimpride. As per the above results we can conclude that the drug Pioglitazone having maximum adverse effects as compared to other drugs.

REFERENCES

1. Ahmed AM. History of diabetes mellitus. Saudi Med J 2002. Apr; 23(4):373-378.
2. Diabetes mellitus history- from ancient to modern times. Available at http://science.jrank.org/pages/2044/Diabetes-Mellitus.html.
3. Patlak M. New weapons to combat an ancient disease: treating diabetes. FASEB J 2002. Dec;16(14):1853.
4. Maitra A, Abbas AK. Endocrine system. In: Kumar V, Fausto N, Abbas AK (eds). Robbins and Cotran Pathologic basis of disease (7th ed) 2005. Philadelphia, Saunders; 1156-1226.
5. Chen L, Magliano DJ, Zimmet PZ. The worldwide epidemiology of type 2 diabetes mellitus: present and future perspectives. Nature reviews endocrinology. Available at: www.nature.com/uidfinder.
6. Genetic basis of type 1 and type2 diabetes, obesity, and their complications. Advances and emerging opportunities in diabetes research: a Strategic Planning report of the DMICC. www2.niddk.nih.gov/NR.
7. Azevedo M, Alla S. Diabetes in sub-saharan Africa: kenya, mali, mozambique, Nigeria, South Africa and zambia. Int J Diabetes DevCtries 2008. Oct;28(4):101-108.
8. Global burden of diabetes. International Diabetes federation. Diabetic atlas fifth edition 2011, Brussels. Available at http://www.idf.org/diabetesatlas.
9. Chamnan P, Simmons RK, Forouhi NG, Luben R. KhawKy, Wareham NJ et al. Incidence of type 2 diabetes using proposed HbA1c diagnostic criteria in the EPIC-Norflok cohort: Implication for preventive strategies. Available at http://care.diabetesjournal.org
10. Zimmet P, Alberti KG, Shaw J. Global and societal implications of the diabetes epidemic. Nature 2001. Dec;414(6865):782-787.
11. Dhoot IK, Sharma Yogesh, A study on osteoporosis and impact of drugs & exercise for its clinical management, available at https://doi.org/10.32553/jbpr.v9i1.724.
12. Mbanya JC. The burden of type 2 diabetes mellitus in the African diaspora. Available at www.medscape.com/view article/560718_2.
13. Department of Health and Human Services. Centres for Disease Control and Prevention, 2011. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011.
14. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimate for the year 2000 and

projections for 2030. Diabetes Care 2004;127(5):1047-1053.
15. Yach D, Hawkes C, Gould CL, Hofman KJ. The global burden of chronic diseases: overcoming impediments to prevention and control. JAMA 2004. Jun;291(21):2616-2622
16. Ripsin CM, Kang H, Urban RJ. Management of blood glucose in type 2 diabetes mellitus. AmFam Physician 2009.
17. Hu FB, Manson JE, Stampfer MJ, Colditz G, Liu S, Solomon CG, et al. Diet, lifestyle, and the risk of type 2 diabetes mellitus in women. N Engl J Med 2001. Sep;345(11):790-797
18. Prevalence of overweight and obesity among adults with diagnosed Diabetes United States, 1988-1994 and 1999-2000"Centers for Disease Control and Prevention (CDC) (November 2004) MMWR. Morbidity and Mortality Weekly Report; 53(45): 1066-1068.
19. Barlow SE and the Expert committee Expert committee recommendations regarding the prevention, assessment and treatment of childhood and adolescent overweight and obesity: Summary report. Paediatrics 2007;120: S164-S192
20. Lang IA, Galloway TS, Scarlett A, Henley WE, Depledge M, Wallace RB, et al. Association of urinary bisphenol A concentration with medical disorders and laboratory abnormalities in adults. JAMA 2008. Sep;300(11):1303-1310
21. Rother KI. Diabetes treatment–bridging the divide. N Engl J Med 2007. Apr;356(15):1499-1501
22. McCarthy MI. Genomics, type 2 diabetes, and obesity. N Engl J Med 2010. Dec;363(24):2339-2350
23. Walley AJ, Blakemore AI, Froguel P. Genetics of obesity and the prediction of risk for health. Hum Mol Genet 2006. Oct;15(Spec No 2): R124-R130
24. Camastra S, Bonora E, Del Prato S, Rett K, Weck M, Ferrannini E, EGIR (European Group for the Study of Insulin Resistance) Effect of obesity and insulin resistance on resting and glucose-induced thermogenesis in man. Int J Obes Relat Metab Disord 1999, Dec; 23(12):1307-1313
25. Alberti KG, Zimmet P, Shaw J, IDF Epidemiology Task Force Consensus Group The metabolic syndrome–a new worldwide definition. Lancet 2005. Sep; 366(9491):1059-1062