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Overview of the use of rheumatic drugs with risk factors for rheumatism at puskesmas x Tanah Datar regency

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ABSTRACT

Arthritis (rheumatism) affects the joints and associated structures. Rheumatism, sometimes known as gout or aches & pains, is a common condition. Untreated pain can prolong the condition and harm the patient. Humans have taken many painkilling measures. So Puskesmas X Tanah Datar Regency's rheumatic drug consumption with risk variables was studied. Purposive sampling was used. Bivariate study examined Puskesmas X Tanah Datar Regency patient recurrence. 100 participants satisfied the inclusion criteria, 50 of whom relapsed and 50 who did not. Variables that influence the description of the use of rheumatic drugs with rheumatic risk factors at Puskesmas X Tanah Datar Regency are age (P. 0.069), gender (P. 0.046), occupation (P. 0.029), and obesity status (P.0.007). Factors that can raise the risk of rheumatism in the working area of the PuskesmasXTanah Datar Districtare age, sex, occupation and obesity status (BMI). The drugs most widely used for the treatment of rheumatism in the working area of the Puskesmas X Tanah Datar district is Na. Diclofenac.

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INTRODUCTION

Rheumatism is a chronic, systemic inflammatory disease that can affect many tissues and organs, but primarily affects the flexible (synovial) joints. According to the World Health Organization (WHO) (2016) 335 million people in the world have arthritis. Meanwhile, the prevalence of rheumatism in 2004 in Indonesia reached 2 million people, with the ratio of female patients three times that of men. (Sibarani, 2020). Rheumatic disease can attack all levels of society with various levels of socio-economic, education, race, gender and age. The causes are very diverse, ranging from infection, trauma to the joints, autoimmune, metabolic disorders (Trisna et al., 2022). Symptoms of this disease include chronic pain, weakness, joint swelling, and fatigue (Riskesdas, 2013). Joint pain and joint stiffness are the most commonly complained of by sufferers. This situation causes a decrease in the productivity of sufferers, even to the point where they cannot carry out any activity (disability) and make them disabled (morbidity). (Department of Health of the Republic of Indonesia, 2006) As cases of gastritis increase and the side effects of this disease, it

is very important to evaluate the prescription of gastritis drugs to increase the safety of using gastritis drugs and achieve optimal treatment.

Rheumatism is more common in people who have excessive activity using their knees such as peddlers, and workers who squat a lot because there is excessive pressure on the knees, generally the more strenuous the activities carried out by someone in daily activities, the patient will experience arthritis more often especially in the joints and more often occurs in the morning. Inflammatory arthritis (rheumatism) is usually felt mainly in the joints of the fingers and wrists, knees and feet, and at an advanced stage the sufferer cannot carry out daily activities and his quality of life will decrease. (Fika, 2017; Bawarodi, 2017) Rheumatic disease tends to occur in alcoholic drinkers, post-pubertal men and post-menopausal women.

There are 3 types of arthritis that are most commonly suffered, namely osteoarthritis, gouty arthritis, and rheumatoid arthritis which causes swelling of lumps in the joints or inflammation of the joints simultaneously (Trisna et al, 2022). Rheumatic disease is not a stranger to society. This disease suffers a lot as we get older which is caused by calcification of the joints and limitations of movement. Rheumatic disease causes inflammation, stiffness, swelling and pain in the joints, muscles, tendons, ligaments and bones (Nainggolan O, 2009). Joint damage has started to occur in the first six months of being attacked, disability occurs after 2 years to 3 years if not treated. Around 40% of Indonesia's population aged over 40 years have complaints of joint and muscle pain, however, rheumatism is not just a monopoly disease for adults because this disease can also attack children with similar symptoms (Suparyanto and Rosad 2015). The cause of rheumatism is not known for certain; the dominant factors are age and body weight. In addition to age and excess body weight, trauma, lifestyle, and genetics factors have been mentioned as predisposing factors in the development of rheumatic diseases (Sue E. Meiner, 2011).

Rheumatism is more common in people who have excessive activity using their knees such as peddlers, and workers who squat a lot because there is excessive pressure on the knees, generally the more strenuous the activities carried out by someone in daily activities, the patient will experience arthritis more often especially in the joints and occurs more often in the morning (Fika, 2020). Inflammatory arthritis is usually felt especially in the joints of the fingers and wrists, knees and feet, and at an advanced stage, sufferers cannot carry out daily activities and their quality of life will decrease (Bawarodi, 2017).

Risk factors that cause rheumatism occur, namely the age factor, the older you get the higher the risk of developing rheumatism, the sex of this rheumatic disease tends to be suffered by women (three times more often than men) and can also occur in children due to heredity/genetic factors. Excessive body weight (obesity) will put a burden on the cartilage tissue in the knee joints and perform physical exercises such as rheumatic gymnastics as a therapy to relieve rheumatic symptoms in the form of stiffness and pain felt by rheumatic patients. Another supporting factor that causes arthritis is BMI (Body Mass Index). Research conducted by the hamlet of Daleman Gadingharjo Sanden, Bantul Regency, showed that there was a significant relationship between BMI and the incidence of rheumatism in adulthood (Chintyawati, 2018).

The risk factors that can be modified to prevent the occurrence of rheumatism include joint injuries, physical activity, metabolic disorders, work and growth disorders. According to the American College of Rheumatology, treatment for rheumatism can include pharmacological (drugs), non-pharmacological (such as rheumatic gymnastics), and surgery (Mutiwara et al., 2016). The results of this study are expected to be information and input for Puskesmas X Tanah Datar Regency in improving the quality of service for rheumatic patients who have high risk factors during rheumatic treatment.

RESEARCH METHOD

This study is an analytical (observational) study, with a retro-sectional approach. The use of a retro-sectional approach in this study was because there was no intervention whatsoever and data collection was carried out at once in the past. The location of the research was carried out at the X District Health Center, Tanah Datar Regency with the consideration that there had never been a study on the description of drug use with risk factors for rheumatism aged 35-64 years.

Working Method

1. Population
   The population in this study were all residents aged ≥ 35 years in District X, Tanah Datar District.
2. Sample
   The sample in this study were some rheumatic patients aged 35-64 years at the X Public Health Center, Tanah Datar District: a) Inclusion Criteria: age 35 – 64 years, medical record data, all prescriptions containing rheumatic drugs. b) Exclusion Criteria: incomplete medical records

Method of collecting data

1. Primary data
   Primary data obtained from: a) Medical record data which contains demographic data (respondent age, gender, obesity status/BMI calculation, and occupation), b) Pharmacy technical personnel about types of rheumatic drugs.
2. Secondary Data
   Secondary data obtained from: Puskesmas District X of Tanah Datar Regency regarding reports of rheumatic diseases.

Research Instruments

The research instrument used in data collection is: a) Prescriptions containing rheumatic drugs, b) Medical records regarding demographic data (respondent age, gender, obesity status/BMI calculation and occupation).

Operational Definition of Research Variables

1. Rheumatism is a disease that attacks the joints and surrounding structures. Arthritis denotes a joint that is injured, stretched, infected, and damaged or worn out. Rheumatism is a chronic systemic inflammatory disease, systemic inflammation which can affect many tissues and organs, but especially attacks the flexible (Sibarani, 2020). Inflammation is a normal protective response to tissue injury caused by physical trauma, damaging chemical or microbiological agents.
2. Rheumatoid sufferers aged 35-64 years who are registered as patients at the X District Health Center, Tanah Datar Regency.
3. Age is the life span of the respondent, calculated from birth to the time the research was conducted, expressed in years according to the respondent's measurement, categorized into ages 35-44, 45-54 and 55-64.
4. Gender is the condition of the respondent based on the sex organ which can be seen from the respondent's identity, categorized into male and female.
5. Obesity Status is a person's Body Mass Index (BMI) is > 25 kg/m^2). Categorized on: (WHO, 2004): a) Not obese, if BMI ≤25 kg/m^2, b) Obesity, BMI >25 kg/m^2, c) Occupation is a person's employment status to meet daily needs, categorized into employees (private/PNS) and farmers.

Measurement Aspect

Table 1. Measurement aspect

No	Variable	Measuring Method	Measurement results	Measure Scale
1	Age	Calculated from the birth year of the respondent, the research was carried out	35 - 44 45 - 54 55 – 64	Ordinal
2	Gender	Judging from the identity of the respondent	Man Woman	Ordinal
3	Obesity Status	BMI is calculated by measuring height with a meter and weight with a scale $IMT = \frac{BB\ (kg)}{TB\ (m)}$	Not Obese Obesity	Ordinal
4	Work	One's job status to meet daily needs	Employee Farmer	Ordinal

Based on table 1, it can be explained that there are 4 measurement variables used in the study, namely the variables of age, gender, obesity status and occupation. Each variable has a different measurement method, so that it can produce different measurement results on each variable, but to determine the measurement scale using an ordinal scale.

Data Processing Techniques

In this study, the data that has been collected will be processed through several stages, namely: a) Editing is an activity to check and correct the contents of a form or questionnaire, b) Coding is changing data in the form of sentences or letters into numeric data or numbers, c) Processing is entering into a computer program, d) Cleaning is checking again to see the possibility of code errors, incompleteness, and then making corrections or correctionse, e) Tabulation is making data tables, according to the research objectives or what the researcher wants.

Research data

Data analysis was performed using univariate analysis, bivariate analysis, and multivariate analysis using the SPSS 23 program.

Univarat analysis

Univariate analysis is an analysis performed for one variable or each variable. The aim is to see how big the proportion of the variables studied and presented in tabular form. Univariate analysis was carried out to describe or explain each variable studied in the form of a frequency distribution of each research variable (Suparyanto and Rosad 2015).

Bivarat analysis

Bivariate analysis was performed to determine the relationship between the independent and dependent variables, using the Chi-Square test, with a degree of confidence/CI 90% and α=0.05.

The basis for taking the research hypothesis is based on the significant level (p value), namely: a) Ho is rejected if the value of P. Value < 0.05 (α) means that there is a relationship between the variables studied, b) Ha is accepted if the P.Value is > 0.05 (α) means that there is no relationship between the variables studied, c) 95% confidence interval with μ=0.05.

Bivariate analysis is an analysis involving an independent variable and a dependent variable. Because the data is in the form of categorization, to determine the relationship between the independent and dependent variables, a statistical analysis of the Chi-square test is used using an alpha value of 0.05. If there are cells that have an expectation less than 5, then Continuity Correction is used. (Fika et al., 2022).

To obtain a meaningful relationship with the research variables, a computer was used to analyze the Chi-square test. Rules that apply to the Chi-square Test: a) If the 2x2 table is found to have an expected value of less than 5, then the fisher's exact test is used, b) If the table is 2x2 and there is no expected value (expectation) greater than 5, then the test that is used otherwise is continuity correction, c) If the table is more than 2x2, for example 2x3, 3x3 and so on, then the Pearson Chi-square test is used.(Setiawan et al., 2022)(Yang et al., 2021).

Multivariate Analysis

This analysis is used to determine the most dominant variable affecting the risk of rheumatism with multiple logistic regression tests (Multiple Logistic Regression). This was done by simultaneously entering the independent variables (respondent's age, gender, obesity status/BMI calculation, occupation and education) according to certain statistical significance criteria ($p<0.25$). The independent variables will be withdrawn gradually (Backward Selection) until there are no more independent variables that have a p value > 0.05(Mulyati et al., 2022.)(Nofrizal, 2019)(Payadnya & Jayantika, 2018).

Percentage Formula

The percentage formula used:

$$p = \frac{f}{n} \text{ x } 100\% \qquad (1)$$

Information :
p = Percentage
f = Frequency
n = Value (amount)

RESULTS AND DISCUSSIONS

Results

Univarat analysis

Univarat Characteristics

Based on the number of respondents as many as 100 people, the characteristics of the respondents are shown in table 2:

Table 2. Respondent demographic data at health center X tanah datar district

No	Characteristics	classification	Number of Respondents	Total Respondents	Percentage (%)
	Age	35 - 44	10	100	10%
		45 - 54	27		27%
		55 - 64	63		63%
	Gender	Woman	80	100	80%
		Man	20		20%
	Work	Self-employed	70	100	70%
		civil servant	30		30%
	Obesity Status	Not Obese	71	100	71%
		Obesity	29		29%
	Drug	NA. DIC	70	100	70%
		PROFESSIONAL MOM	30		30%

Based on table 2, it can be explained that the demographic data of respondents at puskesmas x Tanah Datar Regency, the characteristics of research respondents consisting of age,

gender, occupation, obesity status and medication. Where there are 100 respondents who are divided based on the classification of each characteristic.

Bivarat analysis

The results of the study were analyzed by bivariate analysis shown in table 3.

Table 3. Results of bivariate analysis analysis of patient recurrence rates at Puskesmas X, Tanah Data District

No	Variable	classification	recurrence		P. value	Odds ratio (OR)
			relapsed	No relapse		
	Age	35 - 44	3 (6%)	7 (14%)		
		45 - 54	10 (20%)	17 (34%)	0.069	```
		55 - 64	37 (74%)	26 (52%)		
2.	Gender	Woman	44 (88%)	36 (72%)	0.046	2,852
		Man	6 (12%)	14 (28%)		
3.	Work	Self-employed	40 (80%)	30 (60%)	0.029	2,667
		civil servant	10 (20%)	20 (40%)		
4.	OBESITY STATUS (IMT)	Not Obese	27 (54%)	44 (88%)	0.007	0.236
		Obesity	23 (46%)	6 (12%)		
5.	Drug	NA. DIC	35 (70%)	35 (70%)		
		PROFESSIONAL MOM	15 (30%)	15 (30%)		

Based on table 3, it can be explained that the variables that influence the description of the use of rheumatic drugs with rheumatic risk factors at the X health center in Tanah Datar Regency are age (P. 0.069) so, (P. < 0.05) with gender (P. 0.046) so (P. < 0.05) with OR 2.852, occupation (P. 0.029) so (P. < 0.05) with OR 2.667, obesity status (P.0.007) so (P. < 0.05) with OR 0.236 because it gets a significant value.) so (P. < 0.05) with OR 0.236 due to getting significant value.

Discussion

Respondents in this study totaled 100 people who met the inclusion criteria with a category of 50 respondents who relapsed and 50 respondents who did not relapse. Variables that influence the description of the use of rheumatic drugs with rheumatic risk factors in puskesmasXTanah Datar Districtis at age (P. 0.069) so, (P. <0.05) with gender (P. 0.046) so (P. <0.05) with OR 2.852, occupation (P. 0.029) so (P. < 0.05) with OR 2.667, obesity status (P.0.007) so (P. <0.05) with OR 0.236 because it gets a significant value.

Age

Elderly is a natural and continuous process that undergoes anatomical, physiological and biochemical changes in tissues or organs which ultimately affect the state of function and ability of the body as a whole. Research results found by researchersaged 55-64 years old people with rheumatism in the working area of the Health CenterXTanah Datar Districtit is known that included in the category (63%).

The elderly population in general has experienced a decline due to natural processes, namely the aging process with a decrease in physical, psychological and social conditions that interact with each other (Nugraha, 2017). The problems that develop are related to changes in physical condition that accompany the elderly. Changes in the physical condition of the elderly include a decrease in musculoskeletal abilities in a worse direction(Umam, et al., 2023).

Gender

Men and women have different strengths or abilities in dealing with disease, especially rheumatic diseases. Women suffer from rheumatism 2-3 times more than men. The results of the distribution of data on the sex of elderly people with rheumatism in the working area of the PuskesmasXTanah Datar DistrictIt is known that most of them are female (80%).

Women are more likely to get osteoarthritis of the knees and joints, and men are more likely to get osteoarthritis of the thighs, wrists and neck. The frequency of osteoarthritis is more in women than in men, this indicates a hormonal role in the pathogenesis of osteoarthritis. Why women are more affected by rheumatism, it is said that it is not known for certain, but it is suspected that it is due to a connection with genetic factors(Setiawan et al., 2018.).

Work

The results of the distribution of data about the work of people with rheumatism in the work area of the Health CenterXTanah Datar DistrictIt is known that most of them have jobs as private employees (70%). Private jobs have twice the risk of rheumatism compared to civil servant workers. Rheumatism is often related to one's profession(Atrio et al., 2009). In addition, an employee who never carries or works hard can also feel sore in the load area. This can also happen if the employee always works with the wrong posture. Sitting postures and incorrect writing or typing postures that are repeated over many years can strain the scapula muscles(Fika, 2018).

CONCLUSION

Factors that can raise the risk of rheumatism in the working area of the PuskesmasXTanah Datar Districtare age, sex, occupation and obesity status (BMI). The drugs most widely used for the treatment of rheumatism in the working area of the Puskesmas X Tanah Datar district is Na. Diclofenac. The results of this study are expected to be information and input for Puskesmas X Tanah Datar Regency in improving the quality of service for rheumatic patients who have high risk factors during rheumatic treatment. This study used a retro-sectional design, where patients of Puskesmas X Tanah Datar Regency were quite heterogeneous in terms of the status of patient medical record data.

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