Govaresh/ Vol. 26, No.3, Autumn 2021; 170-175

Original Article

The Prevalence of Gastrointestinal and Liver Diseases in Patients Referring to the Subspecialty Clinic of Ziaeian Hospital in Tehran, Iran in 2019

Zahra Momayez Sanat[1,*] ,Mohammad Davari[2]

[1] Digestive Diseases Research Institute, Tehran University of Medical Sciences, Tehran, Iran
[2] Department of Internal Medicine , Tehran University of Medical Sciences, Tehran, Iran

ABSTRACT

Background:
The present study aimed to examine the prevalence of the diseases and the reasons for outpatient referral of gastrointestinal patients to the subspecialty gastroenterology center of Ziaeian Hospital in Tehran.

Materials and Methods:
In the present cross-sectional study, the main causes of outpatient referrals in 2019 were extracted from the data bank of Ziaeian Hospital. The final diagnosis of all patients is based on the first visit, subsequent referrals, and the diagnostic procedures performed.

Results:
The present study examined the data collected from 1072 patients. The results showed that 70% of the participants (756 patients) were female, and the patients in the age group of 41-50 years had the highest frequency accounting for 23.9% of the patients (259 persons). Besides, the most commonly diagnosed diseases in the whole population and both sexes were functional dyspepsia (35.72%), reflux (14.73%), irritable bowel syndrome (8.02%), and anal fissure (8.02%). Furthermore, the early onset symptoms were abdominal pain (44.8%), retrosternal pain and burning (12.7%), bleeding (8.1%), and defecatory disorders (7.5%).

Conclusion:
The findings of the study can have some implications for preventive planning and interventions and the allocation of health resources.

Keywords: Gastrointestinal and liver diseases, Functional dyspepsia, Reflux, Irritable bowel syndrome, Iran

please cite this paper as:
Momayez Sanat Z , Davari M. The Prevalence of Gastrointestinal and Liver Diseases in Patients Referring to the Subspecialty Clinic of Ziaeian Hospital in Tehran, Iran in 2019. *Govaresh* 2021;26:170-175.

Corresponding author:
Zahra Momayez Sanat , MD
Assistant Professor of Medicine,Digestive Diseases Research institute,Tehran University of Medical Sciences, Shariati Hospital , North Kargar St., Tehran, Iran
Tel : + 98 21 82415104
Fax : + 98 21 82415400
Email : z-msanat@sina.tums.ac.ir

Received : 30 Mar. 2021
Edited : 14 Sep. 2021
Accepted : 15 Sep. 2021

INTRODUCTION

Chronic diseases, including gastrointestinal diseases, account for about two-thirds of global deaths, and 54% of years passed with disability(1). In 2004, gastrointestinal and liver diseases were the eighth leading cause of death worldwide, accounting for 7.6% of all deaths (2). The prevalence of irritable bowel syndrome (IBS) worldwide has been reported to be 10-20% in adults and adolescents, with a higher rate in men than women (3). Besides, this disorder is

mostly found in adolescence and occurs before the age of 45, and is the second leading cause of absenteeism after a cold (4).

Gastrointestinal diseases affect 60 to 70 million Americans annually (5). For instance, in 2004, about 4.6 million hospitalizations, 72 million papillomas, and 236,000 deaths occurred from gastrointestinal diseases (6,7). Direct and indirect expenses on gastrointestinal diseases in the United States is estimated at $142 billion (8).

In Asia in 2015, 54.3% of deaths were due to cirrhosis and 72.7% due to liver cell carcinoma, and the prevalence of gastrointestinal reflux was estimated at 5% (9).

Gastrointestinal and liver diseases are among the most common diseases in Iran and the world. They are the most common causes of disability and the leading causes of death in Iran (10). Furthermore, these diseases were found to be the cause of 10% of all deaths in Iran in 2002 and 2004 (10-13). A review of studies conducted in Iran has shown that the estimated incidence of gastrointestinal reflux in men and women is 17 and 28 per 1000, and the rate of years of life lost with disability-adjusted life year (DALY) in this disease is 59 days per year. Gastric cancer is the most common gastrointestinal cancer (14), and the prevalence of the non-alcoholic fatty liver disease has been reported to be between 10-36%. Besides, cirrhosis and other liver diseases in 2017 caused the death of 5,400 people, i.e. 8.12 persons per 100,000 people (15), and this rate has approached about 8000 deaths per year in recent years (16).

A review of the existing literature indicates that the incidence of gastrointestinal and liver diseases is increasing, especially with age (3,15). Studies have also shown that these diseases impose a significant burden on patients, society, and the health system (10).

The first step in reducing diseases is to understand the number of patients, the course of diseases, and its impact on the health status of individuals and society (17) as planning by policymakers in the health care system of each country requires knowledge of the prevalence of diseases and priorities and determining their effect on disability and mortality based on evidence (18). An awareness of the prevalence and incidence, and pattern of diseases can optimize budget allocation, facilities, manpower, and specialists and regulate planning and interventions. Finally, such awareness contributes to assessing and monitoring the state of the health system. Accordingly, in this present study, we aimed to investigate the causes of outpatient referrals of gastrointestinal patients to the subspecialty gastrointestinal center of Ziaeian Hospital in Tehran in 2019.

MATERIALS AND METHODS

This is a cross-sectional descriptive study. The research population included all patients with medical records who were referred to the gastrointestinal subspecialty clinic of Ziaeian Hospital in Tehran in 2019. The hospital is located in district 17 and covers a population of about one million. The gastroenterology clinic was founded in 2019 .

The inclusion criterion was, having complete hospital records and the exclusion criteria were the medical records for patients with no definite diagnosis and patients who were referred only once and did not have a confirmed diagnosis. The data were collected from the patients' clinical records and documented information. Using the census method, the medical records of all patients who were referred to the subspecialty clinic of Ziaeian Hospital in 2019 were examined, with a total of 1072 participants. The main causes of outpatient referrals were extracted from the database of the subspecialty clinic of the hospital. The final diagnosis of all patients was based on the first visit, subsequent referrals, and following diagnostical procedures. The diagnosis of gastroesophageal reflux disease (GERD) was based on endoscopic evidence or the patient's symptoms. The diagnosis of IBS was made according to Rome's criteria.

The data were analyzed using SPSS software (version 20) via descriptive statistics, including tables and diagrams of frequencies and percentages. Limitation of the study: in this center, medical records were stored electronically. If a patient did not come back to continue the diagnostic process or the final diagnosis of the disease was not clear, they were taken out of the study. Also, only outpatients were observed, and inpatients or emergency ward patients were not included.

RESULTS

The descriptive results showed that 30% (316 patients) were male and 70% (756 patients) were female. The highest number of patients (23.9%, N=259) was in the age group of 41-50 years, and the lowest number (1.2%, N=14) was in the age group of 81-90 years. The most common diseases with the highest number of gastrointestinal and liver patients were functional dyspepsia affecting 383 patients, reflux with 158 patients, and IBS and anal fissure affecting 86 patients. Functional dysplasia, hemorrhoids, and acute gastritis were mostly seen in participants aged 31 to 40 years, while IBS, fissure, constipation, fatty liver, erosive duodenitis, and gastritis, and gastric ulcer were more common in the 5th decade. Reflux was more frequent in the 6th decade in this sample. Distribution among sexes was relatively the same according to table1.

DISCUSSION

The present study has explored the causes of referral and evaluated the most common gastrointestinal and liver diseases in patients referring to the subspecialty clinic of Ziaeian Hospital in 2019. Planning in health care systems requires knowledge of the prevalence of diseases to provide funding, allocate facilities and specialized personnel, and train them accordingly.

The most commonly observed diseases were functional dyspepsia (35%), reflux (14%), IBS (08%), and anal fissure (08%). Furthermore, most of the patients with functional dyspepsia were in the age groups of 31-40 and 41-50 years old. The highest number of patients (45 patients) developing GERD was the age group of 51-60 years. Besides, most patients with IBS and anal fissures aged 41-50 years. These findings are in line with the results of previous studies, as the prevalence of gastrointestinal diseases in Iranian studies has been reported 10% to 40% (13, 20-22). Besides, the prevalence of GERD was found to be between 10% to 20% in Western countries and 5% in Asian countries (23-25). Accordingly, it seems that the prevalence of gastrointestinal diseases has increased in recent years. A part of this increase could be due to a low-fiber, sedentary diet, high fat intake, tea, and, to a lesser extent, coffee consumption.

Following the present study, Ganji and colleagues (2009) found that the most common gastrointestinal and hepatic diseases were GERD, IBS, duodenal ulcer, non-ulcer dyspepsia, and chronic hepatitis B (10). Anoushirvani and others (2019) reported fatty liver disease as a common disease in Iran, which affected almost a third of the population of Iran, and this finding is consistent with the results of the present study that found fatty liver as the sixth most common disease among the patients under study (15). In another study, Qajarieh and co-workers (2015) examined the trend of gastrointestinal and liver diseases in Iran based on the global burden of these diseases from 1990 to 2010 and found a decrease in diarrhea, appendicitis, gastritis, and duodenal, pancreatic, and gallbladder diseases, as well as types of cirrhosis among adults. Accordingly, it can be said that the two studies were consistent (26).

The present study showed that the most common diseases observed in women were functional dyspepsia, reflux, anal fissure, and IBS, which are similar to men. The results of this study showed that women and men had the same patterns in gastrointestinal disorders, which is not in accordance with other studies (16,25-30). However, this is a descriptive cross-sectional study and cannot measure the susceptibility of the sexes to gastrointestinal disorders. A study conducted by Pourhoseingholi and colleagues (2010) on 30334 people showed that the prevalence of retrosternal symptoms was 8.6%, anal pain 1.7%, weight loss 1.4%, and heartburn 10%, as indicated in the present study (22).

Most gastrointestinal diseases are chronic and debilitating diseases that severely affect the quality of life of people with the disease. Depending on the severity of the symptoms of these diseases, the affected people will experience different degrees of life quality impairment. In a significant group of patients, these diseases cause absenteeism, disrupt interpersonal relationships, and even inhibit attending the gatherings and traveling, and in many studies, the quality of life of these patients is reported to be lower than the general population and healthy individuals (30).

This study did not focus on a specific population, and the data were collected from a hospital, thus cannot be generalized to the whole Iranian society, but can contribute to developing the policy of future

Table 1: The most common gastrointestinal and liver diseases by age and sex

Variabls	Age 18-40	Age 41-60	Age +61	Male (N=316)		Female (N=756)		Total (N=1072)	Prevalence (٪)
				Number	Prevalence (٪)	Number	Prevalence(٪)		
Functional dyspepsia	176	142	65	383	35.72	277	36.64	383	35.72
Reflux	58	87	13	158	14.73	114	15.07	158	14.73
Irritable bowel syndrome	35	31	20	86	8.02	62	8.20	86	8.02
Fissure	26	44	16	86	8.02	67	8.86	86	8.02
Constipation	28	41	15	84	7.83	60	7.93	84	7.83
Fatty liver	32	32	13	77	7.18	47	6.21	77	7.18
Hemorrhoids	22	14	6	42	3.91	26	3.43	42	3.91
Erosive duodenitis	7	18	5	30	2.79	19	2.51	30	2.79
Erosive gastritis	3	15	5	23	2.14	18	2.38	23	2.14
Gallstones	6	3	5	14	1.30	9	1.19	14	1.30
Hepatitis B	3	0	0	3	0.27	2	0.26	3	0.27
Duodenal ulcer	3	3	1	7	0.65	6	0.79	7	0.65
Esophageal cancer	0	0	1	1	0.09	0	0	١	0.09
Autoimmune hepatitis	1	0	0	1	0.09	0	0	1	0.09
Microscopic colitis	0	1	0	1	0.09	0	0	1	0.09
Celiac disease	3	0	0	3	0.27	2	0.26	3	0.27
Candidiasis of the esophagus	2	0	0	2	0.18	0	0	2	0.18
Gastric cancer	4	2	1	7	0.65	3	0.39	7	0.65
Hydatid cyst	0	1	0	1	0.093	0	0	1	0.093
Inflammatory bowel disease	3	1	1	5	0.46	4	0.52	5	0.46
Acute pancreatitis	3	0	0	3	0.27	3	0.39	3	0.27
Solitary rectal ulcer	1	0	0	1	0.093	0	0	1	0.093
Primary sclerosingcholangitis	1	0	0	1	0.09	0	0	1	0.09
Acute gastritis	10	4	2	16	1.49	13	1.71	16	1.49
Esophageal motility disorder	1	2	2	5	0.46	3	0.39	5	0.46
Colon cancer	2	2	3	7	0.65	4	0.52	7	0.65
Primary biliary cholangitis	0	1	0	1	0.09	0	0	1	0.09
Liver adenoma	1	0	0	1	0.09	1	0.13	1	0.09
Liver hemangioma	4	0	0	4	0.37	1	0.13	4	0.37
Metastatic liver cancer	0	0	2	2	0.18	2	0.26	2	0.18
Simple liver cyst	1	1	3	5	0.46	4	0.52	5	0.46
Gastric ulcer	4	7	1	12	1.11	9	1.19	12	1.11
Total	440	452	180	1072	100	756	100	1072	100

Table 2: **Frequency distribution of primary symptoms in the patients**

Symptoms	Number	Percentage
Abdominal pain	582	46.8
Retrosternal pain and burning	158	12.7
Rectal bleeding	101	8.1
Defecatory disorder	94	7.5
Anal pain	88	7
Abnormal liver function tests	93	6.6
Diarrhea	39	3.1
Bitter mouth	31	2.5
Weight loss	25	2
Anemia	19	1.5
Liver abnormality in ultrasound sonography	12	1
Dysphagia	10	0.8

planning in combination with previous studies.

CONCLUSION

The present study indicated that patients with gastrointestinal diseases were mainly in the age group of 21-50 years. The most common diseases among these people were functional dyspepsia, reflux, IBS, and anal fissure. Furthermore, most of the patients with functional dyspepsia were in the age group of 31-40, reflux in the age group of 51-60 years, and IBS and anal fissure syndrome among the patients aged 41-50 years. The most common symptoms in these patients were abdominal pain, retrosternal burning, and rectal bleeding.

CONFLICT OF INTEREST

The authors declare no conflict of interests related to this work.

REFERENCES

1. Salimzadeh H , Ardeshir Larijani F , Abedian S , Kalantar Motamedi SM , Malekzadeh MM , Mohaghegh H, et al . The trend of national and sub-national burden of gastrointestinal and liver diseases in iran 1990 to 2013, study protocol. *Arch Iran Med* 2014;17:33 - 53.
2. http://www.who.int/healthinfo/global_burden_disease/GBD_report_2004update_full.pdf.
3. Agrawal, A,Whorwell PJ. Irritable bowel syndrome: diagnosis and management. *BMJ* 2006; 332: 280-3.
4. Drossman A, Patrick DL, Whitehead WE, Toner BB, Diamant NE, Hu Yet al. Further validation of the IBS-QOL: a disease-specific quality-of-life questionnaire. *Am J gastroenterol* 2000;95:999-1007.
5. Everhart JE, Ruhl CE. The burden of digestive diseases in the United States part I: overall and upper gastrointestinal diseases. *Gastroenterology* 2009;136:376-86.
6. Russo MW , Wei JT, Thiny MT, Gangarosa LM, Brown A, Ringel Y, et al. Digestive and liver diseases statistics, 2004. *Gastroenterology* 2004;126:1448-53.
7. Shaheen NJ, Hansen RA, Morgan DR, Gangarosa LM, Ringel Y, Thiny MT, et al. The burden of gastrointestinal and liver diseases. *Am J Gastroenterology* 2006;101:2128-38.
8. Peery AF, Dellon ES, Lund J, Crockett SD, McGowan CE, Bulsiewicz WJ, et al.. (2012). The burden of gastrointestinal disease in the United States: 2012 update. *Gastroenterology*;143:1179-87.
9. Jung HK. Epidemiology of gastroesophageal reflux disease in Asia: a systematic review. *J Neurogastroenterol Motil* 2011;17:14-27.
10. Ganji A, Safavi M, Nasseri Moghadam S, Nouraei M, Merat S, Vahedi H, Malekzadeh R. A study of the frequency of various gastrointestinal and liver diseases in several referral centers in Tehran from 2001 to 2005. *J Gastroenterol* 2006;54: 38-55.
11. Sadjadi AR , Nouraie M, Mohagheghi MA, Mousavi-Jarrahi AR, Malekezadeh R, Maxwell Parkin D. Cancer occurrence in Iran in 2002, an international perspective. Asian Pac *J Cancer Prev* 2005;6:359-63.
12. Mahdavinia M, Bishehsari F, Ansari R , Norouzbeigi N, Khaleghinejad A, Hormazdi M, et al. Family history of colorectal cancer in Iran. *BMC Cancer* 2005;5:112.
13. Salis G. Systematic review: Epidemiology of gastroesophageal reflux disease in Latin America. *Acta Gastroenterol Latinoam* 2011;41:60-9.
14. Taghavi N, Nasrollahzadeh D, Merat S, Yazdanbod A, Hormazdi M, Sotoudeh M, et al. Epidemiology of upper gastrointestinal cancers in Iran: a subsite analysis of 761 cases. *World J Gastroenterol* 2007;13:5367-70.
15. Anushiravani A, Sepanlou SG. The burden of Liver Diseases: A Review from Iran. *Middle East J Dig Dis* 2019;11:189-91.
16. Saidi RF, Kazemaini SM, Malekzadeh R. Current challenges of liver transplantation in Iran. *Middle East J Dig Dis* 2018;10:45-9.
17. Mosadegh Rad AM, Esfahani P. Challenges of strategic planning in hospitals of Tehran province. *J Manag Strategi Health Syst* 2018;184-200.
18. Besharati R. Developing an operational planning model for hospitals affiliated to the Ministry of Health and Medical Education of Iran. *J Urmia Sch Nurs Midwif* 2019;17:154-67.
19. Sánchez de Medina F, Romero-Calvo I, Mascaraque C, Martínez-Augustin O. Intestinal inflammation and mucosal

barrier function. *Inflamm Bowel Dis* 2014;20: 2394-2404.

20. Khoshbaten M, Hekmatdoost A, Ghasemi H, Entezariasl M. Prevalence of gastrointestinal symptoms and signs in north-western Tabriz, Iran. *Indian J Gastroenterol* 2004;23:168-70.

21. Khoshbaten M. Gastroesophageal reflux disease in north-western Tabriz, Iran. Indian journal . *Indian J Gastroenterol* 2003;22:138-9.

22. Pourhoseingholi A, Safaee A, Pourhoseingholi MA, Boghi-mi-Dehkordi B, Habibi M, Vahedi, M ,et al. Prevalence and demographic risk factors of gastrointestinal symptoms in Tehran province. *Italian J Public Health* 2012;7:42-6.

23. Ronkainen J, Aro P, Storskrubb T, Lind T, Bolling-sterne-vald E, Junghard O, et al. Gastro-oesophageal reflux symp-toms and health-related quality of life in the adult general population–the Kalixanda study. *Alim Pharmacol Ther* 2006;23:1725-33.

24. Ganji A, Malekzadeh F, Safavi M, Nassri-Moghaddam S, Nourie M, Merat S,et al. Digestive and liver disease statis-tics in Iran. *Middle East J Dig Dis* 2009;1:56-62.

25. Sorbi D, McGill DB, Thistle JL, Therneau TM, Henry J , Lindor KD. An assessment of the role of liver biopsies in asymptomatic patients with chronic liver test abnormalities. *Am J Gastroenterol* 2000;95: 3206-10.

26. Sepanlou SG, Malekzadeh F, Naghavi M, Forouzanfar MH, Shahraz S, Moradi-Lakeh M, et al. The trend of Gastroin-testinal and Liver Diseases in Iran: Results of the Global Burden of Disease Study, 2010. *Middle East J Dig Dis* 2015;7:121-37.

27. Abedian S, Soleimani HA, Saberifiroozi M, Malekzadeh R. Common Digestive and Liver Diseases among 5880 Patients Admitted to Shariati Hospital, Tehran, Iran during 2000-2009. *Middle East J Dig Dis* 2012;4:28-33.

28. Drossman DA, Li Z, Andruzzi E, Temple RD, Talley NJ, Thompson WG, Richter JE. US householder survey of func-tional gastrointestinal disorders. *Dig Dis Sci* 1993;38:1569-80.

29. Sonnenberg A, Koch TR. Epidemiology of constipation in the United States. *Dis Colon Rectum* 1989;32:1-8.

30. Dehkordi AH, Solati K. The effects of cognitive-behavioral therapy and drug therapy on quality of life and symptoms of patients with irritable bowel syndrome. *J Adv Pharm Tech Res* 2017;8:67-72.