Effect of Ramadan Fasting Upon Perforated Peptic Ulcer Patients: A Descriptive Analysis

تأثير صيام رمضان في مرضى تثقب القرحة الهضمية

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الخلاصة

خلفيةالبحث: إنثقاب القرحة الهضمية قليلة الحدوث نسبيا ولكنها تهدد الحياة حيث تتراوح نسبة الوفاة منها بين ١٠%-٤٠% ومع أن السبب الشائع للقرحة الهضمية هو جرثومة H.Pylori, فان شيوع تعاطي مضادات الإلتهاب غير الستيرويدية و التدخين و الضغط العصبي للحياة الحديثة تجعل من الصعب تحديد عامل سببي محدد لتلك الحالة.

الهدف : الهدف من الدراسة هو تقييم العوامل المؤثرة لانثقاب القرحة الهضمية عند الصائمين.

المنهجية:أجريت هذه الدراسة للمرضى الداخلين الى مستشفى الطوارئ ومستشفى السليمانية التعليمي والبالغ عددهم ٣١٢ حالة (٢٤٦ رجال و ٦٦ نساء) المصابين بإنثقاب القرحة الهضمية خلال الفترة من بداية شهر شعبان حتى نهاية شهر شوال مرورا بشهر رمضان الكريم و لعشر سنوات متتالية من عام ٢٠٠٦ الى ٢٠١٥ ميلادية.بإستعمال التحليل التوضيحي كاي سكوير تيست لتحديد العلاقة الإحصائية ما بين التغييرات البحثية.

النتائج : عدد الحالات نسبة الى الأشهر كانت أعلى في شهر رمضان و بالنسب التالية :١٦.٦ مريض في رمضان و ٧.٣ مريض في كل من شعبان و شوال. وكذلك كانت النسبة أعلى في الصائمين وكانت العوامل المسببة قد لعبت دورا أكبرفي هذه النتائج.

الإستنتاج : وجدت الدراسة أن نسبة الإصابة بإنثقاب الامعاء أعلى بين الذين لديهم عوامل مسببة مثل أعمار الشباب البالغين ، و لكن تبدأ مبكرة في غير الصائمين من الذكور،ولم يكن هنالك فارق بين المجموعتين للذين يتعاطون مضادات الالتهاب غير الستيرويدية أو الذين يعانون من سوء الهضم. إن الذين لديهم القرحة الهضمية سابقة كانت قد شخصت بواسطة عملية تنظير المعدة والإثني عشري أكثر عرضة للإنثقاب . صيام أيام متتالية و ليست طول فترة النهار فقط تزيد إحتمال إنثقاب الامعاء.

التوصيات : توصي هذه الدراسة بتوعية الناس الذين لديهم عوامل مسببة وإعلامهم بالمخاطر،و كذلك هؤلاء بحاجة الى رعاية خاصة لتجنب مثل تلك المضاعفات، و توصي بإجراء دراسات أخرى حول الموضوع.

ABSTRACT

Background: Perforated peptic ulcer (PPU) is relatively rare, but life threatening with the mortality varying from 10% to 40%. While common causes of peptic ulcer disease are H. Pylori, increased inadvertent use of NSAIDS, smoking and stress of modern life, the specific etiologic agent cannot be incriminated in the causation of its perforation.

Objective: The aim of this study is to evaluate the effect of perforated peptic ulcer in fasting Muslims.

Methods: This prospective analysis was conducted for the risk factors associated with perforated peptic ulcer (PPU) in patients attending Surgical Emergency hospital &Sulaimaniyah Teaching Hospital on 312 cases (246 male & 66 females) during the period of one month before Ramadan (Shaban), holy Ramadan and one month after Ramadan (Shawal) for ten successive years from 2006 to 2015. Descriptive analysis and Chi square test was used to find an association between studying variables.

Result: The number of PPU per month was higher in Ramadan, 16.6 patients per month vs. 7.3 patients per each other month and also high among group 1 fasting patients. Predisposing factors played a major role in these differences.

Conclusion: This study found that the incidence of PPU is relatively high among people who have predisposing factors, including young adults age, but earlier in non-fasting people , male gender, but no difference between the two groups in those using non -steroidal anti-inflammatory drugs, history of dyspepsia. Those patients have previous peptic ulcer disease diagnosed on esophagogastroduodenoscopy more prone to perforation. Long period day after day fasting, but not daytime length duration may increase PPU.

Recommendations: This study recommends that the people with these risk factors must be well informed and need special care to avoid such complications. This study also suggests further studies regarding this subject.

Keywords: Peptic ulcer perforation, risk factors, Ramadan fasts, duration of fasting, Shawal, Shaban.

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Introduction

Islam is the world's second largest religion out of 1·6 billion peoples[1]. Ramadan is the ninth lunar month of the Muslim year, during which it is obligatory for all healthy adults to observe a fast (refrain from eating, drinking, smoking and engaging in sexual activities) from sunrise to sunset[2]. After sunset they consume a large meal called 'Iftar' and the last meal they consume is 'Suhur' just before 'Fajr' (dawn).The food during Ramadan is basically similar to the ordinary food consumed during the other 11 months, except that a large quantity is taken at Iftar and Suhur instead of several meals during the day [3].

Perforated peptic ulcer (PPU) is relatively rare, but life-threatening with the mortality varying from 10- 40% [4]. It is the commonest cause of death resulting from surgical abdominal emergency next to intestinal obstruction[5]. One specific etiological agent cannot be incriminated in the causation of this particular disease. Common causes are H. Pylori, increased inadvertent use of Non-Steroidal Anti Inflammatory Drugs (NSAIDS), smoking and stress[6]. Yet few studies are found which refers to types of anti-inflammatory drugs that predispose to PPU especially among fasting Muslims.

In the developing world, PPU occurs is young with male predominance, patients present late, and there is a strong association with smoking, while in the west the patients tend to be elderly and there is a high incidence of ulcerogenic drug ingestion[7]. Many studies have been done on this topic, most of them from developing Muslim world and most of these reports found a statistical significant association of Ramadan fast with PPU especially in those studies with large cohorts[8-11].

The aims & objectives of this study are to study the risks and predisposing factors for perforated PPU disease in general and comparing fasting to non-fast people.

Patients and method

Study design:

A prospective study was conducted, which involves taking a cohort of subjects and watching them over 3 months as performed on 312 cases (246 male & 66 females) during the period of one month before Ramadan (Shaban), holy Ramadan and one month after Ramadan (Shawal) for ten successive years from 2006 to 2015, including all patients admitted with abdominal pain and proved to be perforated peptic ulcer. The comparison was done between the perforations in the fasting month of Ramadan & non fasting month before and after Ramadan. Patients were diagnosed on the basis of clinical, radiological findings & confirmed by exploratory laparotomies except in one case that was treated conservatively. The patients were divided into two groups; group 1 the fasting group (139) and group 2 non-fasting patients (group 2=173). The two groups were compared to identify the effect of Fasting on peptic ulcer perforation

Setting: Surgical Emergency hospital &Sulaimaniyah Teaching Hospital

Study analysis:

Data were analyzed through by using SPSS-V21 (statistical package for social science-Version 21). At the beginning, descriptive statistic (frequencies and percentages) and inferential statistic like Chi square test was used to find an association between studying variables. A P-value of <0.05 was considered to be statistically significant.

RESULT:

During the study period of three successive month periods of 10 years (30 months included), a total of 312 patients admitted with perforated peptic ulcer.

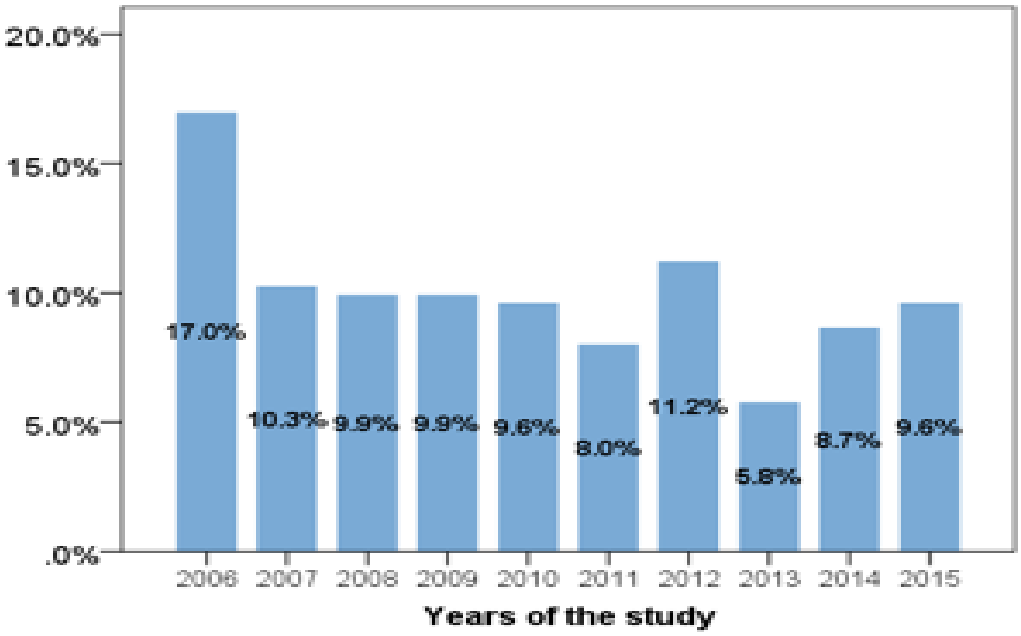

Figure-1-Three month's incidence of PPU patients admitted from 2006 to 2015

The highest number of the patients admitted in 2006 (17%) & least in 2013 (5.8%). Mean 31.2 for the three months of each year and 10.4 for each month.

Table(1):Socio-demographic comparison among all PPU.

Variables	Fasting Non fast		Fasting		Total		Chi square P values
	Non-fast	%	Fasting	%	total	%	
Age							
Less than 20	13	7.5	11	7.9	24	7.7	
20-29	34	19.7	19	13.7	53	17	
30-39	23	13.3	23	16.5	46	14.7	0.003
40-49	29	16.8	32	23.0	61	19.6	
50-59	29	16.8	22	15.8	51	16.3	
60-69	21	12.1	17	12.2	38	12.2	
70 and more	24	13.9	15	10.8	39	12.5	
Gender							
Male	138	79.8	108	77.7	246	78.8	0.651
Female	35	20.2	31	22.3	66	21.2	
Lunar month							
Shaaban	81	46.8	0	0.0	81	26.0	
Ramadan	34	19.7	132	95.0	166	53.2	0.00001
Shawwal	58	33.5	7	5.0	65	20.8	
Occupation							
Manual laborers	50	50	38	27.3	88	28.2	
Housewife	30	30	29	20.9	59	18.9	
Farmer	13	13	7	5.0	20	6.4	0.961
Officials; clerks & govern. servants	22	22	21	15.1	43	13.8	
students	11	11	10	7.2	21	6.7	
Retired	22	22	15	10.80	37	11.9	
Others	25	25	19	13.7	44	14.1	
Residence							
Host community - city	58	33.5	67	48.2	125	40.1	
Host community - rural	82	47.4	61	43.9	143	45.8	0.019
Other city	24	13.9	8	5.8	32	10.3	
IDP	7	4.0	3	2.2	10	3.2	
Refugees	2	1.2	0	0.0	2	0.6	

Table 1 shows that among the total PPU, fasting patients were139 (44.6%) versus non fasting patients were 173 (55.4%). Peptic ulcer perforation increased during Ramadan by 166 (53.2%) then followed by Shaban, 81(26%) and least in Shawal 65 (20.8%).

In terms of the mean of perforations during 10 months of Ramadan admissions of the 10 years of the study period were (16.6) but for Shaban and Shawal combined, each month during the remaining 20 months of the 10 year study period were 7.3 patients (Shaban 8.1 &Shawal 6.5). This concludes that there were 2.3 more likely PPU in Ramadan.

Although in Ramadan larger numbers of perforations were admitted but not all of they were fasting. Only 132 (79.5%) of the 166 cases were fasting and 34(20.5%) were not fasting.None of the patients were fasting among those admitted in Shaban but

7/65(11%) cases of these were fasting in Shawal.

Peak total perforation age group is 40-49 years 61(19.6%). Range is 13-92 years of age. Peak age among group 1 is the fourth decade, but in group 2 patients was the second decade of life. These differences were highly significant at p= 0.003. Most of the perforations were at the active, productive age of life, while only quarter of the patients were above 60 years of age and another quarter were below 30 years of age.

Regarding gender distribution among patients with PPU; Male: Female ratio of 3.7:1, group one (M: F 3.5:1) and group two (M; F 4:1) with no significant difference between the two groups. Manual labors were more prone to perforations 88 (28.2%) than other groups followed by housewives 59(18.9%) but there was no significant difference among the two groups. The rural habitants were on the top of the list 143(45.8%). A significant difference found that in group 1 the city habitants were more prone to perforation 67(48.2%) than rural areas and vice versa for group 2, 82 (47.4%). Forty-two Patients (13.5%) are from other cities outside the Kurdistan region; a quarter of them internally displaced persons and the remaining were from areas of conflict most of these were more or less under stress.

Table (2): Risk factors among fasting, non-fast and total patients

Risk factors	Fasting				Total	%	Chi square P values
	Non fast	%	Fasting	%			
Dyspepsia							
No	68	39.3	71	51.1	139	44.6	0.038
Yes	105	60.7	68	48.9	173	55.4	
Non-Steroidal Anti-inflammatory drugs							
No	51	29.5	60	43.2	111	35.6	0.009
Yes	117	67.6	79	56.8	196	62.8	
Un known	5	2.9	0	0.0	5	1.6	
Smoker							
Nonsmokers	88	50.9	85	61.2	173	55.4	0.069
Smokers	85	49.1	54	38.8	139	44.6	
Diabetes Mellitus							
No	166	96.0	133	95.7	299	95.8	0.905
Yes	7	4.0	6	4.3	13	4.2	
Hypertension							
No	163	94.2	130	93.5	293	93.9	0.799
Yes	10	5.8	9	6.5	19	6.1	
Ischemic Heart Diseases							
No	165	95.4	137	98.6	302	96.8	0.112
Yes	8	4.6	2	1.4	10	3.2	
Family History of peptic ulcer diseases							
No	143	82.7	113	81.3	256	82.1	0.755
Yes	30	17.3	26	18.7	56	17.9	
Alcohol							
Nondrinker	157	90.8	137	98.6	294	94.2	0.002
Drinker	16	9.2	2	1.4	18	5.8	

Table 2 shows that Dyspepsia, smoking, chronic illnesses & family history of peptic ulcer disease are of no significant differences in both groups. Only 18 (5.8%) of the total PPU (2 in the first group &16 in the second group) were alcoholic. Although the number of alcohol drinkers is low with perforations in a second group 16(9.2%) but significance than in group one 2 (1.4%) with P value of 0.002. Previously oesophago-gastro-duodenoscopy (OGD) has been done in 46 (14.7%) of the total patients, with positive

peptic ulcer diseases in 40 (87%) of the scooped-patients. For group 1 patients 40 (28.8%) have previous oesophago-gastro-duodenoscopy (OGD) & peptic ulcer disease found in 36 (90%) of them in contrast to group 2 patients 4 (66.6%).

Using nonsteriodal anti-inflammatory drugs (NSAIDS) were positive in 196(62.8%) of the total patients within the last two weeks either regularly or irregularly. Using NSAID in group one was 79 (58.6%) and group two was 117 (67.6%) of P value 0.009 is highly significant. (Findings in table 2)

Diclofenac (from Anthranilic acid group) is the most popular (NSAID) medicine used on the top of the list 93(47.5%). After that Acetic acid derivatives (16.4%) followed by Enolic acid (9.7%) groups of the drug.

Anti- peptic ulcer drugs are irregularly used only in 15 cases (5%) of the total. Taking Suhur found in 139 (92%) of the fasting patients.

From 249 patients who have erected Chest -X -Ray, 198(79.5%) have gas under the diaphragm. Perforations in the duodenumt were found in 285 (91.3 %) of total cases, gastric pre-pyloric region 25(8%) & one case of stomach ulcer perforation of gastro-jujenostomy site. All biopsy results of gastric ulcers were benign. Finally one patient treated conservatively the perforation site not known.

Figure(2) graph line of fasting PPU patients admitted during the Ramadan days.

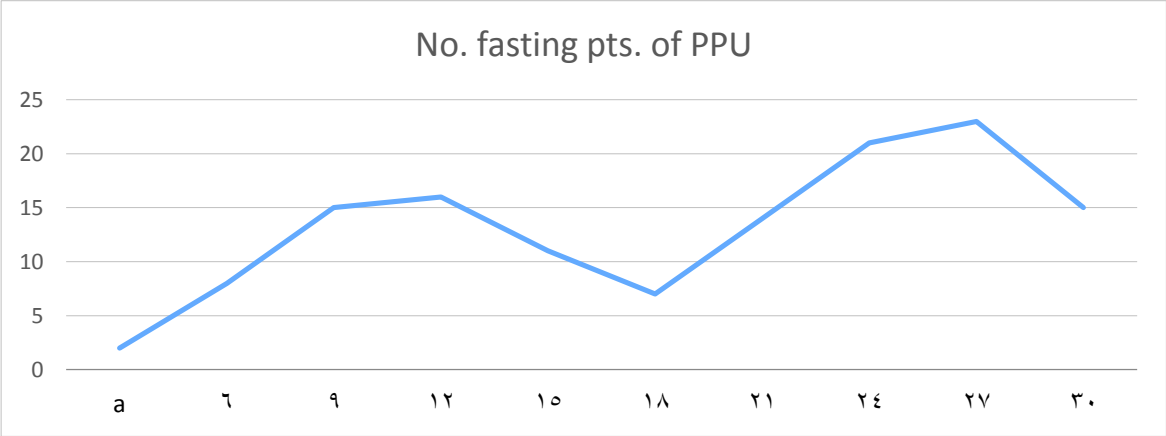

Figure 2 found that the first five years fasting periods collectively was shorter than the second five years. Of 132 fasting patients of Ramadan 79 (60%) admitted in first five years when the time of fasting duration shorter days than second half 5 years of the study which was 53 (40%). This also supports the previous fact.

Of 132 fasting patients of Ramadan 83 (63%) admitted in second half & 49 (37 %) admitted in first half of the Ramadan with a ratio of (1.7:1). Comparing the last 10 days of Ramadan fasting for the first 10 days the ratio was (2:1). The last 20 days compare to first 10 days the ratio was (3.4:1).

Discussion

Recently, only a few studies have focused on the impact of Ramadan on peptic disorders, and these have all reported different results[8]. Most of them are retrospective with few prospective studies available. This study is a prospective 10 years study to evaluate the risk factors in general among PPU especially during the fasting period of holy Ramadan and comparing it to (Shaban) and (Shawal), a month before & a month after Ramadan respectively. Since tests for detecting H. Pylori was not possible in our patients due to logistic problems, this study did not take this into consideration in our discussion.

In the present study, 312 patients (Mean 31.2 cases of perforations for the three months of each year and 10.4 cases per each month were participated), the number are much higher than most of the reported by other studies with a longer period of study[6-9].

Although in Islam, patients have permission to not fast until recovery from diseases. However, still some patients insist to fast. Different studies reported different results to advise patients to fast or not with medical coverage for peptic ulcer[9]. In this study different anti-peptic ulcer drugs were irregularly used only in 15 (5%) of the patients in the last 6 months before perforation. Using medical treatment among peptic ulcer disease patients may decrease the possibility of peptic ulcer[10].

It is clear that not all patients admitted in Ramadan with perforations are fasting. More perforations occur in holy Ramadan with a mean of 16.6 in Ramadan compared to 7.3 in other months, indicating that 2.3 folds more perforated peptic ulcers occurred in Ramadan. This result seems consistent with previous studies [10-12]. As in 2012(n=229) - patients were recruited, as the result they -mentioned that more surgery in these patients were achieved during Ramadan[8].Some factors, along with fasting occurred in peptic ulcer perforations. This indicates that fasting may be a triggering factor for perforation. It had already been mentioned that fasting is attended by increased incidence of peptic ulcer complications. Further in the study conducted in 2011, found that the incidence of duodenal ulcer perforation is relatively high in Ramadan especially among the people, who are fasting [10].

Furthermore, another study reported that peptic ulcer disease and complications were more frequent in the month after Ramadan. [13] This study found that PPU increased during Ramadan followed by Shaban then Shawal. Decreased PPU in Shawalin comparison to Shaban can be explained by the fact that most of the susceptible patients with peptic ulcers were perforated during fasting period of Ramadan so after fasting period of Ramadan perforations decreased.

Non-Steroidal Anti Inflammatory Drugs (NSAIDs) are associated with peptic ulcers due to impairment of mucosal defenses and increases risk of peptic ulcer disease about 5 fold. More than half of patients who present with peptic ulcer haemorrhage or perforation report the recent use of these drugs. One quarter to more than half of PPU are taking NSAIDs[14,15]. Appear to be responsible most of these perforations [16]. These drugs One can estimate that NSAIDs may contribute to one-fifth to one third of ulcer perforations, this proportion has increased with increasing age[17].In this study, two-third 198 (62.8%) of patients were using NSAIDs or steroids. Erratic use of these drugs without a physician's prescription in our community may have a major role in the high perforation incident. Although NSAID is a risk of perforation but did not increases the incidence of perforation among group1 patients 79 (56.8%) alone versus group 2, 117(67.6%). This indicates that taking daily 3 meals, food do not decrease the chance of

perforation among those using NSAIDs. Diclofenac (from Anthranilic acid group) was the most popular (NSAID) used 93 (47.5%) on the top of the list & least one is Celecoxib 5 (2.6%). This agreed with the same result of Hawrame et al. (n=50)-2010- study done in Sulaimaniyah, that two-third of the patients had a history of ingestion of NSAIDs within one week before perforation, the most common drug taken was diclofenac sodium (voltaren) in 33 (66%) cases [18].

Some epidemiologic studies found that smokers are about twice as likely to develop PUD as nonsmokers [15].A study from Norway showed a strong association between ulcer perforation and smoking. The risk was increased by a factor of 10 in smokers among both men and women. Smoking seem to be a risk factor of major importance for ulcer perforation[19]. In our study, smoker's accounts of 139 (44.6%) patients and this result is quite inconsistent with studies reported in Baghdad 43% (n=231) & Pakistan 46% (n=133) [10,12]. Smoking was more among group 2 patients 85 49.1%) than group 1 patients 54 (38.8%), but with no significant difference. This finding supports a study from Turkey[9]. Although dyspepsia and smoking are stated risk factors for PPU in most of the studies, but no significant difference was found between both groups. This study found that male to female ratio for perforated duodenal ulcer was 3.7: 1, this in agreement with other studies [13-17].This male dominancy can be explained by the hormonal factors, job type, work stress and smoking. In Baghdad study is 6:1 [10].In Erbil study, male to female ratio were higher 8.5:1[11]. In our study no significant difference was found between the two groups in contrast to other studies [8,9].Still in our community male is dominant in PPU during fasting and other periods.

The peak age for ulcer prevalence is different among different studies, and in different populations and time. Recent studies have shown an increase in the rates of hospitalization and mortality in elderly patients for the peptic ulcer complications of bleeding and perforation [17].

This study found that a quarter of the patients are above 60 years of age and another quarter were below 30 years of age. Only 24(7.7%) are below age of twenty. Also, this agrees with most other studies in that the incidence of perforation was detected as higher in young adults and middle age groups[8-10].

This is unlike western data with a tendency of the disease to affect older age groups. The peak age of PPU is in the fourth decade of life for group 1 patients, but at the second decade for group 2. This indicates that perforations in Non - fasting patients occur in younger active productive age. An increase in frequency of perforation in middle age reflects that age is a risk factor for peptic ulcer perforation rather than Ramadan fasting. This may be due to an increase in the incidence of Helicobacter pylori infection with age as the incidence of H. Pylori infection in those over 50 years and 70 years is >50% and >75% respectively, or due to vascular devitalization[13]. Perforations above 60 years age 77(24.7%) is higher than those below 20 years of age 24 (7.7%). Although fasting is not mandatory at the early age of life, perforations below 20 years age comparable to those above fifty do not differ in both groups.

Perforation can be the first sign of an ulcer, and a history of recurrent epigastric pain is uncommon[17] .In our study, more than half of the patients 173 (55.4%) has a history of dyspepsia. Dyspepsia is mostly found in group 2 patients 105 (60.7%) than

group 1 patients 68 (48.9%), which is not statistically significant. History of dyspepsia is an important predisposing factor for duodenal ulcer perforation in patients who are fasting. Patients with dyspepsia should be evaluated for peptic ulcer disease & if diagnosed should be treated before Ramadan fasting.

Some studies put history of previous acid peptic disease or peptic ulcer as risk factors [10,11, 12,19,20].Nearly one in each 7 patients 46 (14.7%) has at least once, previous history of Esophago-gastro-duodenoscopy (EGD) and nine out of ten 40 (87%) of them had peptic ulcer disease either acute or chronic. Nine out of ten scoped group 1 patients 36 (90%) had previous peptic ulcer diseases in contrast to group 2 scoped patients of seven often 4(66.6%). This result is in agreement with the study [20], which reported that (15.5%) and higher than that in some other studies [10,17] but less than A M Al-Marsoumi& N S Jabbo[19]. So patients with previous history of duodenal ulcer are prone to perforation during fasting and this may be aggravated by combining other factors. More caution and follow up is recommended for these patients during Ramadan fasting. No patient has a history of previous perforated peptic ulcer in our patients.

The coexistence of peptic ulcer and diabetes mellitus is a rare occurrence[13].In our study 42 (13.5%) patients had associated comorbid diseases. Cardiovascular (IHD & Hypertension), and diabetes mellitus were the most frequently associated concomitant disease, but no significant difference was found between the two groups. This result is in similar to Al-Marsoumi & Jabbo[19]**.** There were no accompanying diseases such as renal and liver disturbances in both groups. This may be due to the limited number of patients in the groups, and further studies may reflect the relation between any of the diseases and duodenal ulcer perforation in Ramadan. It is impractical with the data to suggest any limitation of fasting in any of these patients. This is not in agreement with some other studies [8,9].

Regarding the duration of fasting: Recently, few studies have evaluated the duration of fasting to perforated peptic ulcers. Prolonged fasting has been shown to affect many things, including metabolic profiles, weight, kidney function, blood pressure, diabetes mellitus control & rates of perforation [8]**.** This study found that the duration of fasting period in each day is not a significant risk for perforation among fasting patients. As the difference in daytime fasting was 2 hrs & 28 minutes, longer in 2015 (mean of 15 hours & 34 minutes) than 2006 (mean of 13 hours & 6 minutes) but less perforations in 2015 found among fasting patients (36% vs. 53%). Also the first five years fasting day time period, collectively were shorter than the second five years. Of 132 fasting patients of Ramadan, 79 (60%) admitted in first five years when the time of fasting duration shorter days than second half 5 years of the study which was 53 (40%). This also supports the same finding. So ruling out other factors we can conclude that the duration of daily fasting time has no role in perforations. Those not in agreement with other study done in Turkey was peptic ulcer perforation was found relatively higher in patients who were fasting more than 12 hours[8]**.** In terms of seasonal variations in the last five years, the climate was more dry and hot because entering the summer season than the first 5 years were in autumn. In spite of that the number of perforations in the

last 5 years was less than the first 5 years. Therefore, this can suggest that hot weather may have no role in causing perforations in fasting persons. This agrees with Sulaimanya study done as one peak of perforation is in September but disagree with another study done in Baghdad[18,19]. While the previous report has shown a seasonal variation in the incidence of PPU, others have failed to find such a pattern[4].

The strike finding is in comparing PPU of the last 10 days of Ramadan among fasts people with the first 10 days (2:1) or the last half with the first half (1.7:1) of the holy month of Ramadan. The current study found that about two folds increased perforations. These conclude that later days of Ramadan had more perforations than the first few days. On comparing the last 20 days to first 10 days perforations were more (3.4:) and thus agreed to a study done in Sudan by Elnagibetal[20].

These indicate that accumulated effects of fasting may be a triggering factor for perforation and may increase the incidence of perforation. Further, the pattern of perforated PUD has been reported to vary from one geographical area to another, depending on the prevailing socio-demographic and environmental factors [7].In general, more PPU seen in rural areas 143(53.3%) virsus 125 (46.6%) but more in urban areas among fasting patients. This result is same to another Sulaimaniyah study [18] but in contrast to other study done in Erbil[11].This difference may be related to lifestyle difference in these regions and food habit. Stress although difficult to measure, both physiological and psychological stress undoubtedly plays a role in the development of peptic ulcer in some patients. Curling described duodenal ulcer and/or duodenitis in burn patients. & Cushing described the appearance of acute peptic ulceration in patients with head trauma (Cushing's ulcer)[15]. Other cities perforations from internally displaced patients and those who are still remaining in or near from the conflicted areas. In our study highest number of perforations was admitted in 2006 then declined to minimum until 2013 and the number increased again at last two years of the study. More perforations can be explained by more stress and less economic and political stability compared to other years. This result comes into agreement with another study from Baghdad[10]. This is probably due to increase number of referring patients to our hospital, secondly due to increasing stressful conditions in our country.

Manual Labors, nonprofessional unskilled people followed by housewives more prone to perforations with no significant difference between fasting and non-fasting patients. These results were very similar to the literatures done in both developing & developed countries[6,8,19].

Duodenal ulcer perforation 285 (91.3%) versus Gastric ulcer perforation 25 (8%) were 9/1. All biopsy results of gastric ulcers were benign. Lastly, one patient that treated conservatively & the perforation site not known. This result is same as other studies[7,19,20].but more duodenal perforation found than Hiren Parmer, et al., study in India (n=50) in 2012[6].

All our cases were surgically approached through laparotomy except one. Open surgical treatment is still the primary option in all hospitals in our country.[10]At the same time the laparoscopic technique in the closure of PPU is being tried & practiced in the few cases in our hospitals.

CONCLUSION

This study found that the incidence of PPU is relatively high among people who have predisposing factors, including young adults age, but earlier in non-fasting people , male gender, but no difference between the two groups in those using non -steroidal anti-inflammatory drugs, history of dyspepsia. Those with previous peptic ulcer on esophagogastroduodenoscopy more prone to perforation. Long period day after day fasting, but not daytime length duration may increase PPU.

Recommendations

This study recommends that

1. The people with these risk factors must be well informed and need special care to avoid such complications.
2. Oesophagogastroduodenoscopy is advisable for patients with upper gastrointestinal symptoms for early detection and treatment of peptic ulcers and prevention of complications.
3. This study also suggests further studies regarding this subject.

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