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EVALUATION OF METFORMIN USE IN TYPE 2 DIABETES MELLITUS PATIENTS AT CLINIC X SEI KARANG

Evaluation Of Metformin Use in Type 2 Diabetes Mellitus Patients X Clinic Sei Karang

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Abstract

Diabetes mellitus is a disease or chronic metabolic disorder characterized by high blood sugar levels accompanied by impaired metabolism of carbohydrates, lipids and proteins as a result of insulin function insufficiency, which can be caused by impaired insulin production by the Langerhans beta cells of the pancreatic gland or caused by a lack of insulin. responsiveness of body cells to insulin. Type 2 DM is often found in around 90% of diabetes sufferers and usually occurs from the age of over 40 years in obese people. Metformin is the most frequently prescribed therapy for patients with type 2 diabetes mellitus. In addition, Metformin has a very good safety profile and is also pharmaco economically beneficial. The research was carried out by tracing the patient's past data from medical records obtained from the medical records unit at the X Sei Karang Clinic in the patient's medical records for 2023. Based on gender, it shows that of the 40 patients using oral anti-diabetic drugs in type II DM patients based on gender in 2023, the majority of genders are women (28 people) and the rest are men (12 people). Based on age, it shows that there are more people aged 34-60 years with a percentage of 67.5% compared to those aged 61-77 years with a percentage of 32.5%. Therapeutic use of oral antidiabetic drugs in outpatient type II DM patients at the X Sei Karang Clinic for the period October-December 2023 is Metformin with a 30% result with or without combination therapy. The accuracy of using oral anti-diabetic drugs in outpatients with type II DM at the X Clinic SeiKarang in 2023, found that the accuracy of using anti-diabetic therapy drugs at the appropriate dose was 83.33%.

Keywords: *Diabetes Mellitus Type 2; Medication Use; Metformin.*

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1. INTRODUCTION

Diabetes mellitus is a disease or chronic metabolic disorder characterized by high blood sugar levels accompanied by impaired metabolism of carbohydrates, lipids and proteins as a result of insulin function insufficiency, which can be caused by impaired insulin production by the Langerhans beta cells of the pancreatic gland or caused by a lack of insulin. responsiveness of body cells to insulin. Diabetes mellitus can be prevented or its occurrence can be delayed with optimal treatment, diabetes mellitus can be controlled and diabetic people can live long and healthy lives (WHO, 2015).

The aim of managing diabetes mellitus is to achieve the target of controlling blood glucose at normal levels, eliminating accompanying clinical symptoms, and preventing or reducing complications (Almasdy et al., 2015).

Type 2 diabetes mellitus is diabetes caused by 2 factors. The first factor is insulin resistance, which reduces the sensitivity of receptors in liver, muscle and fat tissue so that sufficient insulin is needed to meet the body's needs. The second factor is a progressive decrease in insulin (relative insulin deficiency) where the production of the insulin hormone in β cells is insufficient and results in a buildup of sugar in the blood (hyperglycemia). Type 2 DM is often found in around 90% of diabetes sufferers and usually occurs from the age of over 40 years in obese people (Zhang et al., 2021).

The issue of rational use of antidiabetic drugs is still important in achieving effective and efficient therapy. According to the World Health Organization (WHO), there is still irrational use of drugs, where more than 50% of drugs are used inappropriately in prescribing, preparing or selling them, while the other 50% are used appropriately by patients (Pushpa et al., 2020).

Based on research conducted by Wang Yi-Wei et al., 2017.Says that Metformin is the most frequently prescribed therapy for type 2 diabetes mellitus patients. Apart from that, Metformin has a very good safety profile and is also pharmacoeconomically profitable. Based on the data above regarding Metformin, research will be carried out on the pattern of use of Metformin in Type 2 Diabetes Mellitus at the X ClinicSeiKarang.

2. METHODS

This research is a type of non-experimental observational research with a retrospective research design. It is called a non-experimental observational design because the test subjects are observed without receiving prior treatment. An evaluation was carried out on the management of type II DM at Clinic X Sei Karang in the patient's medical record for 2023. The retrospective itself is a search for the patient's past data from medical records obtained from the medical records unit at Clinic X SeiKarang.

In research evaluating the use of oral antidiabetic drugs in outpatient type II diabetes mellitus patients at Clinic X SeiKarangIn2023, the sample size analyzed will be 40 samples.

3.RESULTS AND DISCUSSION

a.Gender

Research that has been conducted shows that of 40 patients using oral anti-diabetic drugs in type II DM patients based on gender in 2023, the majority of genders are women (28 people) and the rest are men (12 people). This happens because women have a higher risk of obesity so they can experience impaired insulin sensitivity because it is influenced by the hormone

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estrogen during the menstrual cycle, pregnancy and menopause, which causes the distribution of body fat to accumulate easily. In addition, if there is an increase in estrogen levels, the secretion of the hormone epinephrine will also increase. The hormone epinephrine has metabolic effects like the hormone glucagon, namely increasing glucose levels in the blood through gluconeogenesis and glycogenolysis which can progress to type II DM (Sihombing et al., 2022).

Table 1. Evaluation of the Use of Oral Anti-Diabetic Drugs in Type II DM Patients Based on Gender in 2023

Gender	n	Percentage (%)
Man	12	30,0
Woman	28	70,0
Total	40	100,0

b. Patient Age

Research that has been conducted shows that there are more people aged 34 - 60 years with a percentage of 67.5% compared to those aged 61-77 years with a percentage of 32.5%. Physiological changes usually decrease drastically at age >40 years. Diabetes mellitus usually occurs when you reach a vulnerable age, namely aged >45 years who are overweight, so that the body's insulin is not sensitive (Pangemanan, 2014).

c. Right Medicine

In this study, the evaluation of drug suitability was seen based on the determination of drug selection by considering the diagnosis written in the medical record and the appropriateness of drug selection. Then it is compared with the literature used (Moin et al., 2018; Li et al., 2021). The accuracy of the drug can be said to be the right drug if the expected pharmacological effects are in accordance with those recommended in JNC VIII (2014). so that if it is found that anti-diabetic drugs are being administered to patients who are not included in the*Drug Of Foot* In the guideline it will say that the drug is not appropriate (Sebayang et al., 2021).

Table 2. Evaluation of the Accuracy of Medication Use in Outpatient Type II DM Patients at Clinic X SeiKarang

Medicine name	n	Percentage (%)
Metformin	12	30
Loratadine	4	10
Betamethasone	3	7,5
ointment	6	15
Amlodipine 10 mg	4	10
Captropil 25 mg	4	10
Furosemide	4	10
Simvastatin 20 mg	4	7,5
Lansoprazole 20 mg	4	7,5
Total	40	100

Based on the table above, it can be seen that the use of anti-diabetic drugs in outpatients, whether using single drugs or combinations of drugs, was obtained and then adjusted to the clinical formality guidelines, the results of treatment suitability (100%) were correct for the drugs in 40 patients.

d. Right Dosage

Dosage is one of the things that is taken into consideration when assessing accuracy. The dose given must be appropriate to the patient's condition, and also the dose specified in the PERKENI (Indonesian Endocrinology Association) literature. Based on the evaluation results of assessing the accuracy of oral antidiabetic doses in outpatient type II diabetes mellitus respondents at Clinic X SeiKarang, it can be seen in the following table 3.

Table 3. Evaluation of Dosage Accuracy in Outpatient Type II DM Patients at Clinic X Sei Karang

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Drug	Dosage	appropriate/ inappropriate
Metformin	500mgx 2times/day 1000mgx 2times/day	**appropriate**
Loratadin	5mgx 1 times/day 10 mg x 1 times/day	**appropriate**
Amlodipin	5 mg x 1 time sehari 10 mg x 1 times/day	**appropriate**
Captropil	25 mg x 2 times/day 12,5 mg x 3 times/day	**appropriate**
Furosemid	50 mg x 2 times/day 40 mg x 1 times/day	**Appropriate**
Simvastatin	10mgx 1 times/day 20mgx 1 times/day	**inappropriate**
Lansoprazole	30mgx 1 times/day 30mgx 2times/day	**appropriate**

Based on data, the accuracy of anti-diabetic therapy according to the dose is 83.33%, namely when using the drug amlodipine the dose given is 5 mg and 10 mg once a day while the recommended dose is 2.5 mg once a day and when using the drug candesartan the dose is the same. given 8 mg once a day while the recommended dose is 4 mg once a day. The dose of captopril given is less than the dose given, 25 mg 2 times a day and 12.5 mg 3 times a day, while the recommended dose is 50 mg 2 times a day. So it can be concluded that the dose of antidiabetic medication given to the patient is correct.

4. CONCLUSION

Based on the results of research regarding the evaluation of the use of oral antidiabetic drugs in outpatient type II DM patients at XClinic SeiKarang in 2023, it can be concluded that:

a. Therapeutic use of oral antidiabetic drugs in outpatient type II DM patients at Clinic
b. The accuracy of using oral anti-diabetic drugs in outpatient type II DM patients at Clinic.

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