Peptic Ulcer among Patient with Ischemic Heart Disease at Taif City

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Abstract
Objectives: A peptic ulcer is a common problem that occurred because of H. pylori infection and the use of nonsteroidal anti-inflammatory drugs. Epigastric pain is the most common symptom. It is characterized by burning sensation occur after meals. This study was conducted to assess peptic ulcer among patient with ischemic heart disease at TAIF city. **Methods:** We conducted a cross sectional study on 426 ischemic heart disease patients. The data were collected through interview with the patients and self-report questionnaire which include a set of socio-demographic variables (gender, age, sex, weight, city, smoking, drinking tea and coffee) and clinical variables (systolic, diastolic, pulse, respiratory rate, oxygen saturation) in 1/8/2017 to 17/9/2017 and approved by King Faisal medical complex in Taif city. Both genders above 40 years were included and excluded patients below them and patients without ischemic heart disease. Statistical analysis was performed using SPSS. **Results:** Of the 426 ischemic heart disease patients at TAIF city who were investigated, 229 (53.8%) were female and 197 (46.2) were male. The mean age was 64.5 years (SD=12), ranging from 25 to 100 years. As for BMI, 297(69.7%) had overweight and obese. The mean systolic was 143.49 (SD=22.9). The mean diastolic was 76.31. In total, 24.2% of patients were classified as Peptic ulcer and 75.8% had Non-Peptic ulcer symptoms. No statistical significance was found between the mean of Non-Peptic ulcer and Peptic ulcer patients in terms of oxygen saturation, systolic, diastolic, age, pulse and respiratory rate. A significant statistical relation was found for City that they lived in (P=.027), type of oils that he/she use it for cooking at home (P=.008), stress (P=0.002) and sex (P=.032) for Non-Peptic ulcer symptoms and Peptic ulcer symptoms. **Conclusion:** This study demonstrated a low prevalence of peptic ulcer among ischemic heart disease patients at TAIF city. Insomnia was associated with gender, type of oil, stress and city that they lived in but no significant association with BMI, taking aspirin, doing exercise and smoking.
Keywords: Ischemic heart disease, Awareness, Attitude, Knowledge, Taif and Saudi Arabia.

Introduction:

Peptic ulcer can be defined as mucosal lesions that penetrate the muscularis mucosae layer and form a cavity surrounded by acute and chronic inflammation. Gastric ulcers are in the stomach, often along the lesser curvature in the transition zone from corpus to antrum mucosae. Duodenal ulcers are in the duodenal bulb [1].H. pylori infection and the use of nonsteroidal anti-inflammatory drugs (NSAIDs) are the predominant causes of peptic ulcer disease in the United States, accounting for 48 and 24 percent of cases, respectively. Smoking increases the risk of ulcer recurrence and slows healing [2]. In other researches, Peptic ulcers can be defined as open sores in the upper part of the digestive tract that can cause stomach pain or stomach upset, and that can lead to internal bleeding. There are two types of peptic ulcers: Gastric ulcers, which form on the lining of the stomach, And Duodenal ulcers, which form on the lining of the upper part of the small intestine

(called the "duodenum"). The most common causes of peptic ulcers are infection with the bacterium Helicobacter pylori (H. pylori) and long-term use of aspirin and certain other painkillers, such as ibuprofen. NSAIDs, including aspirin, significantly increase the risk of adverse gastrointestinal events, particularly those related to gastric and/or duodenal mucosal injury: erosions, ulcers and ulcer complications, especially bleeding. Patients taking low-dose aspirin for the prevention of a cardiovascular event, such as myocardial infarction or thrombotic stroke, are also at increased risk of gastrointestinal injury and complications. In asymptomatic patients taking low-dose aspirin (75-325 mg/day) for ≥ 3 months, endoscopically observed ulcers or erosions. The risk of upper gastrointestinal bleeding events is dependent on the dose of aspirin [3,4].

Literature review:

Study was done at 2001 among Spanish patents to determine whether patients with ischemic heart disease (IHD) are at higher risk for peptic ulcer (PU). The mean age of the patients was 72.7 years and 70% were men. PU was found in 18.7% of the patients with IHD [5]. In Russia, Study was done at 2002 to examine the clinical current of stomach and duodenal ulcer disease in a combination with the ischemic heart disease (IHD). It showed that persons with IHD developed stomach ulcers by (56%) more often than duodenal ulcers; in male the ulcers were met 3.5 times more often than in female [6]. In the same year, a study was done in Spain showed that a Cardiovascular patient on long-term low-dose aspirin have a stable risk of major UGIB [7]. At 2005 study was done in New York showed use of aspirin as independent risk factors for multiple PUD. The OR for urgent postoperative endoscopy due to a major gastrointestinal event was 9.9 and the OR for active peptic ulcer with stigmata of recent bleeding was 6.9 in the group of patients with IHD who were not submitted to evaluation for dyspepsia prior to elective heart surgery and that study suggested In areas with a high prevalence of H. pylori infection, endoscopy and a "search and treat" strategy for IHD patients before elective cardiac surgery should significantly reduce the need for urgent postoperative endoscopy due to major gastrointestinal events [8] . Study was done in 2007 result in total of 152 patients, 72.4% men and 27.6% women were analyzed. Of these, 31 patients had ischemia and were placed in group A and 121 patients did not have ischemia and were in group B. Independent multivariate predictors of myocardial ischemia were history of triple vessel disease, lower diastolic blood pressure, lower hematocrit, and higher blood urea nitrogen. Patients with myocardial ischemia had significantly longer hospital length of stay and higher in-hospital mortality than did those without myocardial ischemia [9]. In Japan at 2008 study was done and result in Mucosal injuries were found in 62 of 101 (61.4%) low-dose aspirin users and three of 30 (10%) non-aspirin users. There were significantly more mucosal injuries among low-dose aspirin users than among the non-users, Gastro duodenal ulcers were found in 19 of 101 (18.8%) low-dose aspirin users compared with one of 30 (3.3%) non-aspirin users. The frequency of mucosal injuries was not associated with the duration of aspirin treatment

[10], however after one year from this study there is another study done in 2009 In aimed to investigate through endoscopic examination the frequency of gastro duodenal disorder associated with buffered and enteric-coated aspirin (ECA) , result in Mucosal defects were found in 92 of 190 (48.4%) users of low-dose aspirin and 6 of 46 (13.0%) non users, There were significantly more mucosal defects among users of low-dose aspirin than among those using no aspirin. Mucosal defects were found in 54 of 98 (60.7%) users of buffered aspirin (BA), whereas 38 of 101 (37.6%) users of ECA had mucosal defects. Users of ECA had significantly fewer erosions than did those of BA. The frequency of ulcer is similar between BA users and ECA users [11].

However, 2014 there was a study done in chorea aimed to study the incidence of gastrointestinal complications in patients who received single or dual antiplatelet resulted During the follow-up period, 11 patients had duodenal ulcer; the event rate was 2.02% in the aspirin alone group and 9.47% in the dual antiplatelet group [12].

Aim of the study:

It was to identify the incidence of peptic ulcers disease (PUD) among Ischemic heart disease (IHD) patients.

Methods:

The questionnaire contains 27 questions. The first seven questions were about life style (exercise, Stress, job and work ,smoking), from question 8 to question 17 is about food habit, from question 18 to question 20 is general questions, from question 21 to question 22 is about drugs and the last five questions are about peptic ulcer.

Statistical analysis of the data:

SPSS software version 21 was used for the statistical analysis of the data. Descriptive statistics were used to summarize the basic features of the collected data. Group differences were assessed using a t test to compare the mean independent sample values. When the assumption of the t-test not valid, we used the nonparametric Mann–Whitney U test. The Chi-square test was used to examine the relation between two qualitative variables. In all tests, P ≤ 0.05 was considered statistically significant.

Results:

Of the 426 ischemic heart disease patients at TAIF city who were investigated, 229 (53.8%) were female and 197 (46.2) were male. In total, 352(82.6%) were lived in TAIF city and

74(17.4%) were lived outside TAIF city. As for BMI, 29(6.8%) had under Wight, 297(69.7%) had overweight and obese and 100(23.5%) had Average Wight. The mean age was 64.5 years (SD=12), ranging from 25 to 100 years. The mean systolic was 143.49 (SD=22.9). The mean diastolic was 76.31. The mean pulse was 78.00. The mean respiratory rate was 19.51. The mean oxygen saturation was 94.30.

Table 1 Socio-demographic variables and Clinical variables of study ischemic heart disease Patients (n=426)

	N (%)
Gender	
Male	197(46.2)
Female	229(53.8)
City	
TAIF	352(82.6)
outside TAIF	74(17.4)
BMI	
under Wight	29(6.8)
Average Wight	100(23.5)
overweight and obese	297(69.7)
Age (years), mean ± SD (range)	64.52± 12.025(25-100)
systolic , mean ± SD (range)	143.49 ±22.906(10-221)
diastolic , mean ± SD (range)	76.31 ±11.241(43-113)
pulse , mean ± SD (range)	78.00 ±12.840(50-135)
respiratory rate , mean ± SD (range)	19.51±4.508(11-81)
oxygen saturation, mean ± SD (range)	94.30 ±3.505(62-100)

We had 5 questions about symptoms of peptic ulcer .If the responser have 3 symptoms or higher , the responser have a peptic ulcer . If the responser have 2 symptoms or less , the responser doesn't have a peptic ulcer .

    Figure.1 distribution of peptic ulcer among patients with ischemic heart disease:
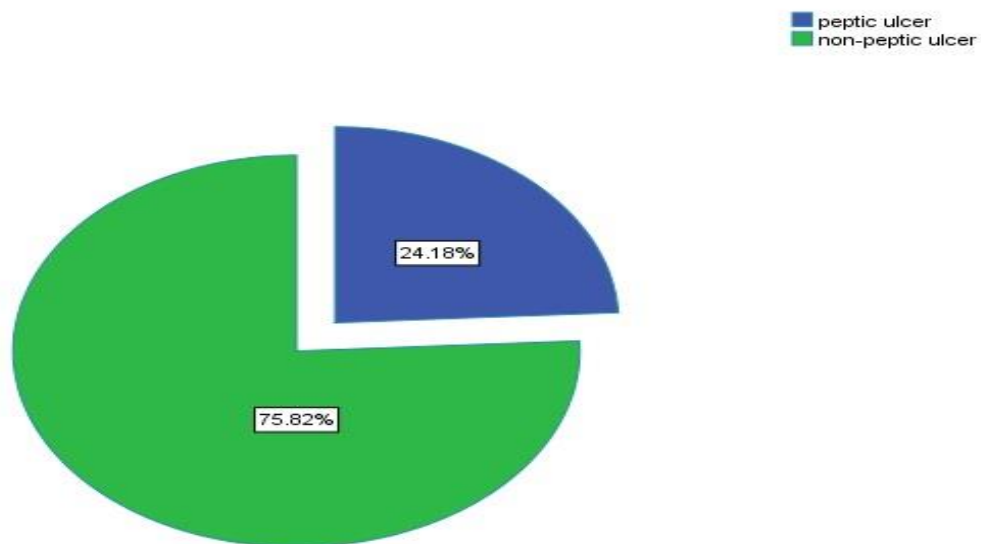
The peptic ulcer and non-peptic ulcer had normal distribution, so we used T test. No statistical significance was found between the mean age of peptic ulcer (mean=64.08; SD=11.004) and non-peptic ulcer patients (mean=64.66; SD=12.3). The mean of pulse in

peptic ulcer patients (mean=79.73; SD=12.921) was higher than the mean of Non-Peptic ulcer patients (mean=77.44; SD=12.785), but no significant statistical difference was detected. FromTable2, it is obvious that there is no statistically significant difference between Non-Peptic ulcer and Peptic ulcer patients in terms of oxygen saturation, systolic, diastolic, age, pulse and respiratory rate. At a level of significance =0.05.

Table .2 Mean and standard deviations of clinical characteristics between Non-Peptic ulcer and Peptic ulcer patients.

	Peptic ulcer		Non-Peptic ulcer		*P*
	Mean	SD	Mean	SD	
Systolic	143.02	22.723	143.64	22.997	.812
Diastolic	76.69	11.159	76.20	11.282	.698
Pulse	79.73	12.921	77.44	12.785	.116
respiratory rate	19.96	6.473	19.37	3.670	.246
oxygen saturation	94.12	4.166	94.36	3.272	.536
Age	64.08	11.004	64.66	12.345	.671

Table 3 summarizes the relation between Non-Peptic ulcer and Peptic ulcer groups in ischemic heart disease patients and some variables. For males, 158 were diagnosed as non-peptic ulcer and 39 suffered from peptic ulcer. For females, 165 were diagnosed as non-peptic ulcer and 64 suffered from peptic ulcer. Females suffered from peptic ulcer more often than males. For patients who have average weight, 76 were diagnosed as non-peptic ulcer and 24 suffered from peptic ulcer. For patients who have overweight and obese, 224 were diagnosed as non-peptic ulcer and 73 suffered from peptic ulcer. Patients who have overweight and obese suffered from peptic ulcer more often than patients who have average weight. For patients who take aspirin for years, 272 were diagnosed as non-peptic ulcer and 85 suffered from peptic ulcer. For patients who didn't take aspirin, 38 were diagnosed as non-peptic ulcer and 13 suffered from peptic ulcer. Patients who take aspirin for years suffered from peptic ulcer more often than patients who didn't take aspirin. For patients who take any type of (NSAIDS) medication more than eight years, 48 were diagnosed as non-peptic ulcer and 20 suffered from peptic ulcer. For patients who didn't take any type of (NSAIDS) medication, 230 were diagnosed as non-peptic ulcer and 67 suffered from peptic ulcer. Patients who didn't take any type of (NSAIDS) medication suffered from peptic ulcer more often than patients who take any type of (NSAIDS) medication. For patients who do exercise, 106 were diagnosed as non-peptic ulcer and 35 suffered from peptic ulcer. For patients who don't do exercise, 217 were diagnosed as non-peptic ulcer and 68 suffered from peptic ulcer. Patients who don't do exercise suffered from peptic ulcer more often than patients who do exercise. For patients who use vegetable oil, 272 were diagnosed as non-peptic ulcer and 82 suffered from peptic ulcer. For patients who don't use oil, 12 were diagnosed as non-peptic ulcer and 12 suffered from peptic ulcer. Patients who use vegetable oil suffered from peptic ulcer more often than patients who don't use oil. For patients who live in TAIF, 274 were diagnosed as non-peptic ulcer and 78 suffered from peptic ulcer. For patients who live outside TAIF, 49 were diagnosed as non-peptic ulcer and 25 suffered from peptic ulcer. Patients who live in TAIF suffered from peptic ulcer more often than patients who live outside TAIF. For smoker patients, 30 were diagnosed as non-peptic ulcer and 8 suffered from peptic ulcer. For nonsmoker patients, 293 were diagnosed as non-peptic ulcer and 95 suffered from peptic ulcer. Nonsmoker patients suffered from peptic ulcer more often than smoker patients. For patients who have stress, 101 were diagnosed as non-peptic ulcer and 49 suffered from peptic ulcer. For patients who have no stress, 222 were diagnosed as non-peptic ulcer and 54 suffered from peptic ulcer. Patients who have no stress suffered from peptic ulcer more often than patients who have stress. A significant statistical relation was found was found for City (P=.027), type of oils that he/she use it for cooking at home (P=.008) and sex (P=.032) for Non-Peptic ulcer symptoms and Peptic ulcer symptoms. Other demographic characteristics (BMI, taking aspirin, taking NSAIDS, doing exercise and smoking were not associated

statistically with a peptic ulcer diagnosis at a level of significance of 0.05.

Table .3 Associations regarding some variables between Non-Peptic ulcer and Peptic ulcer groups in ischemic heart disease patients

		Peptic ulcer N	Non-Peptic ulcer N	P
Sex	Male	39	158	.032
	Female	64	165	
BMI	under Wight	6	23	.896
	Average Wight	24	76	
	overweight and obese	73	224	
Did you take Aspirin before? If yes for how long?	NO	13	38	.886
	YES, weeks	0	1	
	YES, months	5	12	
	YES, years	85	272	
Did you take any type of(NSAIDS) medication? If yes, how many times per month?	NO	67	230	.526
	YES, one to three	6	22	
	YES, four to eight	10	23	
	YES, more than eight	20	48	
Do you do exercises every day at least 20 min?	yes	35	106	.458
	no	68	217	
Which type of oil does use it for cooking at home?	Don't use oil	12	12	.008
	Vegetable oil	82	272	
	Animal oil	9	39	
City	TAIF	78	274	.027
	outside TAIF	25	49	
Are you smoking?	Yes	8	30	.403
	No	95	293	
Have you stresses most of the time?	Yes	49	101	.002
	No	54	222	

Discussion:

To our knowledge, this is the first study which evaluated the prevalence of peptic ulcer among ischemic heart disease patients at TAIF city. Results demonstrated that taking aspirin medication were associated statistically with a peptic ulcer diagnosis that support another study, reveals gastroduodenal injuries even in low-dose aspirin. There were significantly more mucosal injuries among low-dose aspirin users than among non-users[10]. Another study suggested that gastroduodenal ulcers among low-dose aspirin users, both administration of buffered and enteric-coated aspirin, Users of enteric-coated aspirin had significantly fewer erosions than did those of buffered aspirin[11]. Another study reveals that dual antiplatelet had higher incidence of gastric ulcers compared with aspirin alone[12].Our findings are against the results of previous study demonstrated that Peptic ulcer was strongly associated with using of non-aspirin NSAIDs of any type during the 3 months [13]. Results revealed that life events stress associated statistically with a peptic ulcer diagnosis at a level of significance of 0.05. In another study, results manifested a strong association between life events stress and peptic ulcer disease [14]. Our study can form basis for further studies and awareness programs regarding how to deal with life style, food habit, drugs to avoid peptic ulcer disease.

Conclusion:

This study demonstrated a low prevalence of peptic ulcer among ischemic heart disease patients at TAIF city. Insomnia was associated with gender, type of oil, stress and city that they lived in but no significant association with BMI, taking aspirin, doing exercise and smoking.

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