

Hypochlorhydria syndrome by antacid drugs for gastric hyperacidity patients more likely creates to digestive disorders

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Abstract

The research aimed study the hypochlorhydria by antacid drugs for gastric hyperacidity patients more likely creates to digestive disorder at Baghdad Teaching Hospital/medical city and Gastroenterology and Hepatology Teaching Hospital in Baghdad city (consultant clinics), find out the relationship between demographic characteristic and items related with digestive disorder. A purposive (non-probability), the sample included (250) patients, from (40-70) years old. A descriptive study carried out from December 10th 2019 to the August 25th 2021. A questionnaire was constructed for the purpose of the study, which was a consisted of (2) part. The 1st part included the demographic characteristics and the 2nd part included the items related with digestive disorder. Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (correlation coefficient). Scores, Perpson, lycart scale analysis that include, t-test, and stepwise multiple regression. The result of the study confirmed that the mean of score for the age of sample was (62.5) year, most of them male urban, high score for socio-economic status and overweight for body mass index scale. Significant symptoms, dietary pattern, bad habit, past history and antacid drugs to digestive disorder. The study recommended that it is necessary to following the suitable nutrition and some bad habits to prevent digestive disorder lead to complication, every patients with hypochlorhydria by antacid drugs for gastric hyperacidity must have a guide notebook about the favorable for natural patients with hypochlorhydria by antacid drugs for gastric hyperacidity, to describe the impact of hypochlorhydria by antacid drugs on digestive disorder because of faulty digestion and absorption, much of the impetus for recognizing the importance of dietary intervention.

Key words: Hypochlorhydria, antacid drugs, gastric hyperacidity and digestive disorder

Introduction:

Antacids are a group of drugs used to treat conditions caused by the Hyperchlorhydria that is produced by the stomach. The stomach naturally secretes an acid called hydrochloric acid that helps to break down proteins. This acid causes the contents of the stomach to be acidic in nature, with a pH level of 2 or 3 when acid secretion is active. (pH levels are a measure of acidity in the stomach, the lower the number, the greater the acidity.) The stomach, duodenum, and esophagus are protected from acid by several protective mechanisms.

When there is too much acid or protective mechanisms are inadequate, the lining of the stomach, duodenum or esophagus may become damaged by the acid, giving rise to inflammation and ulcerations and their various gastrointestinal symptoms such as; (Nausea, Abdominal pain and Heartburn (due to gastroesophageal reflux disease or GERD) ^[1].

Antacids reduce acidity by neutralizing (counteracting) acid, reducing the acidity in the stomach, and reducing the amount of acid that is refluxed into the esophagus or emptied into the duodenum. Antacids also work by inhibiting the activity of pepsin, a digestive enzyme produced in the stomach that is active only in an acid environment and, like acid, is believed to be injurious to the lining of the stomach, duodenum, and esophagus ^[2].

If the patients were taken a drugs of antacid after a meal, (approximately 1 hour afterward), antacids reduce pH levels measure of acidity in the stomach acid for at least three hours since food from the meal slows the emptying of the antacid (and food) from the stomach ^[3].

It is important and interesting to discuss the use of antacids drug with a physician or pharmacist, especially if used in combination with other prescribed medications so as to avoid drug interactions ^[4].

Antacids are used commonly for symptoms such as; [heartburn, abdominal pain (sometimes described as the sour stomach), and nausea resulting from a number of conditions such as; (inflammation or acid-peptic ulcers of the esophagus (esophagitis), stomach (gastritis), and duodenum (duodenitis)] ^[5].

Antacids uses made deficiency or insufficient of hydrochloric acid levels in the stomach. Stomach secretions are made up of hydrochloric acid, several enzymes, and a mucus coating that protects the lining of stomach. Hydrochloric acid helps the body to break down, digest, and absorb nutrients such as protein. It also eliminates bacteria and viruses in the stomach, protecting the body from infection. Low levels of hydrochloric acid can have a profound impact on the body's ability to properly digest and absorb nutrients. Uses antacid drugs to treated gastric hyperacidity can cause disorder and impairment to the gastrointestinal (GI) system such as digestive disorder ^[6].

Stomach acid is also a crucial part of the immune system. The acid barrier of the stomach during normal states of health easily and quickly kills bacteria and other bugs that enter the body. It also prevents bacteria in the intestines from migrating up and colonizing the stomach. Appropriate stomach acid levels are crucial for our immune system and for adequate nutrient status, both of which support total health ^[7].

Hydrochloric acid (HCL) is an important gastric secretion that enables the body to break down proteins, activate important enzymes and hormones, and protect against bacterial

overgrowth in the gut. hypochlorhydria (low stomach acid) are common digestive problems. Healthy levels of hydrochloric acid in the stomach are essential to overall health and wellness [8].

Stomach acids work to help your body absorb essential nutrients such as zinc, calcium, magnesium and iron, along with the vitamins C, B9, B12, A and E. When your body is unable to absorb these vitamins and minerals, a host of illnesses and chronic conditions can develop [9].

Aim of study the hypochlorhydria by antacid drugs for gastric hyperacidity patients more likely creates to digestive disorder and to find out the relationship between demographic characteristic and digestive disorder for patients with hypochlorhydria by antacid drugs for gastric hyperacidity [10].

Methods and patients:

A purposive (non-probability) sample of (250) patients with a diagnosis of digestive disorder from (40-79) years old, who were selected from Baghdad Teaching Hospital/medical city and Gastroenterology and Hepatology Teaching Hospital in Baghdad city (consultant clinics), had been chosen. The study was conducted in order to correlation between hypochlorhydria by antacid drugs for gastric hyperacidity patients and digestive disorder through the period from December 10th 2021 to the August 25th 2022, from outpatients of consultant clinics of Baghdad Teaching Hospital/medical city and Gastroenterology and Hepatology Teaching Hospital in Baghdad city (Consultant Clinic) in Baghdad city. For the purpose of the present study, a questionnaire was constructed by the researcher to study the variable for hypochlorhydria by antacid drugs for gastric hyperacidity patients and digestive disorder. Data were analyzed through descriptive statistical approach (frequency and percentage) and inferential statistical approach (correlation coefficient) Scores, Perpson, likert scale analysis that include, t-test, and stepwise multiple regression.

A questionnaire was constructed for the purpose of the study. It was composed of (2) major parts, and overall items, which were included in the questionnaire, were (29) items. Part I consist of (5) items related with demographic data for hypochlorhydria by antacid drugs for gastric hyperacidity patients which consisted of age, gender, residential area, socio-economic status and body mass index. Part II consist of (6) items which included the symptoms of digestive disorder, dietary pattern, antacid drugs, bad habit **during eating foods, past history** and antacid drugs for gastric hyperacidity patients. Reliability was determined through a pilot study. The data was analyzed through the application of the descriptive statistical, (Frequency and Percentage) and the inferential statistical data analysis approach Mean of score, Standard Deviation, Chi-square, and Person correlation coefficient, all the patients under treatment and diagnosis by physician.

Results:

Table (1): Distribution of the study sample (250) by their demographic characteristics such as (age, gender, residential area, socio-economic status and Body Mass Index) and association between demographic data for hypochlorhydria by antacid drugs for gastric hyperacidity patients and digestive disorder.

No.	Age	Frequency	%	X ² obs.	X ² crit.	df	P.value
1.	40-49	30	12	34.000 ^a	7.814	3	< 0.050
2.	50-59	65	26				
3.	60-69	95	38				
4.	70-79	60	24				
Total		250	100				
No.	Gender	F	%	36.864 ^b	3.841	1	< 0.050
1.	Male.	173	69.2				
2.	Female.	77	30.8				
Total		250	100				
No.	Residential area	%	%	73.984 ^b	3.841	1	< 0.050
1.	Urban	193	77.2				
2.	Rural	57	22.8				
Total		250	100				
No.	Socio-economic status	F	%	18.200 ^c	5.991	2	< 0.050
1.	High score (150 – 121)	110	44				
2.	Middle score (120 – 90)	85	34				
3.	Low score (89 and less)	55	22				
Total		250	100				
No.	Body Mass Index	%	%	136.440 ^d	3.841	1	< 0.050
1.	Under weight (0-18.5)	16	6.4				
2.	Normal weight (18.6-25)	20	8				
3.	Overweight (25.1-30)	104	41.6				
4.	Obese (30.1- 40)	85	34				
5.	Morbidity obese(40.1-70)	25	10				
Total		250	100				
(a., b., c., d.) = 0 cells (.0%) have expected frequencies less than 5.							

* The mean of age is (62.5).

The distribution of the matched demographic characteristics out of this table indicates that the majority of the patients was (60-69) years old who were (38%) of the study. Most of them were males (69.2%), living in urban accounted (77.2%) for item related with residential area. Regarding of the socio-economic status scale accounted (44%) was high score and body mass index accounted (41.6%) was overweight.

The table shows that there was high significant association between age, gender, residential area, socio-economic status scale and body mass index.

Table (2): Mean of scores for items symptoms of gastric hyperacidity patients and the association between gastric hyperacidity patients and digestive disorder.

No .	Items	3	2	1	M.S.	Sig.
	The Symptoms of Digestive Disorder.	Always	Some time	Never		
1.	A burning sensation in your chest (heartburn).	140	88	22	2.4	S.
2.	Heartburn usually after eating.	177	53	20	2.6	H.S.
3.	Hyperchlorhydria pain is that in severe cases, it can also occur in the night.	180	49	21	2.6	H.S.
4.	Heartburn or burning pains are in the upper stomach region (just behind the breastbone or the center point below the ribcage).	120	50	80	2.1	S.
5.	Acid reflux which may cause after meal.	180	33	37	2.5	H.S.
6.	Trouble swallowing (dysphagia).	184	48	18	2.6	H.S.
7.	Sensation of a lump in your throat.	202	28	20	2.7	H.S.
8.	Headache.	120	45	85	2.1	S.
9.	If you have nighttime acid reflux, you might also experience an ongoing cough.	40	20	190	1.4	N.S.
10.	Inflammation of the vocal cords (laryngitis).	178	48	24	2.6	H.S.
11.	Shortness of breath.	180	50	20	2.6	H.S.
12.	Constipation alternating with diarrhea.	80	21	149	1.7	S.
13.	Abdominal bloating.	180	52	18	2.6	H.S.
14.	undigested food in stool.	50	25	175	1.5	S.
15.	Feeling an uncomfortable fullness in the upper abdomen after eating, nausea, and vomiting.	177	55	18	2.6	H.S.
16.	High levels of stress/anxiety may trigger hyperacidity.	154	40	56	2.3	S.
17.	Pain better from defecation.	125	88	37	2.3	S.
18.	pain developing from 1 to 2 hours after eating food.	173	31	46	2.5	H.S.
19.	A general malaise feeling following meals.	161	39	50	2.4	S.
20.	Passing gas.	123	57	70	2.2	S.
21.	Belching.	125	38	87	2.1	S.
22.	Halitosis (bad breath).	106	49	95	2.0	S.
23.	Feel tired after eating.	196	20	34	2.6	H.S.
24.	Difficulty sleeping, as result of presence of excess acidity in the stomach.	69	37	144	1.7	S.
25.	The pain is relieved by consumption of food; therefore known as hunger pain.	120	58	72	2.1	S.
Total		3540	1122	1588	2.2	S.
X² obs. =62.024^c		df = 24		X² crit. = 36.415		P < 0.050

The table indicated that the mean of scores is highly significant on items (2, 3, 5, 6, 7, 10, 11, 13, 15, 18, 23), significant on items (1, 4, 8, 12, 14, 16, 17, 19, 20, 21, 22, 24, 25), no significant on items (9) for items symptoms of gastric hyperacidity patients.

The table also shows that the association between gastric hyperacidity patients and digestive disorder was significant.

Table (3): Mean of scores for items of the dietary pattern for gastric hyperacidity patients and the association between gastric hyperacidity patients and digestive disorder.

No.	Items	3	2	1	M.S.	Sig.
	I prefer to having	Always	Some time	Never		
1.	red meat products such as steak, roast beef and hamburgers.	180	50	20	2.6	H.S.
2.	three irregular meals/a day.	210	32	8	2.8	H.S.
3.	spicy foods, such as hot peppers and cured meats.	125	87	38	2.3	S.
4.	drinking carbonated beverages.	200	32	18	2.7	H.S.
5.	Eating spicy and oily foods all the time.	145	27	78	2.2	S.
6.	drinking too much of a beverage while eating.	199	13	38	2.6	H.S.
7.	eating enough protein.	225	15	10	2.8	H.S.
8.	eating too many starchy carbohydrates.	205	8	37	2.6	H.S.
9.	excessive use of caffeine like tea.	212	14	24	2.7	H.S.
10.	inadequate water intake.	41	19	190	1.4	N.S.
11.	smoking.	189	21	40	2.5	H.S.
12.	drink alcohol.	40	13	197	1.3	N.S.
13.	food inauspiciousness.	101	32	117	1.9	N.S.
14.	lack of exercise.	46	17	187	1.4	N.S.
15.	consume too much coffee.	98	45	107	1.9	S.
Total		2216	425	1109	2.24	S.
X² obs. =87.368^c df = 13 X² crit. = 22.362 P < 0.050						

This table shows that the mean of scores is highly significant on item (1, 2, 4, 6, 7, 8, 9, 11), significant on items (3, 5, 15) and the remaining was no significant on items (10, 12, 13, 14).

The table also shows that the association between dietary pattern and digestive disorder was significant.

Table (4): Mean of scores for items of the bad habits during eating foods for gastric hyperacidity patients and digestive disorder.

No.	Items	3	2	1	M.S.	Sig.
	Bad habits	Always	Some time	Never		
1.	Eating meals too quickly.	120	32	98	2.0	S.
2.	Swelling food during meal without digestion.	112	47	89	2.0	H.S.
3.	Sleeping directly after meal intake.	116	54	80	2.1	H.S.
4.	Eating late at night.	103	63	84	1.9	S.
5.	Laying down after eating	149	66	35	2.4	H.S.
6.	Drinking water during eating meal.	144	56	50	2.3	H.S.
Total		744	318	436	2.11	S.
X² obs. =23.768^c df = 5 X² crit. = 11.070 P < 0.050						

This table shows that the mean of scores is highly significant on item (2, 3, 5, 6), and significant on items (1, 4).

The table also shows that the association between dietary pattern and digestive disorder was significant.

Table (5): Mean, Std. Deviation, Variance and Chi-Square for past history.

No.	Past history	Yes	%	No	%	Total	Mean	Std. D	Variance
1.	Diabetes Mellitus	72	29.3	178	14.1	250	1.8360	.37102	.138
2.	Hypertension	64	26.1	186	14.8	250			
3.	Peptic ulcer	25	10.2	225	17.9	250			
4.	Angina pectoris	18	7.3	232	18.4	250			
5.	Myocardial infraction	15	6	235	18.7	250			
6.	Arteriosclerosis	51	20.8	199	15.8	250			
Total		245	100	1255	100	1500			
X ² obs. =112.896 ^b		df = 5		X ² crit. = 11.070		P < 0.050			

This table shows that the mean of scores, Standard deviation, Variance and Chi-Square.

The table also shows that the association between past history and digestive disorder was a strong highly significant.

Table (6): Mean of scores for items of the antacid drugs for gastric hyperacidity patients and digestive disorder.

No.	Items	3	2	1	M.S.	Sig.
	Antacid drugs	Always	Some time	Never		
1.	Sodium bicarbonate.	66	23	161	1.6	S.
2.	Aluminum hydroxide	126	37	87	2.1	H.S.
3.	Calcium carbonate	98	22	130	1.8	S.
4.	Magnesium hydroxide	108	66	76	2.1	H.S.
Total		398	148	454	1.9	S.
X ² obs. =39.656 ^c		df = 3		X ² crit. = 7.815		P < 0.050

This table shows that the mean of scores is highly significant on item (2, 4) and significant on items (1, 3).

The table also shows that the association between antacid drugs and digestive disorder was significant.

Table (7): Pearson correlation between age, gender, residual area, socio-economic status, body mass index, symptoms, dietary patterns, bad habits, past history and antacid drugs.

Variable		Age	Gender	Residential area	SES Scale	B. M. I.	Symptoms	Bad Habits
Age	Co.		.726**	.717**				.861**
	Sig. No	-----	C1 .000 250	C2 .000 250	-----	-----	-----	C3 .000 250
Gender	Co.	.726**						.737**
	Sig. No	C4 .000 250	-----	-----	-----	-----	-----	C5 .000 250
Residential area	Co.	.717**	.815**					.601**
	Sig. No	C6 .000 250	C7 .000 250	-----	-----	-----	-----	C8 .000 250
SES Scale	Co.	.887**	.797**	.823**				.887**
	Sig. No	C9 .000 250	C10 .000 250	C11 .000 250	-----	-----	-----	C12 .000 250
Body Mass Index	Co.	.872**	.674**	.612**	.782**			.807**
	Sig. No	C13 .000 250	C14 .000 250	C15 .000 250	C16 .000 250	-----	-----	C17 .000 250
Symptoms	Co.	.811**	.892**	.835**	.889**	.791**		.862**
	Sig. No	C18 .000 250	C19 .000 250	C20 .000 250	C21 .000 250	C22 .000 250	-----	C23 .000 250
Dietary patterns	Co.	.774**	.941**	.775**	.848**	.766**	.955**	
	Sig. No	C24 .000 250	C25 .000 250	C26 .000 250	C27 .000 250	C28 .000 250	C29 .000 250	
Bad Habits	Co.	.861**	.737**	.601**	.887**	.807**	.862**	.874**
	Sig. No	C30 .000 250	C31 .000 250	C32 .000 250	C33 .000 250	C34 .000 250	C35 .000 250	C36 .000 250
Past History	Co.	.682**	.295**	.241**	.442**	.721**	.360**	.493**
	Sig. No	C37 .000 250	C38 .000 250	C39 .000 250	C40 .000 250	C41 .000 250	C42 .000 250	C43 .000 250
Antacid Drugs	Co.	.856**	.686**	.559**	.876**	.807**	.836**	.973**
	Sig. No	C44 .000 250	C45 .000 250	C46 .000 250	C47 .000 250	C48 .000 250	C49 .000 250	C50 .000 250

C = Cell, Co. = Correlation coefficient, Sig. = Significant (2- tailed), N. = Number of sample.
SES = (Socio-economic status Scale), B. M. I. = Body Mass Index.

This table shows that the relationship in the all of the cells.

(C1 It means relationship between age and gender, C13 It means relationship between age of Body Mass Index and ...etc.).

**. Correlation is significant at the 0.01 level (2-tailed).

Table (4) indicated that there was strong positive relationship in cell (25, 29, 50, 3, 7, 9, 11, 12, 13, 17, 18, 19, 20, 21, 23, 27, 30, 33, 34, 35, 36, 44, 47, 48, 49, 1, 2, 4, 5, 6, 10, 16, 22, 24, 26, 28, 31, 41, 8, 14, 15, 32, 37 and 45), positive relationship in cell (46, 40, 43, 42, 39 and 38).

Discussion:

Table (1); show the distribution of the study sample (250) by their demographic characteristics such as (age, gender, residential area, socio-economic status and Body Mass Index) and association between demographic data for hypochlorhydria by antacid drugs for gastric hyperacidity patients and digestive disorder. The mean of age was (62.5).

The distribution of the matched demographic characteristics out of this table indicates that the majority of the patients was (60-69) years old who were (38%) of the study. Most of them were males (69.2%), living in urban accounted (77.2%) for item related with residential area. Regarding of the socio-economic status scale accounted (44%) was high score and body mass index accounted (41.6%) was overweight.

The table also shows that there was high significant association between age, gender, residential area, socio-economic status scale and body mass index.

The prevalence of upper gastrointestinal (GI) diseases is increasing in subjects aged 65 years and over. Pathophysiological changes in esophageal functions that occur with aging may, at least in part, be responsible for the high prevalence of gastro-esophageal reflux disease (GERD) in old age. GERD symptoms are different in the elderly compared to young or adult patients ^[5].

Age is becoming an increasing factor in GERD prevalence, many populations across the world are living longer, in turn this is causing an increase in health issues including GERD. GERD has been linked with older age and appears to be more prevalent in males. A recent study in Pakistan investigated a local population of GERD patients and reported on the higher age range of patients having a more impaired quality of life. The main reason is that the older generation have a weaker esophageal acid clearance and in turn acquire decreased defense mechanisms on the esophageal mucosa ^[1].

Aging causes muscles to weaken. This includes weakening in your lower esophageal sphincter (LES). When you eat, food goes down your throat, through your esophagus, into your stomach. The LES is the circular muscle that controls the opening between the esophagus and the stomach. When you're not eating, the LES is closed, which keeps stomach juices from flowing back into the esophagus. As you age, the LES can weaken and stop functioning properly ^[2].

In United States, estimated that by 2020, >16% of people in the will be > or =65 years of age and that nearly 20 million will be >85 years of age. Aging imparts a variety of physiologic changes in the oropharynx, esophagus, and stomach that increase the risk for esophageal and gastrointestinal disorders ^[6].

Excess weight can be due to a number of reasons including hormone imbalances, poor eating habits, unhealthy lifestyle or other underlying health conditions. Many people who are overweight consume large meals. Large meals can exert pressure on the lower esophageal sphincter, causing it to partially open and allow stomach acids to fill into the esophagus. Losing excess weight with a safe, sensible diet and moderate exercise can help improve acid reflux in those who are overweight ^[4].

Table (2) shows that the mean of scores for items symptoms of gastric hyperacidity patients and the association between gastric hyperacidity patients and digestive disorder.

The table indicated that the mean of scores is highly significant on items (2, 3, 5, 6, 7, 10, 11, 13, 15, 18, 23), significant on items (1, 4, 8, 12, 14, 16, 17, 19, 20, 21, 22, 24, 25), no significant on items (9) for items symptoms of gastric hyperacidity patients.

The table also shows that the association between gastric hyperacidity patients and digestive disorder was significant.

Heartburn, also called acid indigestion, or acid reflux, is the most common symptom of GERD. the patient feeling of discomfort that develops just starts behind and below the breastbone and can rise up to neck and throat. Heartburn is a burning chest pain. It can last as long as 2 hours. It often feels worse after eat. Lying down or bending over can also cause heartburn. Another common symptom of GERD is bringing swallowed food up again to the mouth (regurgitation). Some people can have trouble swallowing ^[9].

The person may experience a sour taste in the mouth from stomach acids. This taste, along with the frequent burping and coughing associated with reflux and GERD, can create nausea and even vomiting in some cases ^[10].

Table (3) shows that the mean of scores for items of the dietary pattern for gastric hyperacidity patients and the association between gastric hyperacidity patients and digestive disorder.

This table shows that the mean of scores is highly significant on item (1, 2, 4, 6, 7, 8, 9, 11), significant on items (3, 5, 15) and the remaining was no significant on items (10, 12, 13, 14).

The table also shows that the association between dietary pattern and digestive disorder was significant.

GERD is a chronic digestive system disease caused by multiple factors and multiple pathways. We found that various dietary and lifestyle factors affect the occurrence of GERD. Among GERD, RE, NERD, and BE, the associated diet and lifestyle factors are different. There were also differences in the diet- and lifestyle-related factors related to GERD according to region. Whether such differences are the cause of the differences in incidence requires. Whether the differences in diet and lifestyle structure associated with age and sex are also reasons for the difference in incidence ^[16].

Table (4) show the mean of scores for items of the bad habits during eating foods for gastric hyperacidity patients and digestive disorder.

This table shows that the mean of scores is highly significant on item (2, 3, 5, 6), and significant on items (1, 4).

The table also shows that the association between dietary pattern and digestive disorder was significant.

Acid reflux or gastroesophageal reflux (GER) is the result of a backward flow of stomach acid into the esophagus. This is the tube that connects your stomach to your throat. It can be caused for a variety of reasons, including a poor eating habits, food intolerances, bad habit for dietary pattern, obesity, stress, or dietary and lifestyle choices. in this condition the person must be modification dietary pattern ^[14].

If your condition is caused by dietary and lifestyle choices, changing your habits can relieve your symptoms ^[15].

Changing the eating habits which it's best to eat several small meals instead of two or three large meals and wait 2 to 3 hours after eat, not to be lie down. at late-night snacks aren't a good idea. Avoid spicy foods, foods that have a lot of acid (like tomatoes and oranges), and coffee can make GERD symptoms worse in some people ^[13].

Table (5): Mean, Std. Deviation, Variance and Chi-Square for past history.

This table shows that the mean of scores, Standard deviation, Variance and Chi-Square.

The table also shows that the association between past history and digestive disorder was a strong highly significant.

The past history of gastrointestinal diseases encompasses disorders of the esophagus, stomach, pancreas, gall bladder, and biliary tract, as well as jaundice. Among the esophageal diseases, *gastroesophageal reflux disease* consists of reflux of gastric contents through an incompetent lower esophageal sphincter causing symptoms. It may be associated with esophageal inflammation and, in a minority of patients, bleeding and stricture formation. An esophageal stricture is a fibrotic narrowing generally of its lower end as a consequence of injury, usually from reflux esophagitis. Tumors of the esophagus, both extrinsic and intrinsic, can produce narrowing of the esophageal lumen, leading to symptoms that closely mimic those of benign stricture. Motor disorders of the esophagus are a group of disorders characterized by motor dysfunction, some being primary esophageal diseases such as achalasia, diffuse spasm, and presbyesophagus, while others reflect esophageal manifestations secondary to other diseases ^[12].

Table (6): Mean of scores for items of the antacid drugs for gastric hyperacidity patients and digestive disorder.

This table shows that the mean of scores is highly significant on item (2, 4) and significant on items (1, 3).

The table also shows that the association between antacid drugs and digestive disorder was significant.

Chronic gastrointestinal (GI) complaints are often treated with proton pump inhibitors (PPIs), antibiotics, and other medications that offer temporary relief of acute symptoms. Although these drugs are prescribed to provide promising results, new research indicates the drug treatments often mask unresolved physiological problems and cause further complications. Complex GI cases require a comprehensive assessment and a multifaceted approach. This case reports on the development of PPI-induced hypochlorhydria secondary to a PPI prescription for unresolved gastritis in a patient with irritable bowel syndrome ^[11].

Deficiency of hydrochloric acid in the stomach by using antacid drugs make impairment of stomach secretions are made up of hydrochloric acid, several enzymes, and a mucus coating that made defect to protect the lining of stomach. Hypochlorhydria is a deficiency of hydrochloric acid in the stomach. Stomach secretions are made up of hydrochloric acid, several enzymes, and a mucus coating that protects the lining of your stomach. Hydrochloric acid helps body to break down, digest, and absorb nutrients such as protein. It also eliminates bacteria and viruses in the stomach, protecting your body from infection ^[17].

Low levels of hydrochloric acid can have a profound impact on the body's ability to properly digest and absorb nutrients. if the patient continue to use antacid drugs to do hypochlorhydria can cause damage to the gastrointestinal (GI) system, infections, and a number of chronic health issues ^[16].

Increased heartburn happens associated with frequent cases of reflux or heartburn. Also, medications are a big factor. As we age and are diagnosed with more minor and moderate health problems, our needs for medication increase. Many medication classes as a whole, such as antidepressants and blood pressure medications, are linked to increased heartburn ^[19].

Table (7) Pearson correlation between age, gender, residual area, socio-economic status, body mass index, symptoms, dietary patterns, bad habits, past history and antacid drugs.

The table indicated that there was strong positive relationship in cell (25, 29, 50, 3, 7, 9, 11, 12, 13, 17, 18, 19, 20, 21, 23, 27, 30, 33, 34, 35, 36, 44, 47, 48, 49, 1, 2, 4, 5, 6, 10, 16, 22, 24, 26, 28, 31, 41, 8, 14, 15, 32, 37 and 45), positive relationship in cell (46, 40, 43, 42, 39 and 38).

The signs and symptoms of Hypochlorhydria are similar to those which people with Hyperchlorhydria (high stomach acid levels) have, both patients and medical providers

frequently treat undiagnosed low stomach acid with antacids. This can be a dangerous practice; not only does it leave the root cause of the symptoms undiagnosed, resulting in the continuation of the malnutrition and uncomfortable side effects of low stomach acid, but the use of antacids actually also serves to further suppress the level of acid in the stomach, making the problem of Hypochlorhydria even worse over time ^[20].

It is uncommon for patients with Hypochlorhydria by using antacid drugs to spend years looking for a correct diagnosis for their digestive disorders, leaving them vulnerable to both the negative effects of malnutrition and the increased risk of parasitic infections of the stomach and the gut. Unfortunately, the widespread availability of antacids and the misinformation about the symptoms of high and low stomach acid levels has led to rampant overuse and misuse of both OTC and prescription antacids among adults in America and the rest of the world ^[18].

Certain foods and drinks are associated with the incidence of reflux and studies have shown that consuming large amounts of fatty foods and chocolate cause episodes of reflux. Drinks involving caffeine and alcohol are also strongly associated with causing reflux. Alcohol and cigarette smoking exacerbate reflux by weakening lower esophageal sphincter pressure. Studies have also reported that chronic stress might have a role in GERD disease. Some study defined stress as being a measure of adverse psychosocial influences in adult life and reported findings where participants who had been exposed to more life stresses were more complainant of GERD symptoms. Stress can heighten the feeling of intra-esophageal acid exposure and can have an influence on health related behaviours for instance smoking, alcohol consumption, diet or physical activity, therefore influencing the risk of reflux. Studies have shown a correlation between reflux and advanced levels of physical activity, with symptoms noted as heartburn, regurgitation and belching ^[22].

GERD is one of the most prevalent health issues worldwide, the incidence and our knowledge of the disease has greatly increased over the last 50 years. Interaction between environmental factors and genetic predisposition, changes in diet and physical activity have added to its prevalence. A higher prevalence of GERD could have some reflection on the fact that life expectancy has now increased worldwide. Although a far firmer understanding is known today on GERD's pathology and symptoms, there is still more research that can be done for the development of non-invasive diagnostic tests and novel treatments. A clearer understanding of reflux across all countries would improve how accurate the prevalence of GERD really is. The more known about gastroesophageal disease and who is at the greatest risk will help to educate people on their lifestyle choices and how to manage their GERD symptoms, improving their quality of life and in turn preventing GERD and GERD related diseases ^[21].

Conclusions:

The result of the study confirmed that the mean of score for the age of sample was (62.5) year, most of them male, urban, high score for socio-economic status and overweight for body mass index scale. The study shows a significant for items related to symptoms, dietary pattern, bad habit, past history and antacid drugs to digestive disorder.

Recommendation:

- ❖ Guide notebook, to identify the dietary pattern and how to control and prevent bad habit to prevent digestive disorder which are lead's to complication.
- ❖ Avoid antacid drugs to improve normal sequence of digestion and absorption is dependent upon the anatomic and physiologic integrity of the upper gastrointestinal tract.
- ❖ The key to improving our digestion is governorate our stomach acid by reducing antacid drugs by alternative substances nutrient.
- ❖ adequate HCl production is dumping of acidic chyme into the small intestine is necessary to stimulate the release of hormones, pancreatic enzymes, and bile. In order to have optimal absorption of several nutrients, including folic acid, ascorbic acid, beta-carotene, non-heme iron, and some forms of calcium, magnesium and zinc.
- ❖ Eating healthy fermented foods and beverages, and cutting out processed foods. When we couple that with Body Ecology's digestive enzymes, we'll be able to kick indigestion to the curb and finally have the health and energy we have been hoping for.
- ❖ Education program about using over-the-counter antacids counter antacids can neutralize stomach acid and actually make our digestion worse, leaving us at risk for malnutrition and mineral deficiencies.

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