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Effects of Ramadan Fasting on the Prevalence of Pathologic Findings Diagnosed by Upper Gastrointestinal Endoscopy in Geriatric Patients

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Abstract

The ageing population of the world has resulted in associated changes in healthcare provision. The diagnostic methods such as, Upper Gastrointestinal Endoscopy (UGE) have played an important role in the evaluation of Peptic Ulcer (PU). Every year millions of Muslims in any age fast in Ramadan Month. The goal of this study was to evaluate the effect of fasting in geriatric age on PU via UGE. A total of 108 patients over 65 years old in the period of 2009 to 2011, who underwent UGE mostly to clear up epigastric pain were analyzed. Patients were divided into three groups: patients who have been evaluated via UGE, in the month just before the Ramadan (Group I, n=23), in the Ramadan month (Group II, n=47) and in the month just after the Ramadan (Group III, n=38). Epigastric pain was the most common indication for referral in each group. Interestingly the indication ‘‘bleeding’’ was found to be the least of all in Group II. In Group 2 was found the highest prevalence of especially duodenal ulcers and duodenitis, the differences to the other groups were statistically significant. We recommend that the patients with epigastric pain may fast by taking their medications.

Keywords: Gastrointestinal Endoscopy; Peptic Ulcers; Ramadan Fasting

Introduction

The developed world is experiencing a demographic transition in which the proportions of people in the oldest age groups are increasing, and the proportions in the youngest age groups are decreasing [1]. Peptic Ulcer Disease (PUD) is due mostly to the widespread use of low-dose aspirin and nonsteroidal anti-inflammatory drugs. It occurs mostly in older patients and those with comorbidities [2].

Fasting during the ninth month of lunar calendar (Ramadan) is a religious obligation for all adult Muslims. This entails no food and liquid intake in day time. The duration of this restriction varies between 10 to 19 hours depending on which season of the solar calendar Ramadan coincides that year (approximate 10 days earlier every year). The effect of Ramadan on the metabolism of the body has been the subject of various publications [3-7]. Also, the association between the time-restricted food, water intake and gastric pH, plasma gastrin level has been discovered a long time ago [8]. Effects of this religious ritual on Peptic Ulcer (PU) have not been thoroughly studied in the recent years. An Indian prospective randomized study in mid- 90’s including 23 patients in which all the cases were evaluated by UGE advocated that Ramadan fasting might prove hazardous in patients with peptic ulcer disease in general and with active chronic ulcers in particular [9]. However, the number of the patients in that trial was so small to make such conclusion. On the other hand, a different study with UGE from the United Arab Emirates in 2006 affirmed that there was no significant difference in the frequency of peptic ulcer cases in Ramadan when compared to the month after Ramadan [10]. Furthermore, a recent trial with 1661 patients published by Chong et al. in 2009 declared that patients referred during the fasting month of Ramadan had more ulcer diseases, particularly duodenal ulcers [11]. The conclusions of those three studies were not in the same directions and none of them were focused on the effect of age on the findings of UGE.

There is still an on-going debate on elderly patients with PU whether they may fast during Ramadan or not. The aim of the study was to evaluate the effect of Ramadan on elderly patients

(+65) peptic ulcer by considering the medical conditions of the patients and the pathologic findings during UGE.

Patients and Methods

The population catchment is more than 400,000 and there are two Endoscopy Units in our University, one of them is under the division of Gastroenterology and Hepatology and the other one is under the department of general surgery. These units are working independently and each one is accepting referrals from other centers and other clinics. However, all patients are being referred to the surgical department if the bleeding is not controlled with medical and endoscopic therapies. The study was approved by the local ethics committee. The study was including the patients between 65 and 94 years of age who were applied upper gastrointestinal endoscopy due to having symptoms of ulcer disease between 2009 -2011. The patients who were in our follow-up due to malignancy or peptic ulcer were excluded. So, only applicants for the first time were included in the study.

Data of the patients were collected prospectively and evaluated retrospectively. A total of 108 patients in the period of 2009 to 2011, who underwent UGE mostly to clear up epigastric pain, where analyzed. Patients were divided into three groups: patients who have been evaluated via UGE, in the month just before the Ramadan (Group I, n=23), in the Ramadan month (Group II, n=47) and in the month just after the Ramadan (Group III, n=38).

Medical conditions of the patients at the time of admission were also evaluated. The demographic and clinical features of the patients according to the groups were recorded. The indication of the endoscopy of the patients was analyzed. In the case of epigastric pain, patients were asked to score their pain according to subjective pain scale. Those scores were classified as mild, moderate, and severe. The results of the classification were analyzed to detect the existence of any difference among groups.

Details of endoscopic findings were collected and were categorized into normal and abnormal findings. Abnormal findings were further categorized into anatomic parts of upper gastrointestinal systems and the results were evaluated. The study period was three years and the variation of the number of the admissions in time was also evaluated.

Statistics

Continuous data are expressed as the mean ± SD (ages of the patients were expressed as median and min-max), and were compared with one-way ANOVA test among groups. Categorical data are given as percentages and were compared with the chi-square test. A p value <0.05was considered to be significant. All statistical analyses were performed using the SPSS statistical package for Windows version 15 (SPSS, Inc., Chicago, Illinois).

Results

Upper Gastrointestinal Endoscopy was applied to 108 geriatric patients (+65) during the study period: before (n = 23), during (n = 47) and after (n = 38) the month of Ramadan. There were no significant differences between the ages(p=0.79) and the genders (p=0.39) of the patients between these three groups. Also; there were no significant differences between NSAID usage (p=0.78), smoking habit (p=0.96), and existence of comorbidity between these three groups (p=0.43). Hypertension (HT), Chronic Obstructive Pulmonary Disease (COPD), and diabetes mellitus (DM) were the most common comorbidities in all groups (Table 1).

	Group I (Pre-Ramadan) n=23	**Group II (Ramadan) n=47**	**Group III (Post-Ramadan) n=38**	**p**
Median Age (range)	67(65-86)	68(65-87)	71(65-85)	0.79
Gender				
male	16(69.6%)	35(74.5%)	23(60.5)	0.39
female	7(30.4%)	12(25.5)	15(39.5%)	
NSAID	17(73.9 %)	34(72.3%)	30(78.9%)	0.78
Smoking	8(34.8%)	18(38.3%)	14(36.8%)	0.96
Comorbidity	21(91.3%)	44(93.6%)	35(92.1%)	0.43
HT	17(80.0%)	36(81.8%)	29(82.8%)	
CAH	11(52.3%)	21(47.7%)	17(48.5%)	
COPD	9(42.8%)	17(38.6%)	16(45.7%)	
DM	6(28.5%)	13(29.5%)	9(25.7%)	

Table 1: Demographic and clinical features of the patients.

There were no significant differences with regard to the referral indications between the three periods (p=0.10). Interestingly the indication ‘‘bleeding’’ was found to be the least of all in group II (8.5%), but was far from statistical significance. Epigastric pain was detected more frequent in Group II but was not statistically significant. (Table 2). The severity of epigastric pain was evaluated by subjective pain scale. No significant differences was detected between groups either (Table 3).

	Group I (Pre-Ramadan) n=23	Group II (Ramadan) n=47	Group III (Post-Ramadan) n=38	p
Epigastric Pain, n (%)	11 (47.8%)	31 (66.0%)	24 (63.2%)	0.10
Dyspepsia, n (%)	2 (8.7 %)	6 (12.8 %)	4 (10.5 %)	
Anemia, n (%)	3 (13.0 %)	5 (10.6%)	3 (7.9%)	
Bleeding, n (%)	4 (17.3 %)	4 (8.5%)	5 (13.2 %)	
Others, n (%)	1 (4.3 %)	1 (2.1%)	2(5.3 %)	

Table 2: The indication for UGE.

	Group I (Pre-Ramadan) n=23	Group II (Ramadan) n=47	Group III (Post-Ramadan) n=38	p
Mild	6 (26.1%)	18(38.3%)	15(39.5%)	0.31
Moderate	4 (17.4%)	10(21.3%)	7 (18.4%)	
Severe	1(4.3%)	3(6.4%)	2(5.3%)	
Total	11(47.8%)	31 (66%)	24(63.2%)	

Table 3: Severity of pain in groups.

In Group 2 was found the highest prevalence of especially duodenal ulcers and duodenitis, the differences to the other groups were statistically significant. There were no significant differences in the endoscopic findings in the esophagus and stomach. Gastritis and esophagitis were detected as the most frequent abnormal finding in stomach and esophagus in each group. On the other hand, duodenal ulcer and duodenitis were detected significantly higher in Group II (p=0,04) than in Group I and Group III (Table 4).

Organ/Finding	Group I (Pre-Ramadan) n=23	Group II (Ramadan) n=47	Group III (Post-Ramadan) n=38	P*
Esophagus				
Normal	15(65.2%)	28(59.6%)	26(68.4%)	0,65
Esophagitis	6 (26.1%)	12(25.5%)	8 (21.1%)	
Hiatal Hernia	2(8.7%)	7(14.9%)	4 (%10.5)	
Stomach				0.85
Normal	5(21.7%)	10(21.3%)	8 (21.1%)	
Gastritis	11(47.8%)	24(51.1%)	19(50.0%)	
Ulcer	4(17.4%)	8 (17.0%)	7 (18.4%)	
Bile Reflux	2(8.7%)	3(6.4%)	1(2.6%)	
Bleeding	1(4.3%)	2(4.3%)	3(7.9%)	
Duodenum				**0,04**
Normal	14(60.9%)	16(34.0%)	29(76.3%)	
Duodenitis	3 (13.0%)	21(44.7%)	4 (10.5%)	
Ulcer	3 (13.0%)	8 (17.0%)	3(7.9%)	
Bleeding	3 (13.0%)	2(4.3%)	2(5.3%)	
*Oneway- ANOVA test for multiple comparison				

Table 4: Endoscopic Findings in Groups.

The study period was three years and the variation of the number of the admissions in time was exhibited in figure 1. There was no difference in the variation of the number of the admissions in time.

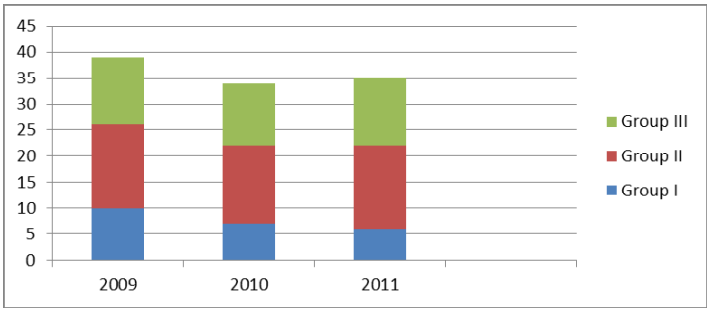

Figure 1: Patients admissions in years.

Discussion

Whether the elderly patients with peptic ulcer disease should be recommended not to fast is a tough question to respond, because the physiological changes during Ramadan are not precisely known. In the modern era of H2-receptor blocker, proton pump inhibitor and eradication of *Helicobacterium pylorii* the treatment for peptic ulcer disease had already led to a sharp decline in complications. Its well-known that gastrointestinal disorders could be altered by fasting. Recently, only few studies were published, which have focused on the impact of Ramadan on peptic disorders and all these studies have different results [3,5,12]. So far, no study has been conducted specifically on the effects of Ramadan fasting on peptic ulcer disease in geriatric age. The aim of the study was to evaluate the effect of Ramadan on peptic ulcer in geriatric age by considering the medical conditions of the patients and the pathologic findings during UGE.

In our trial the demographical data of the patients and the indications for endoscopy during the fasting and the non-fasting months were showed minimal differences. These results are similar with the results of Chong's study [11]. However, that study was done in a multi cultured country and the mean age was approximately 50 in all groups, so it's hard to make a comment on this compatibility.

The impact of fasting in ulcer patients was the subject of a few trials [10,13]. The severe complications of that disease were found to be higher during Ramadan. However, in our study, there were no difference in endoscoping findings of esophagus and stomach. This incongruity is difficult to understand. Perhaps the major complications are a consequence of the pathologic findings in the duodenum.

In another study which was edited by Azizi [14], it was noted that patients with complicated peptic ulcer may be advised against fasting. However, asymptomatic patients may try fasting. In our study the endoscopic findings were altered only in duodenum, partially an increase was detected in duodenitis and duodenal ulcer. The results of both studies can be accepted as compatible.

Duration of fasting may have an effect on the results of all trials about the influence of Ramadan in body metabolism. The duration of fasting varies between 10 to 19 hours in our country, depending on which season of the solar calendar Ramadan coincides that year (approximate 10 days earlier every year). So, it is certain that this study has some limitations. Finding out all the data requires a perspective of 36 years because Ramadan completes it's one tour around solar calendar in 36 years. And this study can reflect only the results of one region in Turkey, but there are more than one billion Muslims all over the world who are fasting in different conditions and durations.

Conclusion

Duodenal ulcers and duodenitis in older patients (+65) were found higher in Ramadan mount. The other parameters were found similar in Ramadan. We recommend that, the patients with epigastric pain may fast by taking their medications.

Conflict of Interest Statement

The authors declare that they have no competing interests as defined by this journal, or other interests that might be perceived to influence the results and discussion reported in this paper.

References

1. Mirbagheri N, Dark JG, Watters DA (2010) How do patients aged 85 and older fare with abdominal surgery? J Am Geriatr Soc 58: 104-108.
2. Najm WI (2011) Peptic ulcer disease. Prim Care 38: 383-394.
3. Al-Hourani HM, Atoum MF (2007) Body composition, nutrient intake and physical activity patterns in young women during Ramadan. Singapore Med J 48: 906-910.
4. Fakhrzadeh H, Larijani B, Sanjari M, Baradar-Jalili R, Amini MR (2003) Effect of Ramadan fasting on clinical and biochemical parameters in healthy adults. Ann Saudi Med 23: 223-226.
5. Larijani B, Zahedi F, Sanjari M, Amini MR, Jalili RB, et al. (2003) The effect of Ramadan fasting on fasting serum glucose in healthy adults. Med J Malaysia 58: 678-680.
6. Khafaji HA, Bener A, Osman M, Al Merri A, Al Suwaidi J (2012) The impact of diurnal fasting during Ramadan on the lipid profile, hs-CRP, and serum leptin in stable cardiac patients. Vasc Health Risk Manag 8: 7-14.
7. Ibrahim WH, Habib HM, Jarrar AH, Al Baz SA (2008) Effect of Ramadan fasting on markers of oxidative stress and serum biochemical markers of cellular damage in healthy subjects. Ann Nutr Metab 53: 175-181.
8. Halberg F (1974) Protection by timing treatment according to bodily rhythms - an analogy to protection by scrubbing before surgery. Chronobiologia Suppl 1: 27-72.
9. Malik GM, Mubarik M, Jeelani G, Tajamul H, Kadla SA, et al. (1996) Endoscopic evaluation of peptic ulcer disease during ramadan fasting. Diagn Ther Endosc 2: 219-221.
10. Bener A, Derbala MF, Al-Kaabi S, Taryam LO, Al-Ameri MM, et al. (2006) Frequency of peptic ulcer disease during and after Ramadan in a United Arab Emirates hospital. East Mediterr Health J 12: 105-111.

11. Chong VH (2009) Impact of Ramadan on upper gastrointestinal endoscopy referrals in Brunei Darussalam. Singapore Med J 50: 619-623.

12. Hosseini-asl K, Rafieian-kopaei M (2002) Can patients with active duodenal ulcer fast Ramadan? Am J Gastroenterol 97: 2471-2472.

13. Donderici O, Temizhan A, Kucukbas T, Eskioglu E (1994) Effect of Ramadan on peptic ulcer complications. Scand J Gastroenterol 29: 603-606.

14. Azizi F (2010) Islamic fasting and health. Ann Nutr Metab 56: 273-282.