Republic of Iraq

University of Basra

College of Pharmacy

Pharmacology and toxicology department

SCREENING THE TYPES OF DRUGS DISPENSED IN TREATMENT OF DYSPEPSIA AMONG PHARMACIES IN BASRA CITY, IRAQ.

A Graduation Project
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بسم الله الرحمن الرحيم

فَاسْتَجَبْنَا لَهُ فَنَجَّيْنَاهُ وَأَهْلَهُ مِنَ الْكَرْبِ الْعَظِيمِ

صدق الله العليّ العظيم
(٧٦ الانبياء)

Dedication

اهداء. . .

الى من ضحوا بأنفسهم لكي نحيا .الى من فدونا بأنفسهم . الى الارواح الطاهرة

لفراشات السلام الابدية . . .الى شهدائنا الابرار. .

الى من كن السند منذ ان ابصرنا النور. . . الى من شهدن اولى الخطوات بأول العثرات. .

جبال الصبر. . . . غايه الحُلم ومنتهى الامل. . . . امهاتنا الفاضلات. .

الى من كانت لي أماً ورفيقة في حياتي إليك يا اختي. . .

الى من كانوا رفاق طريق العلم واصبحوا رفاق حياتي. .بلسم الايام المريرة

الى من ساهم في بقائي وساندني حتى وقوفي. . .اليكم اصدقائي. .

الى من كان لي نصراً في كل حروبي

الى من كان مُتكأي في كل لحظات سقوطي

الى من علمني الوقوف في انهزامي

الى من صنعني ورمم شُناتي

الى عالمي الامن .الى واقعي الجميل

إليك يا أبي أهدي اول انتصاراتي. . .

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Project Accomplishers :

Marwa Abd Alkareem Qassem
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ABSTRACT

Objective

Dyspepsia is a common clinical problem seen by both primary care physicians and gastroenterologists. Initial evaluation should focus on the identification and treatment of potential causes of symptoms such as gastroesophageal reflux disease (GERD), peptic ulcer disease, and medication side effects.

Methods

Based on Seventy eight pharmacies were involved in this study. Pharmacies are randomly chosen from different areas of Basrah city. Aquestionnaires were filled by asking the pharmacist about cases of dyspepsia.

Result

The study investigated the patient-based assessment outcomes of self medication in patients suffering from dyspepsia. analysis of the pharmacist's advice-giving to patients with dyspepsia and on the choice and use of the drugs.

Conclusion

Most pharmacist response to dyspeptic patients very well and offer advice. However, training programs are essential to get pharmacist with experience working within family practice

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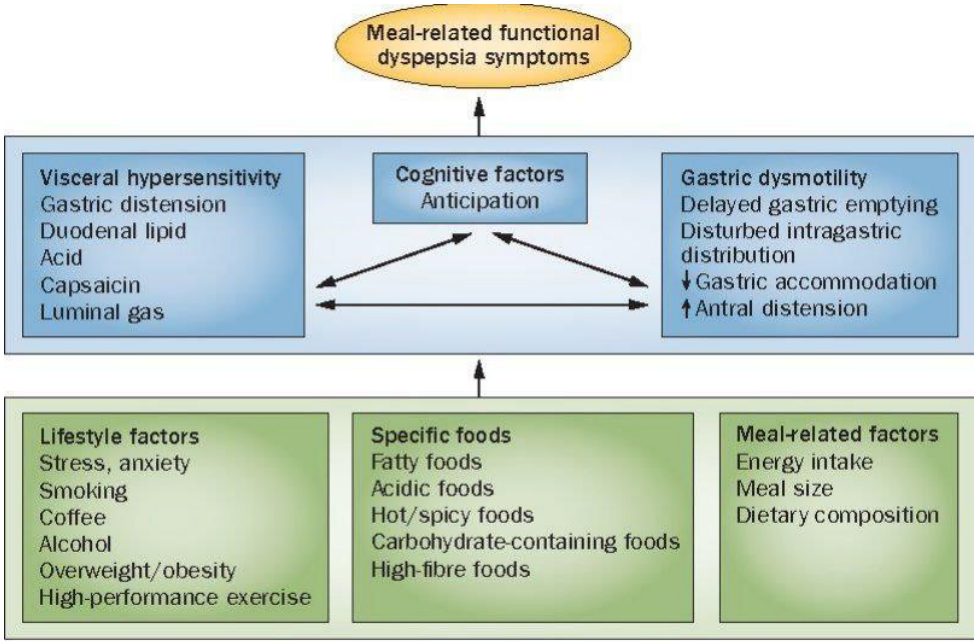
INTRODUCTION

Dyspepsia is a common clinical condition associated with a complex of upper abdominal symptoms including: upper centered discomfort or pain, feeling of abdominal fullness, early satiety, abdominal distention and bloating, belching, and nausea. The exact prevalence of dyspepsia in the general population is not known, but it is estimated that as many as 25% to 40% of adults experience symptoms of dyspepsia in a given year. Patients with chronic or recurrent upper gastrointestinal (dyspeptic) symptoms usually undergo an array of investigative tests in an attempt to identify structural or biochemical abnormalities that can explain their symptoms. However, it is not unusual for a complete investigation to fail to reveal significant organic findings and the patient is then considered to have "Functional Dyspepsia" (FD).The term dyspepsia comes from the Greek words dys (poor) and pepsis (digestion).[1]

It is often replaced incorrectly by the terms “chronic gastritis” or“acid-peptic disease.”When a patient presents DP and its cause has not yetbeen investigated, it is referred to as uninvestigated dys-pepsia (UDP). When it has been subjected to tests, specifically upper endoscopy and occasionally upper abdominalultrasound, it can be classified as functional or idiopathicdyspepsia (FD) when there are no disorders to explain thesymptoms or as secondary or organic dyspepsia when thecause is due to an organic gastrointestinal disease such as apeptic ulcer or tumors (either systemic or metabolic) [2]. After causes have been studied, FD explainsmore than 70% of previously uninvestigated cases if dyspepsia [3].



Fig(1). Dietary and lifestyle factors in functional dyspepsia.[4]

1.1 Differential Diagnosis of Dyspepsia

Dyspepsia refers to chronic or recurrent pain or discomfort centered in the upper abdomen.[5] Patients with predominant or frequent (occurring more than once a week) heartburn or acid regurgitation are considered to have gastroesophageal reflux disease (GERD) until proven otherwise and are not part of the definition of dyspepsia (Figure 1). It is, however, recognized that there is considerable symptom overlap and it is often difficult to distinguish between dyspepsia and GERD in the uninvestigated patient with upper gastrointestinal symp- toms in primary care.[6,7] Further research into the most appropriate definition of dyspepsia in uninvestigated pa- tients in primary and secondary care is recommended. Peptic ulcer is responsible for approximately 10% of upper gastrointestinal symptoms; most patients with dyspepsia undergoing endoscopy are found to have func- tional ddyspepsia[5,8]

More than 50% of patients with GERD will not have any evidence of esophagitis at upper gastrointestinal endoscopy, so this condition can be con- fused with functional dyspepsia.3 H pylori is the main cause of peptic ulcers not associated with nonsteroidal anti-inflammatory drugs

(NSAIDs) and also causes func- tional dyspepsia in a small proportion of cases.[9]

1.2 Treatment

This involves treating dyspeptic patients with antacids, H2 receptor antagonists or proton pump inhibitors and only investigating those that fail to respond. This strategy reserves costly investigation to those patients who are consuming more medication and hence might recover the cost of investigation in decreased prescribing. However, patients with peptic ulcer disease may receive intermittent anti-secretory drugs, responding promptly at each recurrence, whereas H. pylori eradication is now the treatment of choice for this group.[10] Nevertheless, empirical anti-secretory therapy or early endoscopy is the usual approach general practitioners take when initially investigating younger patients with dyspepsia.

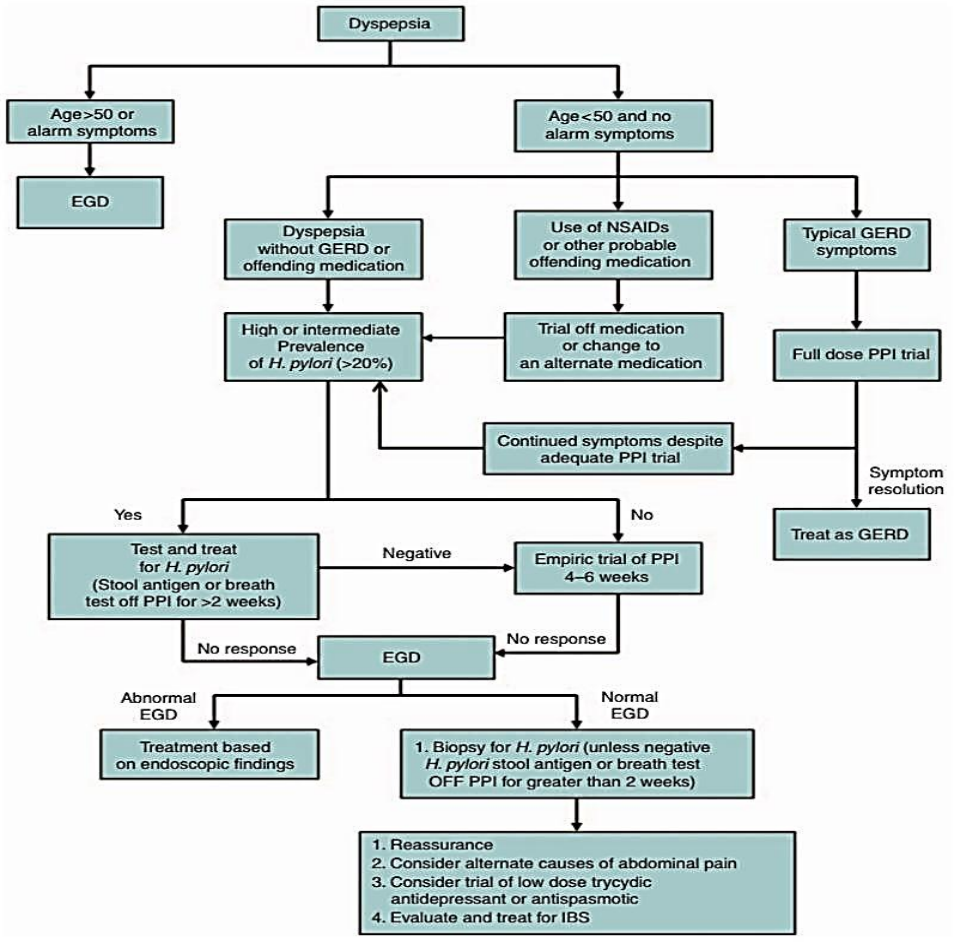


Fig2. Schematic diagram of the management of dyspepsia. [11]

1.3 Antacids

Antacids have been used for centuries to treat dyspepsia and are still the most popular over the counter medication for upper gastrointestinal symptoms. The popularity of antacids in clinical practice has waned since the introduction of H2 receptor antagonists and it is easy to overlook the fact that antacids are safe, cheap and effective drugs. The main disadvantage of antacids is the frequency with which they need to be taken, up to seven times a day. Open use of antacid for symptom relief is common in dyspepsia trials, and no trial has examined antacid v. no treatment.[1]

1.4 H2 receptor antagonists

Cimetidine was the first H2 receptor antagonist to be developed and is the cheapest drug in this class. H2 receptor antagonists are also now available over the counter. The main disadvantage with cimetidine is that it competitively displaces dihydrotestosterone from androgen binding sites and gynaecomastia can Dyspepsiaoccasionally occur in men. The newer H2 receptor antagonists, ranitidine, nizatidine and famotidine, are more potent inhibitors of acid secretion on a weight basis and do not have anti-androgenic side effects. An inconclusive single RCT has compared H2RA with antacids in primary care. Evidence is lacking as to their relative cost-effectiveness.[12]

1.5 Proton pump inhibitors

These drugs irreversibly inhibit the gastric Hþ, Kþ ATPase pump and reduce both basal and stimulated gastric acid output more effectively than H2 receptor antagonists. A systematic review has found that, in the short term, PPIs were more effective at controlling dyspeptic symptoms in unselected patients in primary care than both antacids and H2RA. Pooled relative risk reductions were –29% (95% CI: –21% to –36%) for

PPI:antacids and –37% (95% CI: –15% to –53%) for PPI:H2RA. The effect on heartburn was highly significant (RRR = 48%; 95% CI: 55% to –40%), but epigastric pain did not respond as well; in fact, for this there was no significant difference between PPI and antacids.[13] Long-term PPI might usefully be limited to patients with either proven oesophagitis symptoms shown to be responsive to PPIs on careful review .[14]

1.6 Prokinetics

Metoclopramide reduces nausea and vomiting and is more effective than placebo in healing oesophagitis. The drug is cheap and is generally well tolerated but it does cross the blood-brain barrier and occasionally extrapyramidal side effects occur, particularly when large doses are given to elderly subjects. Domperidone has a similar efficacy to metoclopramide, but does not cross the blood-brain barrier and therefore has a much lower propensity to cause extrapyramidal side effects. Cisapride is chemically related to meto- clopramide but does not have any anti-dopaminergic activity.[14] The drug has now been withdrawn from the UK as it can prolong the QT interval and could be associated with serious cardiac arrhythmias. There is insufficient evidence to determine the effectiveness of prokinetic agents in unselected dyspeptic patients in primary care.[15]

1.7 Combination strategies

In order to limit the prescribing of more expensive and more powerful acid-suppression therapy to patients who seem to need them most to control their symptoms, a number of possible strategies have been proposed. These fall into 'step up' regimens from antacids via H2RA to PPI, with only patients remaining symptomatic receiving more powerful

therapy, or 'step down' from PPI to antacid via H2RA, aiming to obtain good symptom control at the outset. The role of prokinetics is less clear, being much less commonly used in the UK than in other European countries. Possible strategies include using them first-line in patients with 'dysmotility-like' dyspepsia (predominant nausea, bloating and belching), or trying them after acid suppression had failed. [5]

1.8 Aim of the study

The study investigated the patient-based assessment outcomes of self medication in patients suffering from dyspepsia. analysis of the pharmacist's advice-giving to patients with dyspepsia and on the choice and use of the drugs.

randomly chosen from different areas of Basrah city. A questionnaires were filled by asking the pharmacist about cases of dyspepsia regarding the symptoms that patients often complain including heartburn, acidity and Gastro esophageal reflex (GERD), nausea, vomiting and diarrhea. Then we moved to the duration of the symptoms that patients complain.Other informations were included like pharmacist asking patients about drugs and medical history, pharmacist recommend OTC management or not and type of drugs offered, smoking history, manner of nutrition and duration of treatment or other advise given by pharmacist. All these summarized in the questionnaire in figure below:

Location of pharmacy					
Patients symptoms	acidity	heartburn	GERD	stomach pain	Bloating
	Nausea	Vomiting	Diarrhoea	Other	
Duration of symptoms					
smoking habits					
Pharmacist take medication history	yes		No		
Drugs history					
Recommend OTC drugs					
advised patient to change manner of nutrition					
Type of drugs offered	antacid	H2RAs	PPIs	Others	
Antacid					
H2RAs					
PPIs					
Duration of treat					

Fig3. Questionnaire

RESULTS

In the present work 78 pharmacies are visited from different location in basrah city, Iraq. Seventy eight pharmacists were asked to fill a questionnaire(figure3) with the aim of evaluating the response of the pharmacist, offered drugs, quality of advice given to individuals visit pharmacies seeking medical help to relieve dyspepsia. The most common Patient Complaints are acidity and heart burn followed by bloating, GERD, nausea and stomach pain as shown in figure 4.

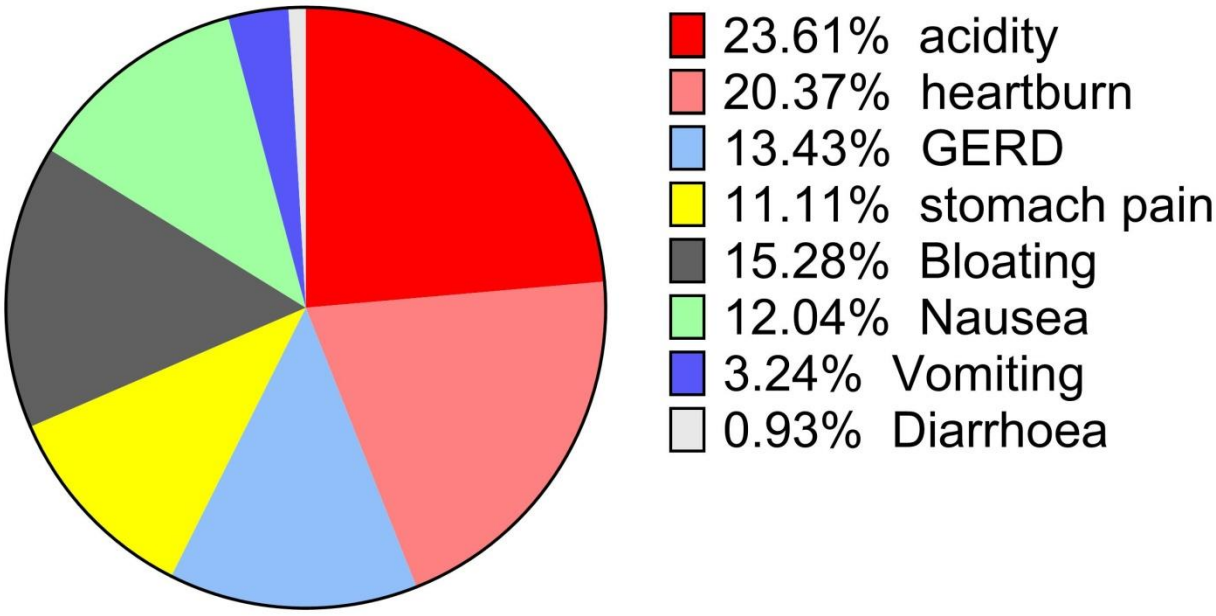
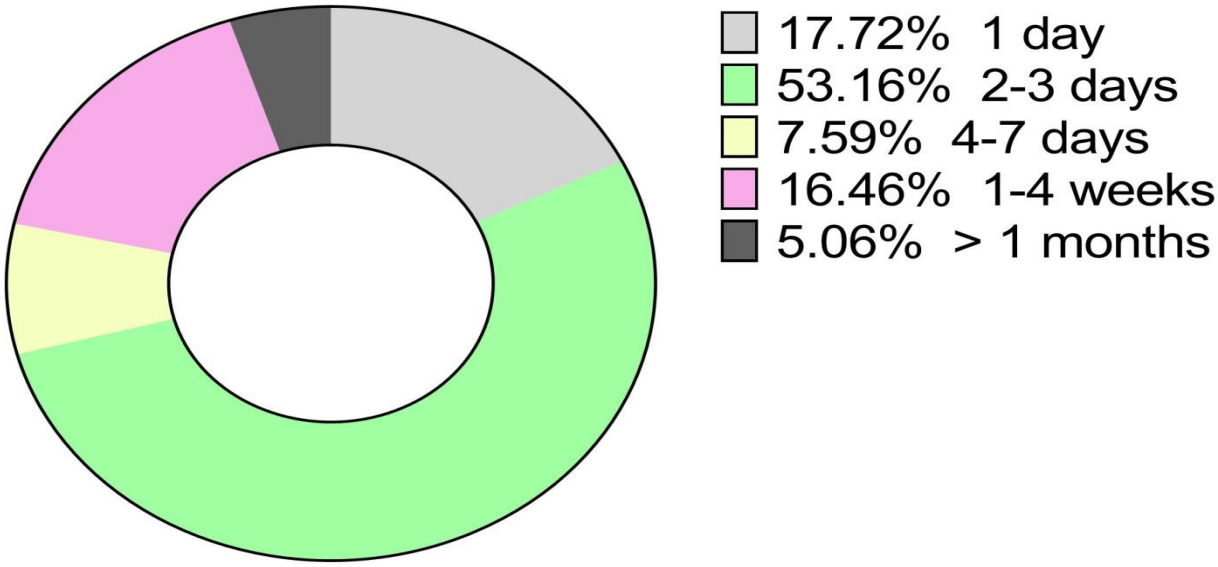


Figure (4): the percent of major patients' complaints visited pharmacy in Basra

Most pharmacists involved in this study response to patients with dyspepsia and ask them some questions to get more information about patients situation including duration of symptoms Figure 5



Figure(5): Duration of symptoms that individuals with dyspepsia complaint before visit the pharmacies.

Regarding smoking habits, most male patients who attend the pharmacies seeking medical supports are heavy smokers. Accordingly 37 (48%) pharmacists (table 1) advised patients to stop smoking and educate them about gastric problems associated with smoking . Furthermore, most pharmacists participate in this study ask patients about medical and drugs history searching about the major cause leading to development of dyspepsia. It has been found that different patients with dyspepsia taking many drugs like NSAIDs, multivitamins, zinc, Iron and other drugs used in chronic disorders like hypertension and diabetes. Most pharmacist advise patients advised patient to change manner of nutrition to decrease spicy and pepper food. Actually, 97.4% of pharmacists recommend intervene by dispensing over the counter medications to relieve symptoms of dyspepsia(Table 1)

Information collected	No. of pharmacist	% of pharmacist
Smoking habits	37	47.4%
Medication history	60	77%
Disease history	40	51.2%
Change manner of nutrition	69	88.4%
Recommend OTC drugs	76	97.4%

Table (1): %Pharmacist response and ask questions to attend patients with dyspepsia.

In the present study, different medications were offered by the pharmacist to be considered OTC medications to treat dyspepsia associated symptoms, antacid and proton pump inhibitors are highly frequent dispensed followed by H2-receptors blocker as seen in figure 6

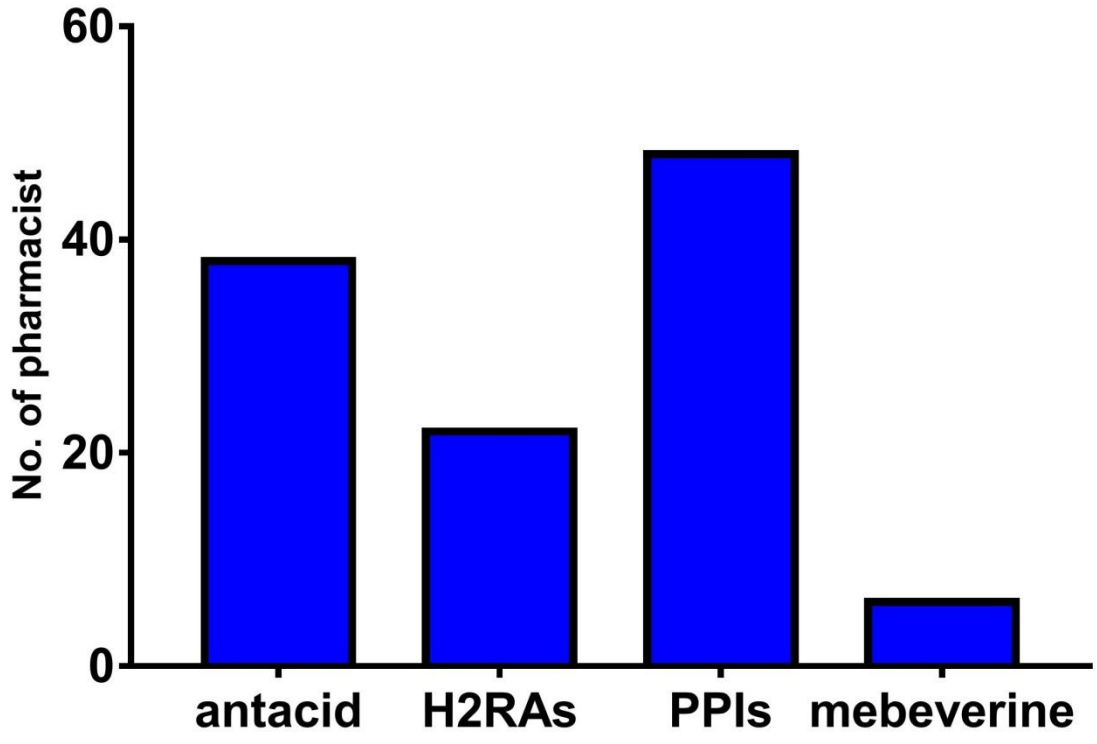
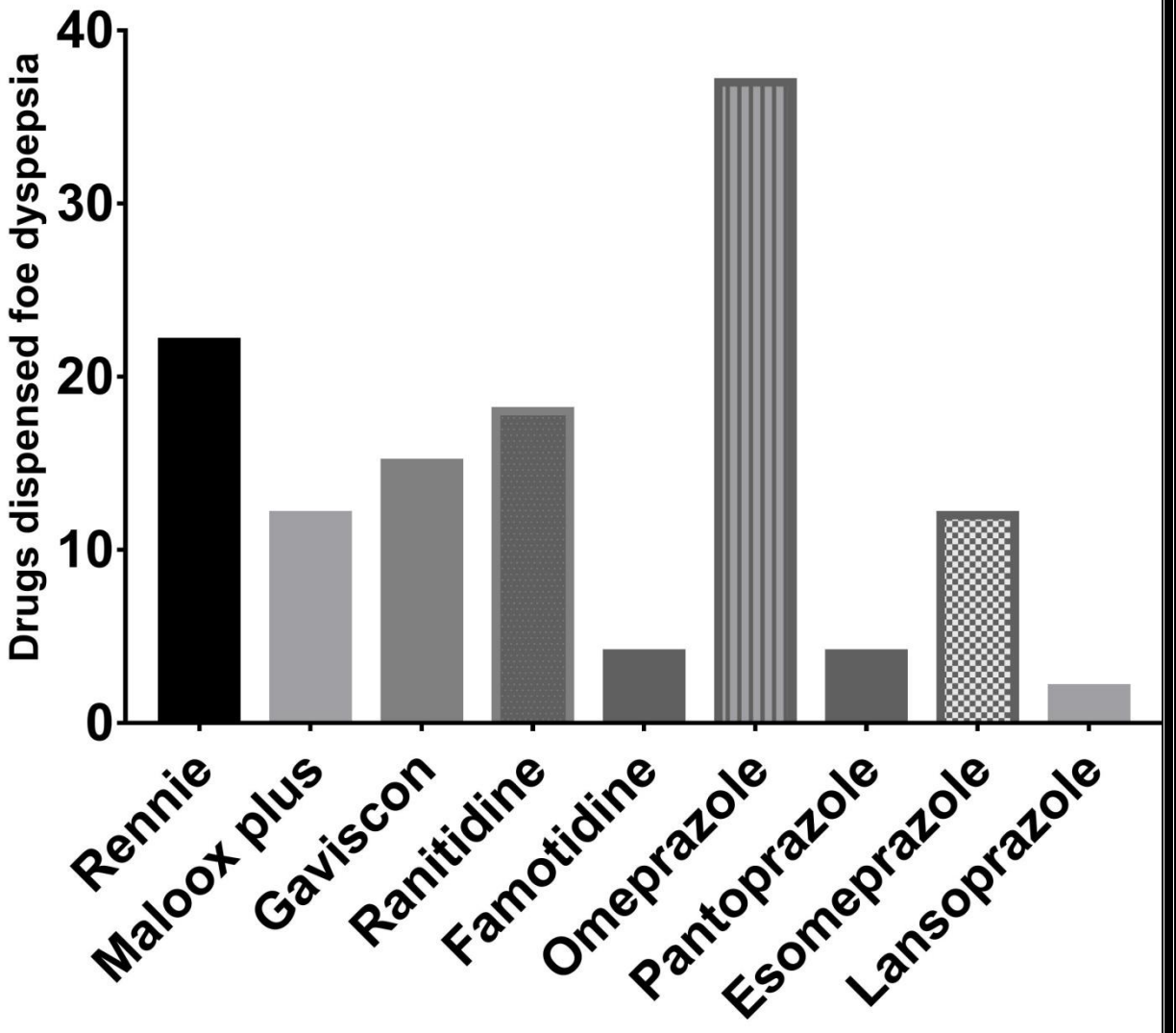
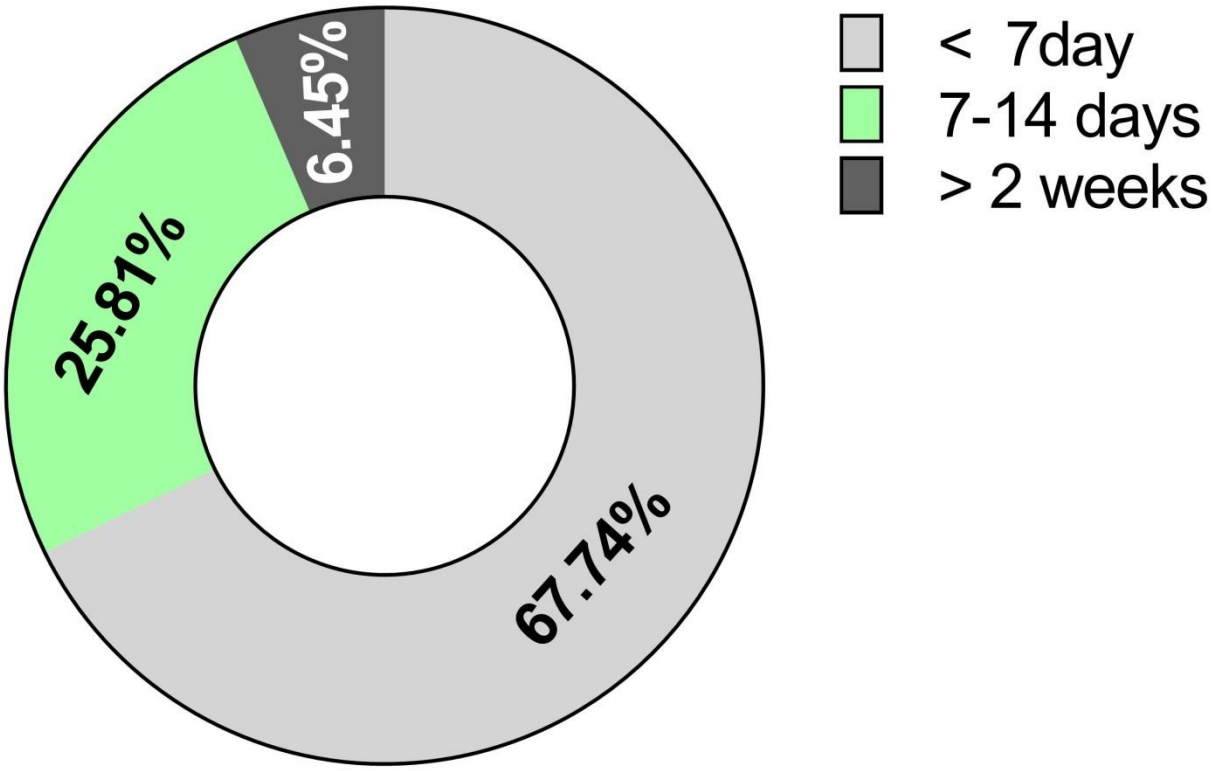


Figure (6): Class of OTC drug groups offered by pharmacist to relieve dyspepsia

Many types of drugs were dispensed for different durations to treat patients with dyspepsia. It has been found that chewable antacid tablets and omprazole are the most widely dispensed drugs to relieve gastric symptoms for less than one week as seen in figure 7 and 8.



Figure(7): Drugs dispensed by pharmacist to treat dyspepsia



Figure(8): Duration of treatment proposed by the pharmacist for patients with dyspepsia

patients often do not inform their physicians of over-the-counter medication or herbal medicine use. Directly questioning patients about the use of NSAIDs may be facilitated by listing common available medications or questioning what they take for their headaches, backaches, arthritis, etc. If a potential offending medication is identified, it should be stopped if clinically feasible or an alternate medication substituted. If NSAIDs cannot be stopped, the addition of a proton pump inhibitor (PPI) or changing the NSAID to a selective COX-2 inhibitor may minimize symptoms . [16]

So, when we did our study and asked the pharamsists we have:
97.4% pharmisist recommended OTC drugs .In the present study,in basrah different medications were offered by the pharmacist to be considered OTC medications to treat dyspepsia associated symptoms, antacid and proton pump inhibitors are highly frequent dispensed followed by H2-receptors blocker.

So,Forty pharmacists treat patients with indigestion by means of antacids,50 pharmacists by PPI,20 pharmacists by H2RAs and 5 pharmacists treat patients by mebeverine.

We have in other country:
The most part of patients took pain relief medications, among them the majority of proton pump inhibitors. In the last 3 months, most of the patients submitted to the study presented here used PPI (42%), followed by NSAIDs (24.5%), with a total of 60% of patients using some pain relief medication.

Among them 35.29% reported improvement in pain with the use of the medication. The report of symptom improvement with its use is supported by studies

That show a large portion of patients with painful symptoms proving improvement of the condition with its use. In relation to other drugs, such as prokinetics, their efficiency still has controversial evidence in the literature, since, among the studies analyzed, one conducted in Germany in 2019 with family doctors showed that these drugs are one of the most used for such symptoms, being Phyto therapeutic in 88.2% of the time, PPI in 73.6% and prokinetics in 61.5%. While a bibliographic research published in 2019 concluded that acid suppressive therapy was able to reduce dyspeptic symptoms in 30-70% of patients, with greater benefit in epigastric pain and greater efficacy than proton pump inhibitors compared to H2-antagonists, also showing that prokinetic agents have variable efficiency, and therefore cannot be characterized as a reference for use.[17]

Their was study to be considered undertaken by Meineche-Schmidt and Krag in Denmark, and was published in 1997.[18]
In this study, patients with ulcer-like or reflux-like dyspeptic symptoms were randomised to treatment with omeprazole 20 mg once daily or cimetidine 400 mg twice daily if the patient had a verified medical history of peptic ulcer disease or reflux oesophagitis.

Some preliminary insights into the efficacy of proton pump inhibitors in the short term management of uninvestigated dyspepsia have come from two studies published by Jones and Baxter in 1997.[19] and by Jones and Crouch in 1999.[20] In the first of these, the proton pump

inhibitor lansoprazole 30 mg once daily was compared with ranitidine 150 mg twice daily in the treatment of acid related dyspepsia in general practice. This was a double blind, parallel group, randomised, multicenter study conducted in 32 centres in the UK; 213 patients were randomised to receive lansoprazole and 219 to receive ranitidine, both for four weeks. [20]

After two weeks, 55% of the lansoprazole treated patients and 33% of the ranitidine group were symptom free , with corresponding four week values of 69% and 44%, respectively.

Functional dyspepsia is often treated with prokinetic agents Prokinetic agents that have been used in ouer study include metoclopramide, domperidone. Metoclopramide is a dopamine receptor antagonist that readily crosses the blood brain barrier . Domperidone works similarly to metoclopramide, but has a more favorable side effect profile as it does not cross the blood brain barrier. Domperidone is available throughout Europe and Canada but is not approved. [21]

In the USA, making its use in US populations problematic. Cisapride has been withdrawn from most world markets because of rare fatal arrhythmias.[21]

Epidemiological studies performed in Basra like Asian , prevalence of uninvestigated dyspepsia was not related to gender . However, in iran population based studies demonstrated a higher prevalence of dyspepsia in women.[22]

The correlation between age and dyspepsia in Iran appears to be a controversial issue. Whilst some studies reported a direct correlation between age and dyspepsia,[23] others showed that the prevalence of dyspepsia decreases with age.[24] Previous studies in Asia could not show a correlation between dyspepsia and age.[22] Nonetheless, dyspepsia was reported to be more prevalent in younger age groups in European countries.[25]

CONCLUSION

1-Acidity and heart burn appear to be the major symptoms induced by drugs(NSAIDs) and smoking in patients with dyspepsia visiting pharmacies searching for treatment

2-Most pharmacist response to dyspeptic patients very well and offer advice. However, training programs are essential to get pharmacist with experience working within family practice

3-Antacid and omeprazole are the most drugs offered to patients to relief their symptoms followed by H2-receptors blocker

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