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Description of Polypharmacy and Interactions that can Reduce the Effectiveness of Dyspepsia Drugs in patient BPJS with Dyspepsia at the Porsea Regional General Hospital based on Prescriptions Period November-January 2020

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Abstrak

Dyspepsia is a collection of symptoms of pain, persistent or recurring discomfort in the upper abdomen, feeling full when eating, feeling full quickly, bloating, belching, decreased appetite, nausea, vomiting. Dyspepsia ranks 5th out of the top 10 diseases in hospitalized patients and 6th for outpatients. The prevalence of dyspepsia varies between 7-45%, depending on the definition used in geographic location. The prevalence in Asia is around 8-30%. It is estimated that 30% of patients who come to the gastroenterologist's practice are 60% with complaints of dyspepsia, around 20-40% of adults experience dyspepsia, whereas in general clinics it is only 2-5%. This study aims to Description of Polypharmacy and Interactions that can Reduce the Effectiveness of Dyspepsia Drugs in patient BPJS with Dyspepsia at the Porsea Regional General Hospital based on Prescriptions Period November-January 2020. The research design was descriptive with a retrospective time approach carried out at Porsea Hospital, Toba Regency, based on prescriptions for the period November-Januari 2020, data were collected in February 2020 with a sample of 118 cases using the Simple random sampling technique (November: 41 cases, December: 38 cases, January 39 cases). The instrument used to collect data in this study is the data collection format. The results showed polypharmacy in outpatient BPJS patients with dyspepsia at the Porsea Regional General Hospital for the period November-January 2020, namely 71 (60.17%) cases with major polypharmacy (5-11) and 47 (39.83%) cases with minor polypharmacy. For future researchers to examine the effects of the use of polypharmacy on reducing the effectiveness of dyspepsia drugs with guide books or other references.

Keywords: Dyspepsia, Polypharmacy, Interaction

INTRODUCTION

Dyspepsia is a collection of symptoms in the form of pain, discomfort in the upper abdomen that persists or recurs accompanied by other symptoms such as feeling full when eating, feeling full quickly, bloating, belching, decreased appetite, nausea, vomiting, and chest feels hot that has been going on since the last 3 months which can be caused by various diseases including stomach ulcers. Modern lifestyles such as consumption of fast food, alcoholic beverages, lack of fiber intake are factors that can be associated with impaired digestive organ function. Disorders of the digestive organs are related to psychological factors. Excessive or prolonged stress is thought to cause increased gastric acid secretion which is known to be one of the causes of dyspepsia (Kumar, 2012).

Based on the causes and symptoms that arise, dyspepsia is divided into 2, namely organic dyspepsia and functional dyspepsia. Organic dyspepsia if the cause of dyspepsia is clear, for example the presence of peptic ulcer, gastric carcinoma, and cholelithiasis which can be found easily through clinical, radiological, biochemical, laboratory, or conventional gastroenterology (endoscopy) examinations. Whereas functional dyspepsia is when the cause is unknown or abnormalities are found on conventional gastroenterology examinations or organic damage and systemic diseases are not found (Andre, Y, *2013)*.

In a study conducted on 38 patients with functional dyspepsia, it was found that 26 people (68%) experienced unwanted life events, 35 people (92%) experienced anxiety, and 38 people

(100%) experienced depression. Statistically undesirable life events and depression were not associated with functional dyspepsia. However, cases of anxiety are statistically associated with functional dyspepsia

Depkes (2004), showed that dyspepsia ranks 5th out of the top 10 diseases with hospitalized patients and 6th for outpatients. Indonesia is a developing country which is faced with two problems in health development, namely communicable diseases which are still not handled much and non-communicable diseases whose incidence is increasing. One of the non-communicable diseases that has a high incidence in the world is dyspepsia. Globally, the prevalence of dyspepsia varies between 7-45%, depending on the definition used in geographic location. The prevalence in Asia is around 8-30%. It is estimated that 30% of patients who come to gastroenterologist practice, 60% with complaints of dyspepsia. Based on visiting data at the gastroenterologist clinic, around 20-40% of adults experience dyspepsia, while only 2-5% in general clinics. The varying number of visits is caused by differences in perceptions about the definition of dyspepsia. Dyspepsia syndrome can be caused by many things. The causes of dyspepsia include diet and environmental factors, gastric acid secretion, gastric motor function, gastric visceral perception, psychology, and helicobacter pylori infection (Pardiansyah.R.,Yusran., 2016).

Research conducted by Purnamasari L (2017) states that dietary factors in dyspepsia syndrome are related to irregular eating patterns and long breaks between meal schedules. Irregular eating patterns are greatly influenced by activities and busy activities. Irregular eating patterns are also influenced by the desire to have an ideal body shape. Research in Medan showed that the greatest incidence of dyspepsia was in the Batak ethnic group 45.5%, Karo 27.3%, Javanese 18.2% and the smallest Malay 4.5% and Mandailing 4.5%. Research conducted at Martha Friska Hospital in Medan showed that the most dyspepsia sufferers were women at 61.6%. Another study conducted at Dr. M, Djamin Padang regarding dyspepsia also shows that more women suffer from dyspepsia than men with a percentage of 64.3%.

Based on previous research, data on dyspepsia sufferers at the Porsea Regional General Hospital for BPJS patients based on age range from 21 to over 61 years. Based on the age range, 2 cases (1%) were 21-30 years old, 6 cases (2%) 31-40 years old, 40 cases (16%) 41-50 years old, 51-60 years old 62 cases (26%), and aged 61 and over, namely 133 cases (55%).

Based on research at the Porsea Regional General Hospital, 243 polypharmacy samples were distributed based on the number of drugs used by patients. Distribution of polypharmacy to BPJS patients at Porsea Hospital. Based on the study of the 243 cases that were sampled, it can be seen that 206 cases (85%) were classified as minor polypharmacy and 37 cases (15%) were classified as major polypharmacy. Out of 206 minor polypharmacy cases, 1 received 5 cases (2%), 2 received 21 cases (10%), 3 received 92 cases (45%), 4 polypharmacy received 88 cases (43%). Meanwhile, out of 37 cases of major polypharmacy, 36 cases (97.3%) of polypharmacy received 5 and 1 case (2.7%) of polypharmacy received 6 (Hutagalung, W. 2018). The high number of events that can be caused by the interaction of one drug with another drug is often referred to as polypharmacy.

Polypharmacy is the use of more than one drug or in large quantities and is not in accordance with the patient's health condition. The basic meaning of polypharmacy is a drug in large quantities under one prescription (and/or without a prescription) for clinical effects that are not compatible. Polypharmacy can significantly increase the risk of drug interactions with other drugs. Based on a global study, it was found that patients who used 2 types of drugs had a 13% risk of drug interactions, and 38% when using 4 types of drugs and reached 82% when using 7 or more drugs simultaneously. Polypharmacy consists of 2 namely minor and major. Some researchers say that the use of 2 or more types of drugs is called minor polypharmacy and the use of more than 4 types is called major polypharmacy (Dasopang, E. S., 2015).

Interaction is a factor that can affect the body's response to treatment. Drugs can interact with food or drink, chemicals and other drugs. It is said that an interaction occurs when food, drink, chemicals and other drugs change the effect of a drug that is given together (Ganiswara, 2005).
To find out interactions that can reduce the effectiveness of dyspepsia drugs, you can use an online-based application called A TO Z DRUG FACTS. A TO Z DRUG FACTS is an online-based electronic book that contains drug information in which there are interactions, contraindications, dosages, and indications (Permenkes RI, 2016).

Based on the description above, it is necessary to conduct research that describes of Polypharmacy and Interactions that can Reduce the Effectiveness of Dyspepsia Drugs in patient BPJS with Dyspepsia at the Porsea Regional General Hospital based on Prescriptions Period November-January 2020.

RESEARCH METHODS

The research design (method) used was descriptive with a retrospective time approach. This study aims to provide an overview of the use of drugs and polypharmacy in outpatient BPJS patients with dyspepsia at the Porsea Regional General Hospital, Toba Samosir Regency based on prescriptions for the period November-January 2020. The study was conducted at the Porsea Regional General Hospital, Toba Samosir Regency in February 2020. In this study, the population consisted of all outpatient Social Security Administration Agency (BPJS) patient data suffering from dyspepsia at the Porsea Regional General Hospital from February to April 2019, namely in February there were 59 cases, in March there were 54 cases and in April there were 55 cases, so that the total number of cases in November-January 2020 was 118 cases. Using the Slovin formula, the sample size is 118 cases using the simple random sampling technique (November: 41 cases, December: 38 cases, January: 39 cases). The instrument used to collect data in this study was a data collection format designed by the researchers themselves. Data is presented in the form of frequency distribution tables and diagrams on the use of dyspepsia drugs in outpatients with dyspepsia at RSUD Porsea.

RESULTS AND DISCUSSION

Description of Respondents Characteristics

Tabel 1 Distribution of proportions based on respondent characteristics in patients with dyspepsia (n: 118 cases at Porsea Regional General Hospital)

NO	Characteristics of Respondents	Frequency (n)	Percentage (%)
Age			
1	21-30 years old	1	0,85
2	31-40 years old	13	11,01
3	41-50 years old	20	16,95
4	51-60 years old	14	11,87
5	>61 years old	70	59,32
Total		118	100
Gender			
1	Man	51	43,22
2	Woman	67	56,78
Total		**118**	**100**

Table 1 above illustrates that the age of 61 and over is more dominantly affected by dyspepsia, namely 70 cases (59.32%), the second order is the age of 41-50 years as many as 20 cases (16.95%), the third order is the age 14 cases (11.87%) of 51-60 years, 13 cases (11.01%) of the fourth, 31-40 years of age, and 1 case of 21-30 years of age (0.85%) , with female gender in 67 cases (56.78%) and males experiencing 51 cases (43.22%).

Description of Drug Use in Patients with Dyspepsia at Porsea General Hospital by Class drug

1. Use of Dyspepsia Drugs

Table 2. Distribution of dyspepsia drug use by Class drug in dyspepsia patients at Porsea Regional General Hospital

No	**Class drugs**	Frequency (n)	Percentage (%)
1	Class Antasida	35	29,66
2	Class Antagonis Reseptor H2	11	9,32
3	Class PPI	107	90,67
4	Class Prokinetik	37	31,55
5	Class Anti Depresi	24	20,33
6	Class Sitoprotektif	25	21,19

Based on table 2, it can be seen that the most widely used dyspepsia drugs were the proton pump inhibitor (PPI) group, namely 107 cases (90.67%), the prokinetic class, namely 37 cases (31.35%), the antacid group, namely 35 cases. (29.66%), cytoprotective group, namely 25 cases (21.19%), anti-depressant group, namely 24 cases (20.33%), and H2 receptor antagonist class, namely 11 cases (9.32%)

2. Drug Use based on Other Drug Classes

Table 3. Distribution of drug use in patients with dyspepsia based on other drug classes

No	**Another drug**	Frequency (n)	Percentage (%)
1	Class AINS	67	56,78
2	Class Gol. Vitamin	118	100
3	Class Gol. Antihistamin	15	12,71
4	Class Antibiotik	16	13,55
5	Class Mukolitik	20	16,94
6	Class Antihipertensi	64	54,23
7	Class Obat Lain	44	37,28

Other drug Class that were most widely used were the vitamin group, which was 118 cases (100%), the NSAID class, which was 67 cases (56.78%), the antihypertensive class, which was 64 cases (54.23%), the other drug classes, which were 44 cases (37.28%), mucolytic group, namely 20 cases (16.94%), antibiotic class, 16 cases (13.55%), and antihistamine group, namely 15 cases (12.71%).

Discussion

Inappropriate use of drugs is still often found in health centers such as hospitals and health centers. Based on research by Lee et al. (2019) stated that more than a third of triple therapy given in health centers was inadequate, including inappropriate treatment duration or insufficient doses of one or more triple therapy components (Lee et al., 2019). The existence of comorbidities in patients with dyspepsia causes patients to often receive more than two kinds of drugs. With the increasing complexity of the drugs used in treatment and the development of polypharmacy, the possibility of drug interactions is increasing, as in the treatment of dyspepsia such as the use of the dyspepsia drug omeprazole with diazepam will cause drug interactions in the pharmacokinetic phase.

This needs to be considered because drug interactions can affect the response or have an effect on the body towards treatment (Otero, 2014). Drug interactions are changes that occur in drugs due to the presence of other drugs, herbal medicines, food, drinks or other chemical agents. The potential for drug interactions occurs frequently in patients receiving multiple drugs on a prescription. Interactions can be additive, synergistic or antagonistic to the effects of one drug by another drug, or sometimes several other effects. The desired effect and unwanted effect are the result of drug interactions, where the effect of the drug may change due to other drugs, food/drinks. Undesirable effects of a drug produce toxicity or side effects due to increased plasma levels in the blood, or conversely plasma drug levels decrease so that the therapeutic results achieved are not optimal. Unwanted effects from drug interactions can be minimized by monitoring drug therapy (PTO) which aims to increase the effectiveness of therapy and minimize the risk of unwanted drug reactions (ROTD). In a previous study conducted by Wijayanti et al (2014) using a combination of dyspepsia drugs, it was found that there were cases of a combination of antibiotics + sucralfate + (PPI) proton pump inhibitors + H2 receptor antagonists + antiemetics + antacids in 20 cases with a percentage of 17.39%, in addition to the combination H2 receptor antagonist drugs + antiemetics + antacids + antispasmodics + (PPI) proton pump inhibitor + sucralfate in 12 cases with a percentage of 10.43%. Potential interactions are one of the categories of DRP (drug related problems) that arise after drug use or unwanted events from patients due to drug therapy so that they have the potential to hinder the success of therapy.

1. The description of the interaction of dyspepsia drugs with ruzukan A to Z Drug Facts are Ranitidine: Diazepam: Pharmacological effects may be decreased due to decreased GI absorption by ranitidine. Shocking timing of administration can avoid this reaction. Ethanol: May increase plasma ethanol level. Glipizide: Possibly enhances the hypoglycemic effect. Ketoconazole: May reduce the effect of ketoconazole. Lidocaine: May cause an increase in lidocaine levels. Warfarin: Ranitidine may interfere with warfarin clearance. The hypoprothrombinemic effect may be increased; may need adjustment.
2. Omeprazole: Benzodiazepines: The clearance of benzodiazepines may be reduced. Cilostazol: Plasma levels may be increased with omeprazole, increasing both therapeutic and side effects. Clarithromycin: Serum concentrations of clarithromycin and omeprazole may be increased. Drugs dependent on gastric pH for bioavailability (eg, ketoconazole, iron salts, ampicillin): Absorption of these drugs may be affected. Phenytoin: Decreased plasma clearance and increased half-life of phenytoin. Warfarin: prolonged elimination of warfarin

Observations were made to observe interactions that could reduce the effectiveness of dyspepsia drugs with ruzukan A to Z Drug Facts found no interactions. Where there are no drugs that interact to reduce the effectiveness of dyspepsia drugs.

CONCLUSION

Polypharmacy and Interactions that can Reduce the Effectiveness of Dyspepsia Drugs in patient BPJS with Dyspepsia at the Porsea Regional General Hospital based on Prescriptions Period November-January 2020 found the following results:

1. Description of the proportion distribution of outpatient BPJS patients with dyspepsia at the Porsea Regional General Hospital for the November-January 2020 period based on age, namely those aged 61 years and over as many as 70 cases (59.32%), aged 41-50 years as many as 20 cases (16.95%), 51-60 years old 14 cases (11.87%), 31-40 years old 13 cases (11.01%) and 21-30 years old 1 case (0.85%) . Description of the distribution of the proportion of outpatient BPJS

patients with dyspepsia at the Porsea Regional General Hospital for the November-January 2020 period based on gender, namely women experienced 67 cases (56.78%) and men experienced 51 cases (43.22%)

2. An overview of the use of dyspepsia drugs in outpatient BPJS patients with dyspepsia at the Porsea Regional General Hospital for the period November-January 2020 based on class was the proton pump inhibitor (PPI) group, namely 107 cases (90.67%) where dominant used Omeprazole 67 cases (62 .61%), who received therapy with the prokinetic group, namely 37 cases (31.55%) where the dominant use of Domperidone was 36 cases (97.30%), who received therapy with the antacid group, namely 35 cases (29.66%) where 100% used antacids, who received therapy with the Cytoprotective class, namely 25 cases (21.19%) where 100% used Sucralfate, who received therapy with the anti-depressant class, namely 24 cases (20.33%) where 100% used Amitriptylin , and those who received therapy with H2 receptor antagonists were 11 cases (9.32%) of which 100% used Ranitidine.
3. Overview of polypharmacy in outpatient BPJS patients with dyspepsia at the Porsea Regional General Hospital for the period November-January 2020, namely 71 (60.17%) cases with major polypharmacy (5-11) and 47 (39.83%) cases with minor polypharmacy

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