An Overview of Drug Prescription in Gastritis Patients at Mangusada Regional Hospital from 2019 to 2023

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Abstract. Gastritis is one of the most common digestive system disorders. Its prevalence in Indonesia is reported to reach 64.9%. This study aims to determine the pattern of drug prescribing among patients with gastritis in Bali. This is a descriptive observational study with a cross-sectional approach. This research was conducted at the Mangusada Regional Hospital. The total sample in the study was 132. This study examines the characteristics of patients and pharmacological therapies based on medical record data. The study found that the majority of patients were men (59.1%) and were between 46 and 65 years old (43.9%). The majority had acute gastritis (87.9%) and had no comorbid diseases. The type of therapy used in patients was polytherapy, involving two types of drugs (60.7%), with the most common combinations found in the proton pump inhibitor (PPI) and cytoprotective groups (48.5%). PPI is the highest prescribed drug (46%). This study concluded that the treatment of gastritis is dominated by the use of polytherapy, with the most common combination being a PPI and a cytoprotective agent. PPI is the highest prescribed drug. Based on these findings, it is recommended that future research focus on evaluating the clinical effectiveness and cost-effectiveness of the therapy.

Keywords: acute gastritis, chronic gastritis, PPI, antacids, drug prescribing

1 Introduction

Gastritis is one of the most common digestive system disorders [1]. Its prevalence is reported to be 25%, and it increases 2- to 4-fold in patients with Helicobacter pylori infection [2]. The highest prevalence was reported in a study conducted at Saint Paul Hospital Millennium Medical College [3]. In this study, the prevalence of gastritis was 78.8%, with a distribution of 48.9% as acute gastritis and 29.9% as chronic gastritis [3]. In Indonesia, the prevalence is reported to reach 64.9% [4].

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Factors that contribute to the high rate of gastritis are spicy food consumption, caffeine consumption, alcohol consumption, lack of regular physical activity, stress, improper dietary patterns, and consumption of certain medications [2,3]. In some cases, it is also associated with bacterial infections, especially Helicobacter pylori [4]. Infection by this bacterium has also been reported to be the cause of an increase in gastric cancer cases [5].

The symptoms commonly experienced by patients include burning in the stomach, heartburn, nausea, vomiting, bloating, frequent belching, and decreased appetite [4]. Therefore, the management of gastritis cases aims to overcome these problems.

Gastritis therapy encompasses both pharmacological and non-pharmacological approaches [1]. Pharmacological therapy aims to reduce gastric acidity, control acid production, protect the stomach wall, and address the underlying cause [1]. Based on the results of previous studies, the most commonly prescribed monotherapy was antacids (17%), while the most widely used combination therapy was antacids plus proton pump inhibitor (PPI) (19%) [6]. These results are in line with a study in West Java, which reported that the highest percentage of the combination of antacids and PPI was 21.05% [7]. The most commonly prescribed drug was PPI (35%) [7], specifically omeprazole at 10.81% [7]. Similar results were also found in another study, where the percentage of PPI prescriptions reached 207 (40.51%) prescriptions out of a total of 309 patients [8]. However, in contrast to other studies that reported that antacid use was the highest at 40.20% [8]

Based on information from previous studies, it is known that the prevalence of gastritis in Indonesia is still high. The pattern of drug prescribing in several different places in Indonesia also varies. Therefore, it is necessary to conduct a study to determine the pattern of drug use in Bali, particularly at the Mangusada Regional Hospital in Tabanan, as similar studies have not been conducted in Bali.

The novelty of this study lies in the presentation of data in patients with gastritis over a five-year period, which has not been previously explored specifically at the regional hospital level in Indonesia. This study provides a comprehensive overview of medication use trends in a real-world setting, while also identifying potential discrepancies with current therapeutic guidelines. The results of this study have crucial implications for future gastritis therapy, particularly in efforts to optimize rational and evidence-based drug prescribing patterns. By mapping drug use trends in gastritis cases, this study can provide a basis for evaluating more individualized and efficient therapy policies, while reducing the risk of drug resistance and long-term side effects. These data also have the potential to inform the formulation of local clinical guidelines that tailor treatment to the etiology of gastritis and patient response to therapy, ultimately leading to higher-quality and more effective healthcare services.

2 Method

2.1 Ethics approval

This research has received ethical permission from the Health Research Ethics Committee of the Mangusada Regional Hospital, Badung Regency, with ethics number 070/1286/RSDM/2024. The researcher utilized secondary data obtained from the electronic medical records of patients with gastritis for the period from January 2019 to December 2023.

2.2 Study design and population

This study uses a descriptive observational method with a cross-sectional approach. This research was conducted at the Mangusada Regional Hospital. The sample used in this study

consisted of patients with gastritis at Mangusada Regional Hospital from January 2019 to December 2023, who met the inclusion and exclusion criteria. The inclusion criteria include patients with gastritis who are registered in the Mangusada Regional Hospital register for the period from January 2019 to December 2023, who receive single or polytherapy for their gastritis case, and have complete medical record data from their most recent visit. The exclusion criteria are patients who only receive non-pharmacological therapy, such as communication, information, and education (KIE). The study comprises 132 samples. The sampling technique in this study was consecutive sampling.

2.3 Data analysis

This study employed univariate analysis to examine the characteristics of patients with gastritis, including age, gender, payment status, comorbidities, as well as the pharmacological therapies received by patients, such as the type of therapy, drug class, and type and dose of drugs. The data are analyzed using SPSS version 25.0 and presented in narrative, figures, and tables.

3 RESULT AND DISCUSSION

3.1 Demographic Characteristics

The study found that the age group with the highest number of patients affected by gastritis was 46-65 years, comprising 58 patients (43.9%). The youngest age of gastritis patients is 18 years old, while the oldest age is 78 years old. Based on gender, the majority of patients were men, with 78 patients (59.1%). Based on their paid status, patients with gastritis made the most payments using the Social Security Agency (BPJS), with 125 patients (94.7%) (Table 1).

These results are similar to previous studies that reported that gastritis is more prevalent in older men (70%) (average age 54 years) [9]. However, the results differ from other studies that reported that women experienced more than 50% (52-56%) of gastritis compared to men [6,7]. The high incidence of gastritis in women in previous studies was associated with emotional and stress factors [6]. However, gastritis can be triggered by various other factors such as alcohol consumption, smoking, and other factors, so that the incidence rate may also be high in men.

Table 1. Characteristics of gastritis patients

Characteristics	Number of Patients (n=132)	Percentage (%)
Age (Years)		
Adolescents (12 – 25)	7	5.3
Adults (26 – 45)	44	33.3
Elderly (46 – 65)	58	43.9
Senior (≥ 65)	23	17.4
Gender		
Male	78	59.1
Female	54	40.9
Payment Status		
BPJS (Social Security Agency)	125	94.7
Non-BPJS	7	5.3

3.2 Clinical features of Gastritis Patients

The study's results found that patients with gastritis at Mangusada Regional Hospital were grouped into two categories: acute gastritis and chronic gastritis. The patient population consisted of 116 patients with acute gastritis (87.9%) and 16 patients with chronic gastritis (12.1%) (Figure 1). Of these 132 patients with gastritis, 81 (61.4%) had no comorbid diseases, and 51 (38.6%) had comorbid diseases (Table 2). The most common comorbidities were anemia (8.3%), followed by hypertension (6.8%), diabetes mellitus, and heart failure (3%), respectively (Table 2).

The results of this study are consistent with those of previous studies, which reported that the incidence of acute gastritis is almost twice that of chronic gastritis [2]. This fundamental difference between acute and chronic gastritis is characterized by the presence of inflammatory cell infiltrates, such as lymphocytes (typically in chronic inflammation) and granulocytes (typically in acute inflammation) [11].

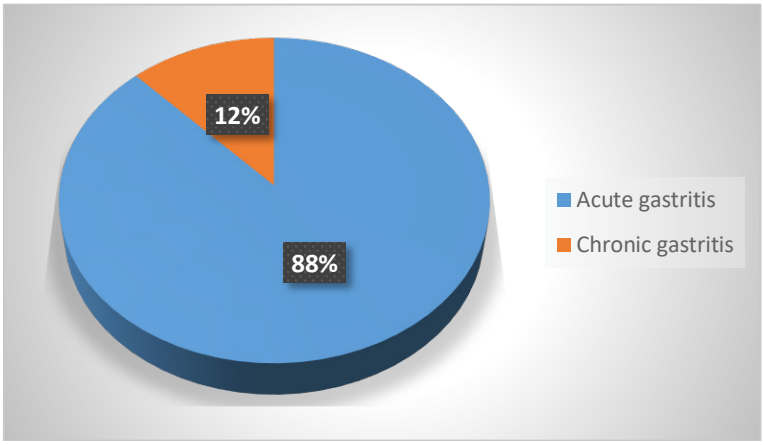

Fig 1. Characteristics of gastritis patients

Table 2. Distribution of comorbidities in gastritis patients

Comorbidities	Frequency (n= 51)	Percentage (%)
Anemia	11	8.3
Hypertension	9	6.8
Diabetes Mellitus	4	3.0
Heart Failure	4	3.0
Gastrodoudenitis	3	2,3
Anxiety	3	2.3
Cholelitiasis	2	1.5
Hyperthyroid	2	1.5
Sinusitis	2	1.5
Chronic Obstructive Pulmonary Disease	1	0.8
Urinary tract infection	1	0.8
Acute appendicitis	1	0.8
Hypokalemia	1	0.8
Cirrhosis Hepatitis	1	0.8
Mild Depression	1	0.8
Lupus	1	08

Vertigo	1	0.8
Bronchitis	1	0.8
Asthma	1	0.8
Goiter	1	0.8

3.3 Characteristics of Gastritis Patient Therapy

The results showed that the total number of patients who received monotherapy was 21 (15.9%), and those who received polytherapy were 111 (84.1%) (Table 3). In this study, the author regrouped the number of polytherapies given to patients, whether they received two types of drugs or three types of drugs. The most commonly used type of polytherapy in gastritis patients at Mangusada Regional Hospital was polytherapy with two types of drugs (60.7%), with the most combinations found in the PPI and cytoprotective groups, involving 64 patients (48.5%).

Pharmacological therapy in gastritis patients aims to reduce stomach acid production and/or treat Helicobacter pylori bacterial infection [12]. Through this study, it is known that the majority of mucoprotective agents are given as a combination therapy with antacids and PPIs. Prescription as monotherapy is only 3.8%. This is under the guideline recommendations that this drug is not recommended for use as monotherapy [6].

Table 3. Characteristics of prescribing gastritis drugs by type of therapy

Drugs	Frequency (n=132)	Percentage (%)
Monotherapy		
Antacid	0	0
H2 Receptor Blocker	0	0
PPI	16	12.1
Cytoprotective	5	3.8
Polytherapy (2 Drugs)		
Antacid + PPI	15	11.4
Antacid + Cytoprotective	1	0.8
PPI + Cytoprotective	64	48.5
Polytherapy (3 Drugs)		
Antacid + PPI + Cytoprotective	30	22.7
H2 Receptor Blocker + PPI + Cytoprotective	1	0.8

Based on the number of drug classes prescribed, PPI is the highest prescribed drug (46%). The number of PPI prescriptions reached 126 prescriptions out of a total of 274 prescriptions (Figure 2). The distribution of the types and doses of drugs prescribed in each class of gastritis drugs is as shown in Table 4. Ranitidine 150 mg was the only type of H2 receptor blocker prescribed (0.4%), whereas in the PPI group, omeprazole 20 mg (21.9%) and lansoprazole 30 mg (24.1%) were used. In cytoprotective agents, the only drug given was sucralfate (36.9%) in the form of a liquid preparation (suspension).

The highest PPI prescription in this study aligns with the results of previous studies, which have shown that PPI is a drug that has a beneficial effect in repairing gastric damage in cases of erosive gastritis and other acid-related disorders (gatroesophageal reflux disease) [5,12]. Therefore, this drug is excellent when combined with mucoprotective agents [6].

In addition to pharmacological therapy, the treatment of gastritis must also be accompanied by dietary and lifestyle modifications [1]. Patients should limit certain types of food, reduce their alcohol consumption, and refrain from smoking [12]. The diet recommended for patients includes reducing acidic and spicy foods, limiting fatty foods, avoiding caffeine and carbonated drinks, eating small but frequent meals, drinking enough water, and taking vitamins [1].

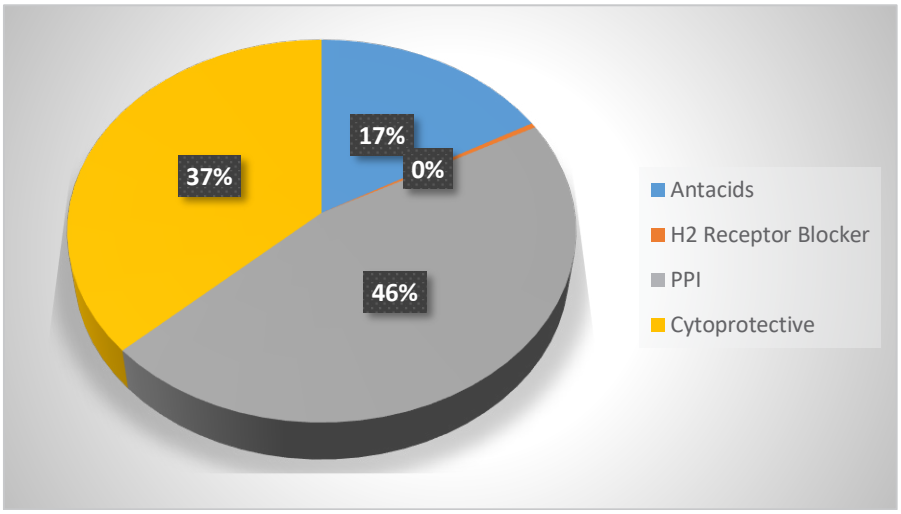

Fig 2. Gastritis drug prescribing patterns by drug class

Table 4. Characteristics of prescribing gastritis drugs based on the type and dosage of drugs

Drugs	Prescription (n=274)	Percentage (%)
Antacids		
Antasida Doen 500mg	46	16,8
H2 Receptor Blocker		
Cimetidine 200mg	0	0
Ranitidine 150mg	1	0,4
Famotidine 20mg	0	0
Nizatidine 150mg	0	0
PPI		
Omeprazole 20mg	60	21,9
Lansoprazole 30mg	66	24,1
Esomeprazole 20mg	0	0
Pantoprazole 40mg	0	0
Cytoprotective		
Sukralfat suspension 500mg/5ml	101	36,9

This study has several limitations that should be taken into consideration. First, the study relied solely on medical records, thereby limiting its ability to gather comprehensive clinical information, such as patient adherence to treatment, history of over-the-counter medication use, and clinical response to the therapy. Second, the study did not directly evaluate the

presence of Helicobacter pylori infection, a major cause of gastritis that significantly influences treatment choices. Third, uncontrolled variations in prescribing practices among physicians could lead to bias in the interpretation of treatment patterns. Furthermore, the results of this study were limited to a single hospital; therefore, generalizations to a broader population should be made with caution.

4 CONCLUSION

This study concluded that gastritis is most common in older men who mostly use BPJS services. Based on the clinical classification, the majority of patients suffer from acute gastritis without having comorbidities. Treatment of gastritis is dominated by the use of polytherapy of two types of drugs, with the most common combination of PPI and cytoprotective groups. The most commonly used class of drugs is PPI.

Based on the findings of this study, it is recommended that future research focus on evaluating the clinical effectiveness of the most commonly prescribed treatment regimens, including the relationship between the type of therapy and patient outcomes, such as symptom improvement or recurrence of gastritis. Furthermore, it is important to assess the cost-effectiveness of the therapies used (pharmacoeconomic analysis).

The author would like to thank the entire staff of Mangusada Regional Hospital and the Faculty of Medicine and Health Sciences, Warmadewa University, for their research permits and assistance during the implementation of the research.

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