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Gastritis drug prescribing profile at Pharmacy *X* Bukittinggi

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ABSTRACT

Gastritis is an inflammatory process or health disorder caused by irritating and infectious factors in the gastric mucosa and submucosa. This study is to evaluate gastritis drug classes, single and combination drugs, age and gender prescribed at Pharmacy X Bukittinggi. The research design used in this research is descriptive research through a restrospective research process. Sampling by purposive sampling. Based on research on the Gastritis Drug Prescribing Profile at Pharmacy X Bukittinggi with the most gastritis sufferers were female patients 215 prescriptions (64.7%). The age most affected by gastritis is in the elderly 160 prescriptions (48.2%), the group of drugs often used is proton pump inhibitors as many as 169 prescriptions (51%). The most commonly used combination drug group was proton pump inhibitors with sucralfate syrup as many as 69 prescriptions (20.8%).

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INTRODUCTION

Advances in science and technology in developing countries including Indonesia have caused many changes in both lifestyle and diet. Fast and instant lifestyle changes can cause various health problems. (Nofita et al., 2023)An unhealthy lifestyle can cause various kinds of health problems, one of which is gastritis(Tandi, 2017). Gastritis is an inflammatory process or health disorder caused by irritating and infectious factors in the mucosa and submucosa of the stomach.Gastritis attacks all levels of society but from several surveys it shows that gastritis most often attacks pthere is an elderly age because age is very influential in gastritis and also providing nutrition that is not in accordance with the physical condition and needs of the elderly(Waluyo Joko, 2019). Gastritis is more common in women than men. It is possible that women are more easily stressed than men, which is caused by hormonal mechanisms(Rahayu et al., 2016).From the data from the World Health Organization (WHO) in 2019, the incidence of gastritis in Indonesia was 40.8%(Dinkes Provinsi DKI Jakarta, 2017). West Sumatra health profile data for 2017 Gastritis is ranked second out of the 10 most common diseases in West Sumatra Province, namely 285,282 cases of Gastritis(Fika, R. Setiawan, 2018)(Marjoni et al., 2021). Meanwhile, at Apotek X Bukittinggi in 2020, the use of gastritis medication is expected to increase due to an increase in ordering gastritis medication(Nofita et al., 2023)(Trisna et al., 2022).

The novelty of this study is in terms of gastritis drug prescribing profile data based on patient demographic data, with increasing cases of gastritis and side effects of this disease. Evaluation of gastritis drug prescribing is very important to improve the safety of gastritis medication use and achieve optimal treatment. One of the efforts to achieve pharmaceutical services in pharmacies that are according to standards is to know the profile of gastritis drug prescribing in pharmacies.

RESEARCH METHOD

Research design

The research design used in this research is descriptive research with the aim of describing or describing facts about the population in a systematic and accurate manner in presenting data obtained through a retrospective research process.

Research Population

The population in this study were all prescriptions served from July to December 2021 at Pharmacy X Bukittinggi.

Research Sample

The sample in this study were some of the prescriptions containing gastritis medication at the X Bukittinggi Pharmacy that met the inclusion criteria. The sampling technique used in this research is purposive sampling where the researcher determines sampling by setting specific criteria that are in accordance with the research objectives and can provide a more representative value.

a. Inclusion criteria
   Inclusion criteria are criteria where research subjects represent research samples that meet the requirements as a sample. The inclusion criteria for this study sample were: a) Recipes containing gastritis drugs and drug classes available at Pharmacy X Bukittinggi from July to December 2021. b) Recipes Pharmacy X Bukittinggi for the period July to December 2021 which are legible, complete and undamaged. c) Prescriptions containing gastritis medication at Pharmacy X Bukittinggi from July to December 2021 for male and female. d) Age classification is divided into 4 groups: children (5-11 years), youth (12-25 years), adults (26-45 years) and elderly (46-65 years). e) Prescriptions containing gastritis drugs in X Bukittinggi from July to December 2021 with classifications above the age of 5 years.
b. Exclusion criteria
   Exclusion criteria are criteria where the conditions that cause subjects not to meet the inclusion criteria and cannot be included in the criteria for this study sample are: a) Recipes that do not contain gastritis medication and are not available at Apotek X Bukittinggi from July to December 2021. b) Recipes at Apotek X Bukittinggi from July to December 2021 that cannot be read, incomplete or damaged. c) Prescriptions containing gastritis drugs at Pharmacy X Bukittinggi from July to December 2021 are classified as under 5 years old. d) Over-the-counter gastritis medication.

Variable Operational Definitions

1. Gastritis is an inflammatory process caused by irritating and infectious factors in the mucosa and submucosa of the stomach.
2. A prescription is a written request from a doctor, dentist or veterinarian to a pharmacist, both in paper and electronic form, to provide and deliver pharmaceutical preparations and or medical devices for patients.(Fika, R. Setiawan, 2018)(Setiawan et al., 2022).
3. Gender is the gender of the research object, categorized into men and women
4. Drug class is a group of drugs given, for example antacid class, proton pump inhibitor group, prostaglandin analog group, H2 receptor antagonist group and sucralfate group.

5. Single or combination drugs are the use of gastritis drugs with one type of drug or with the use of several types of gastritis drugs.
6. Age is a generation that is no exception to the occurrence of gastritis, which most often affects the elderly, namely the age range of 46 to 65 years. Age classification is divided into 4 groups: children (5-11 years), youth (12-25 years), adults (26-45 years) and elderly (46-65 years)(Fika, R. Setiawan, 2018; Ibrahim et al., 2023).

Sample Calculation

sample calculation in this study uses the slovin formula:

$$n=\frac{N}{1+N(e)^2} \quad (1)$$

Information:
n = sample
N= population (all prescriptions from July to December 2021)
e = precision value 0.05
research sample:

$$n = \frac{(311 + 299 + 346 + 370 + 329 + 310)}{1 + 1965\,(0{,}05)^2}$$

$$n = \frac{1965}{1 + (1965 \times 0{,}0025)}$$

$$n = \frac{1965}{1 + 4913}$$

$$n = \frac{1965}{5913}$$

$$n = 332$$

So the number of samples in this study were 332 prescriptions for gastritis

Research Instruments

The research instrument used in data collection was a table containing data on gender, age, drug class, single and combination drugs in prescribing gastritis drugs at Pharmacy X Bukittinggi for the period January to June 2021.

Research data

Data collection in this study were prescriptions and daily prescription recording books which contained data on the patient's name, gender, age, class of drugs used and use of single and combined drugs.

Data Collection and Collection Techniques

Withdrawal is done by: a) Collecting patient prescriptions at Pharmacy X Bukittinggi from January to June 2021, b) Separation of prescriptions containing gastritis drugs, c) Take a number of prescription gastritis drugs that will be sampled (calculated based on the slovin formula), d) The research sample was recorded on a data collection sheet which included patient evaluation of data on gender, age, drug class used, single drug or combination which was transferred to a prepared data collection sheet, e) The data is recapitulated and the data analysis is processed.

In this study the data collected will be processed through the stages, namely: a) *coding*is to change data in the form of sentences or letters into numeric or numeric data, b) *processing*Entering data into a computer program, c) *Cleaning*is to check again to see the possibility of code errors, incompleteness and then make corrections or corrections, d) Tabulation is making data tables, according to research objectives.

Research Parameters

The parameters in this study were data on gender, age, drug class, single drug and gastritis prescription combination at Pharmacy X Bukittinggi from January to June 2021.

Research Ethics

Before the researchers submitted a permit application to pharmacist X Bukittinggi to conduct research. The researcher has submitted an application letter to conduct research at the X Pharmacy Bukittinggi. After the application is approved, the researcher can collect data using recipes and daily recipe recording books.

To maintain patient confidentiality, the researcher did not include the patient's name on the data collection sheet, simply by giving a code to each of the data collection sheets.

Data analysis

The analysis used in this study is a qualitative descriptive analysis. At this stage, the data that has been processed will be calculated in the form of a percentage using the percentage formula:(Rahmatina, 2011).

$$DP=\frac{n}{N} \times 100\%$$

Information:
DP = Descriptive Percentage
n =Obtained Empirical Score
N = Ideal Score For Each Item

RESULTS AND DISCUSSIONS

Results

This research has been conducted in X Bukittinggi. The results of the study on samples that met the inclusion criteria obtained data on the use of gastritis drugs based on gender, age, drug class and single drug and combinations as follows;

Table 1. Number and percentage of gastritis drug use by gender

No	Gender	Amount	Percentage
1.	Man	117	35.3 %
2.	Woman	215	64.7 %
	∑	332	100 %

Based on table 1, it can be explained that the gender of gastritis patients at X Bukittinggi pharmacy as many as 332 prescriptions were obtained with the results of male gender 117 prescriptions (35.3%) and female gender 215 prescriptions (64.7%) using gastritis drugs.

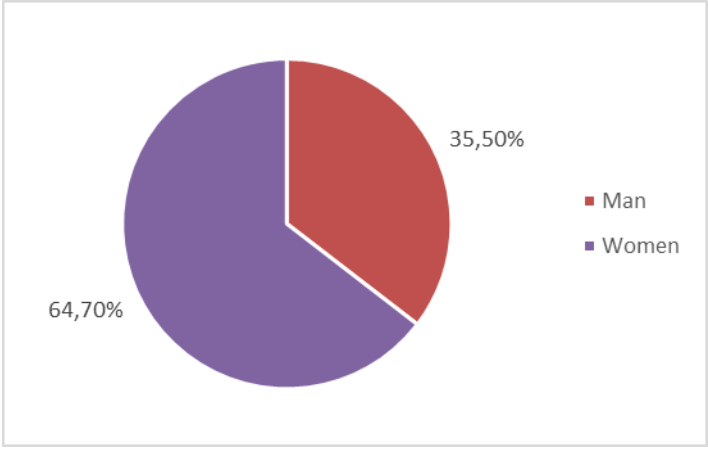

Figure 1. Diagrams Percentage of gastritis drug use by sex

Based on Figure 1, it can be explained that women have a high percentage of 64.7% in the use of gastritis drugs. This is possible because women usually feel afraid of fat so they often diet for a long time and cause irregular eating, besides that female patients are more easily stressed, because the brain nervous system is related to the stomach and hormonal changes that stimulate cells in the stomach to produce acid excessively.

Table 2. Number and percentage of gastritis drug use by age

No	Category	Age	Amount	Percentage
1.	Children	5-11	4	1.2 %
2.	Teenager	12-25	29	8.7%
3.	Mature	26-45	83	25%
4.	Early seniors	46-65	160	48.2%
5.	Final senior	65 and above	56	16.9%
		∑	332	100 %

Based on table 2, it can be explained that the use of gastritis drugs at X Bukittinggi pharmacy based on the age classification of 332 prescriptions was obtained with the results in the category of children as many as 4 prescriptions (1.2%), adolescents 29 prescriptions (8.7%), adults 83 prescriptions (25%), early elderly 160 prescriptions (48.2%) and in the late elderly category as many as 56 prescriptions (16.9%).

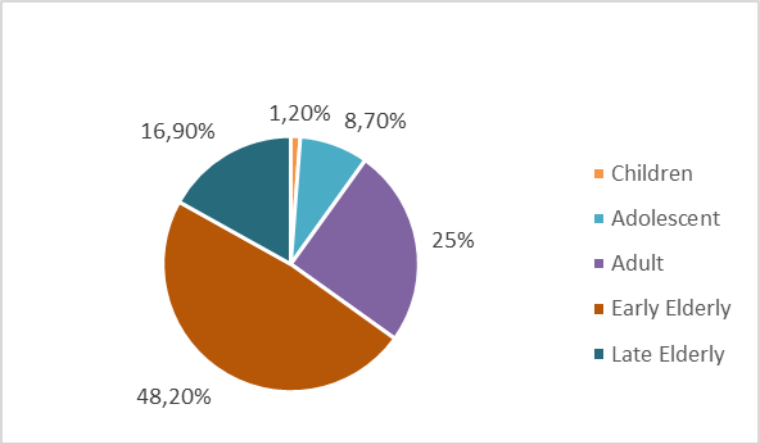

Figure 2. Percentage diagram of gastritis drug use by age

Based on Figure 3, it can be explained that elderly patients have a high percentage of gastritis where age is very influential in gastritis and a busy level and even a lifestyle that pays less attention to health, providing nutrition that is not in accordance with the physical condition and needs of the elderly.

Table 3. Number and percentage of gastritis drug use based on drug class

No	Drug class	Amount	Percentage
1.	Antacids	8	2.41 %
2.	H2 Receptor Antagonists (AH2)	4	1.2 %
3.	Proton Pump Inhibitors (PPI)	169	51%
4.	Prostaglandin Analogs	0	0%
5.	Sucralfate	21	6.3%
6.	PPI + Sucralfate	69	20.8%
7.	PPI + Antacids	37	11%
8.	PPI +(AH2)	12	3.6%
9.	Antacids + Sucralfate	6	1.8%

10.	Antacids + Sucralfate + PPI	6	1,8
	∑	332	100 %

Based on table 3, it can be explained that the use of gastritis drugs in pharmacy X Bukittinggi based on the drug class of 332 prescriptions obtained results with antacid groups as many as 8 prescriptions (2.41%), H2 receptor antagonist (AH2) 4 prescriptions (1.2%), proton pump inhibitor (PPI) 169 prescriptions (51%), while the prostaglandin analog group did not have a prescription at X Bukittinggi pharmacy and sucralfate group as many as 21 prescriptions (6.3%), a combination of groups (PPIs) with sucralfate 69 prescriptions (20.8%), a combination of groups (3.6%), a combination of antacid groups with sucralfate 6 prescriptions (1.8%) and a combination (PPI) with antacids and sucralfate as many as 6 prescriptions (1.8%).

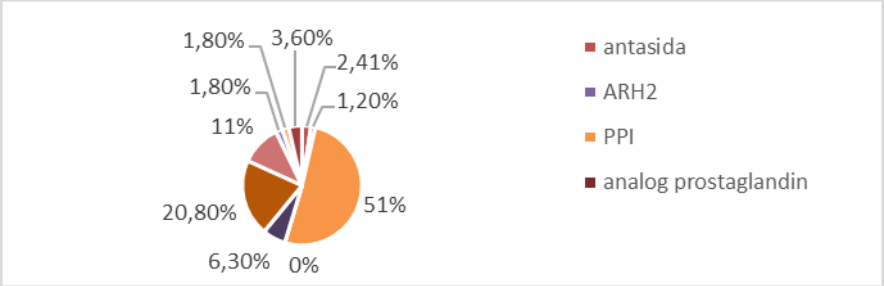

Figure 3. Percentage diagram for the use of gastritis drugs by group

Based on Figure 3, it is known that from the prostaglandin analog group, no prescriptions were found with this group so that it has a percentage of 0%, with the information that the neurologist at pharmacy X did not recognize the drug and from the internal medicine specialist who practiced at X stated that the high risk of the drug and in the treatment of gastritis cases has a variety of drug classes that are safer and have a faster effect than prostaglandin analog group drugs.

Table 4. Number and percentage of gastritis drug use by gender

No	Single, combination	Amount	Percentage
1.	Single	197	59.3 %
2.	Combination	135	40.7 %
	∑	332	100 %

Based on table 4, it can be explained that the use of gastritis drugs at X Bukittinggi Pharmacy based on single and combined drugs totaling 332 prescriptions can be calculated as 197 single drugs (59.3%) and 135 combined drugs (40.7%).

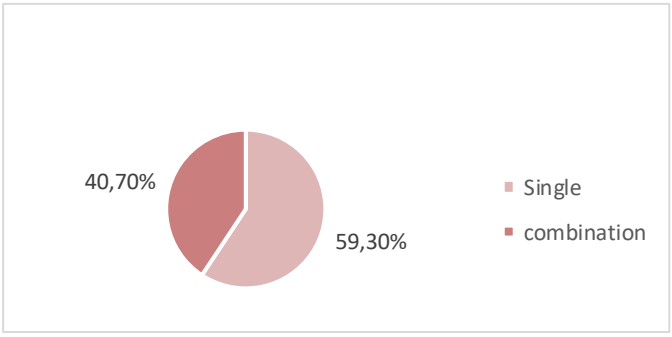

Figure 4. Diagram of the use of gastritis drugs based on single and combinations

Based on Figure 4, it can be explained that the use of combination drugs is more often used in the treatment of gastritis, the use of combination drugs is more effective in preventing the increase of gastritis because each has a different mechanism of action in overcoming stomach acid, the most commonly used drug class combination is the proton pump inhibitor (PPI) group, namely omeprazole capsules or lansoprazole capsules with sucralfate syrup.

Discussion

In the research that has been done, it can be seen from table 1 that the sex of gastritis sufferers at pharmacy X Bukittinggi was 332 prescriptions obtained with the results of male sex 117 prescriptions (35.3%) and female sex 215 prescriptions (64.7%) who used gastritis medication, this data shows that women have a high percentage of gastritis drug use.

This is possible because women usually feel afraid of getting fat so that they often diet prolonged and cause irregular eating, besides that female patients are more easily stressed, because the nervous system of the brain is related to the stomach and hormonal changes that stimulate cells in the stomach to produce excess acid which over time it will cause injury to the stomach wall(Rahayu et al., 2016)(Farmasi et al., 2022).

Under stress conditions, it is possible for someone to take actions aimed at minimizing uncomfortable feelings, these actions are sometimes unconsciously risky to health, these actions include drinking alcoholic beverages, taking sedatives or painkillers and besides that under stress a physiological process occurs in the body where the receptor receives stimulation from the stressor for the first time, the stimulation is forwarded to the hypothalamus which causes the hypothalamus to secrete the hormone corticotrophin-releasing factor (CRF) which stimulates the anterior glands then secretes adenocorticotropic hormone (ACTH) which produces the hormone adrenaline which can reduce the resistance of the stomach to stomach acid, causing digestive problems(Rahayu et al., 2016)(Mubarrok et al., 2022).

Judging from table 2 that the use of gastritis drugs at pharmacy X Bukittinggi based on age classification as many as 332 prescriptions obtained with the results in the children's category as many as 4 recipes (1.2%), adolescents 29 prescriptions (8.7%), adults 83 prescriptions (25%), early elderly 160 prescriptions (48.2%) and in the late elderly category 56 prescriptions (16.9%).

These data show that elderly patients have a high percentage of gastritis where age is very influential in gastritis and the level of activity and even a lifestyle that pays little attention to health, providing nutrition that is not in accordance with the physical condition and needs of the elderly. There are some complaints by the elderly related to the aging process, especially in the digestive system, for example difficulty consuming meat and eating hard foods and disturbances in the function of chewing and impact on nutritional intake which causes a decrease in intestinal mobility, resulting in disturbances in the digestive tract such as bloating,(Diana & Sandia, 2016)(Fika et al., 2022).

Judging from table 3 that the use of gastritis drugs in pharmacy X Bukittinggi based on drug class as many as 332 recipes obtained results with antacid class as many as 8 recipes (2.41%), H2 receptor antagonist class (AH2) 4 recipes (1.2%), class of proton pump inhibitors (PPI) 169 prescriptions (51%), while there were no prescriptions for the prostaglandin analog class at the X Bukittinggi pharmacy and the sucralfate group as many as 21 prescriptions (6.3%), the combination group (PPI) with sucralfate 69 prescriptions (20, 8%), combination group (3.6%), combination of antacid group with sucralfate 6 prescriptions (1.8%) and combination (PPI) with antacids and sucralfate 6 prescriptions (1.8%)(Mulyati et al., 2018; Nofrizal, 2019; Payadnya & Jayantika, 2018).

From these data it shows that the most widely used gastritis drug classification is the proton pump inhibitor (PPI) group, namely 169 recipes, which is because PPI is a stronger inhibitor of gastric acid secretion than (ARH2), with a mechanism of inhibiting gastric acid secretion by inhibiting gastric acid secretion. Hydrogen potassium adenosine triphosphate system of gastric parietal cells thereby causing pain reduction in ulcer patients, reducing pepsin aggressive factor

activity with PH>4. PPIs have fewer side effects and fewer interactions with other drugs. Long-term use of PPIs is also considered safe(Yasril & Safitri, 2021).

The gastritis drug class sucralfate is also widely used, namely 21 recipes, in which the mechanism of action of sucralfate protects the mucosa from attack by acid peptin. This compound is a complex of aluminum hydroxide and sucrose sulfate with minimal antacid properties. The use of sucralfate is intended to prevent recurrence if used in long-term therapy (Sukandar, 2013; Yulinah, 2022).

And from the class of prostaglandin analogues, there was no prescription for that class, so it had a percentage of 0%, with a statement from the neurologist at pharmacy X who was not familiar with the drug and from an internal medicine specialist who practiced at X stating that there was a high risk of the drug and the treatment Gastritis cases have various classes of drugs that are safer and have a faster effect than prostaglandin analogue drugs(Fika, 2020; Umam et al., 2023).

Judging from table 4, the use of gastritis drugs at Pharmacy X Bukittinggi is based on a single drug and a combination of 332 prescriptions which can be counted as a single drug of 197 recipes (59.3%) and a combination drug of 135 recipes (40.7%).

From this data it shows that the use of combination drugs is more often used in the treatment of gastritis, the use of combination drugs is more effective in preventing an increase in gastritis because each has a different mechanism of action in dealing with stomach acid, the most commonly used combination of drug classes is the proton pump inhibitor group. (PPI), namely omeprazole capsules or lansoprazole capsules with sucralfate syrup(*DAFTAR PUSTAKA Abu MN, Mohd Salleh AM, MohdRadzman NH. Insulin Sensitivity Enhancement of the Mixture Of*, 2015).

The use of a single drug in treating gastritis most commonly used is sucralfate syrup or sucralfate tablets, omeprazole capsules, lansoprazole capsules, ranitidine and also antacids. Antacids work by neutralizing stomach acid and inactivating pepsin. Antacids are generally a combination of aluminum hydroxide and magnesium hydroxide, a combination of these two is to avoid the side effects of each of these active substances where the laxative effect of magnesium hydroxide will reduce the constipation effect of aluminum hydroxide(Sukandar, 2013). Ranitidine works to treat gastric and duodenal ulcers by reducing gastric acid secretion as a result of inhibition of histamine (H2) receptors.(Agriani, 2020).

The use of a single drug is also often used as a companion in the use of NSAIDs (non-steroidal anti-inflammatory drugs) such as the use of aspirin, ibupeofen, mefenamic acid, meloxicam and diclofenac. With the aim of reducing inflammation in the stomach and protecting the gastric mucosa from attacks by stomach acid caused by the use of these NSAIDs(*Abu MN, Mohd Salleh AM, MohdRadzman NH. Insulin Sensitivity Enhancement of the Mixture Of*, 2015).

CONCLUSION

Based on the results of an evaluation study on the use of gastritis drugs at pharmacy X Bukittinggi for the period July to December 2021, it can be concluded from a sample of 332 prescriptions that: a) Most gastritis sufferers were female patients with 215 prescriptions (64.7%). b) The most common age for gastritis was the elderly, 160 prescriptions (48.2%). c) The class of drugs that are often used are proton pump inhibitors with 169 prescriptions (51%). d) The most frequently used combination drugs were proton pump inhibitors and sucralfate syrup with 69 prescriptions (20.8%). The advice that the author wants to convey after seeing the results of the study is that further research needs to be carried out on the evaluation of the use of gastritis drugs which include the right indications, right drugs and right patients. The limitation of the study was the limited population of prescriptions from July to December 2021.

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