

The Endoscopic Findings in low-dose Aspirin Consumers with Upper Gastrointestinal Bleeding

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ABSTRACT

Background:

Upper gastrointestinal bleeding (UGIB) is an important complication of low-dose aspirin. There are few and conflicting results about the etiology of UGIB in relation to low-dose aspirin. The aim of the present study was to evaluate the upper gastrointestinal endoscopy of patients taking low-dose aspirin who developed UGIB.

Materials and Methods:

The medical records of patients with UGIB who referred to Fatemeh Hospital, Semnan, Iran during 2001-2011 were studied and eligible patients were enrolled to the study. The endoscopic data were extracted and compared between the patients taking low-dose aspirin and who were not taking aspirin (control).

Results:

419 cases were studied. 58 (13.8%) patients consumed low-dose aspirin and 204 (48.7%) patients did not consume aspirin. The average age of the patients who received low-dose aspirin and those in the control groups were 65.9 ± 5.9 and 50.4 ± 22.3 years, respectively ($p = 0.000$). 46.6% and 32.4% of the patients in low-dose aspirin and control groups were women, respectively, and the remaining patients were men ($p > 0.05$). The main endoscopic findings in low-dose aspirin and control groups were erosions of the stomach, duodenum, and esophagus (55.9% and 51.7%) and peptic ulcer (50% and 43.6%), respectively. The other findings such as neoplasia, Mallory Weiss, and hiatal hernia were uncommon (1.7% and 5.9%). The prevalence of endoscopic findings was not statistically significant between the two groups ($p > 0.05$).

Conclusion:

In this small study, although patients with UGIB and low-dose aspirin consumption had more peptic ulcers and erosions in comparison with the control group, the difference was not significant.

Keywords: Low-dose, Aspirin, Gastrointestinal, Bleeding, Endoscopy

please cite this paper as:

Nobakht H, Saberi-Demneh A, Mirmohammadkhani M, Fathi M. The Endoscopic Findings in low-dose Aspirin Consumers with Upper Gastrointestinal Bleeding. *Govaresh* 2018;23:178-182.

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Received: 10 May 2018

Edited: 02 Sep. 2018

Accepted: 03 Sep. 2018

INTRODUCTION

Antiplatelet drugs such as low-dose aspirin (75-325 mg) are commonly used to primary and secondary prevention of cardiovascular and cerebrovascular diseases (1,2).

Although aspirin is inexpensive, available, and has tremendous effects, it has some side effects. The gastric pain, ecchymosis, tinnitus, anaphylaxis, hives, angioedema, nephropathy, hepatitis, and asthma attack are the known side effects of it (3). The major life threatening complication of low-dose aspirin is upper gastrointestinal bleeding (UGIB)(4).

The incidence of UGIB caused by low-dose aspirin varies according to epidemiological studies. Meta-analysis of randomized controlled clinical trials reports that the risk of UGIB due to low-dose aspirin is more than two fold compared with placebo and in the observational studies, the above risk is estimated up to three fold (5).

Awareness of mucosal lesions caused by low-dose aspirin has an important role in the preventive and therapeutic actions. The studies about upper gastrointestinal mucosal lesions due to low-dose aspirin are few and controversial (5-7). Therefore, it seems that there is a need for further studies in different populations. The aim of this study was to evaluate the upper gastrointestinal endoscopy in patients with UGIB and low-dose aspirin consumption. This study can provide useful information about the incidence and etiology of mucosal lesions caused by low-dose aspirin.

MATERIALS AND METHODS

In this retrospective study, the medical records of patients with UGIB who referred to Fatemiyeh Hospital, Semnan, Iran during 2001-2011 were extracted and evaluated.

The inclusion criteria were patients with UGIB, taking low-dose aspirin (aspirin group), and not taking drug (control group). The exclusion criteria were taking high-dose aspirin (greater than 325 mg), known cases of cirrhosis, coagulation disorders, epistaxis, taking non-steroidal anti-inflammatory drugs (NSAIDs) other than aspirin, corticosteroids, anticoagulant agents, proton pump inhibitors, and beta 2 blockers. The eligible patients divided into two groups of low-dose aspirin and control.

The patients' medical records were studied carefully and the following information was extracted: a) Demographic data including age, sex, smoking, alcohol consumption, blood transfusion, history of cardiovascular and cerebrovascular diseases, b) Presentation of UGIB including hematemesis or melena (hematemesis is vomiting with fresh or with a grain of coffee feature, and melena is a black stool that had been confirmed in a laboratory in a hospital), or both, and other presentation such as hematochezia (the passage of fresh blood per anus), c) Endoscopic findings of the upper gastrointestinal tract.

Data were analyzed using SPSS software version 17. Qualitative data expressed as percentage and quantitative data as mean (\pm SD). Chi-square, Kruskal-Wallis, and Fisher's exact tests were used to compare the qualitative data and t test was used to compare quantitative data. $p < 0.05$ was considered as statistically significant.

RESULT

419 cases of UGIB were found in medical records. 157 (37.5%) patients did not have the necessary criteria for the study and were excluded. Finally, 262 (62.5%) cases were studied carefully. Out of them, 58 (13.8%) patients were low-dose aspirin consumers and 204 (48.7%) patients did not use aspirin (control group).

The mean ages of the patients using low-dose aspirin and control group were 65.9 ± 15.9 and 50.4 ± 2.2 years, respectively ($p = 0.000$). The other demographic data of the patients are presented in table 1. The prevalence of cardiovascular ($p = 0.001$), and cerebrovascular diseases ($p = 0.000$) and blood transfusions ($p = 0.03$) in the low-dose aspirin group was higher than in the control group significantly.

Table 2 shows the distribution of mucosal lesions that were found during endoscopy. In the low-dose aspirin group, gastric erosion and ulcer, and duodenal ulcer and erosion were the most lesions, respectively. In the control group, gastric erosion and ulcer, then duodenal ulcer and esophageal erosion were the most lesions, respectively. In addition, Mallory-Weiss tear, varicose veins, neoplasia, Dieulafoy, polyp, Barrett's esophagus, and pyloric stenosis were the least endoscopic observations in both groups. The prevalence of endoscopic findings was not statistically different between the two groups ($p > 0.05$).

Five (8.6%) and 22 (10.8%) patients in the low-dose aspirin and control groups had normal endoscopy, respectively. 19 (32.8%) and 65 (31.9%) patients in the low-dose aspirin and control groups had only erosion in the endoscopy, regardless of the number and location of the erosions. In addition, the prevalence of peptic ulcer was 46.6% and 40.2% in low-dose aspirin and control groups, respectively, regardless of the number and location of the ulcer or the presence or absence of erosion.

Table 1: The basic information of the patients

Variables	Groups	Count	%	P	
Sex	Male	Control	137	67.2	NS
		Aspirin	31	53.4	
	Female	Control	66	32.4	
		Aspirin	27	46.4	
Cerebrovascular disease	Control	6	2.9	0.000	
	Aspirin	50	86.2		
Cardiovascular disease	Control	24	11.8	0.001	
	Aspirin	21	36.2		
Smoking	Control	42	20.6	NS	
	Aspirin	7	12.1		
Alcohol consumption	Control	6	2.9	NS	
	Aspirin	2	3.4		
Transfusion	Control	83	40.7	0.03	
	Aspirin	33	56.9		
Types of bleeding	Melena	Control	116	58.3	NS ^{2,3}
		Aspirin	31	56.4	
	Hematemesis	Control	45	22.6	
		Aspirin	6	10.9	
	Both	Control	31	15.6	
		Aspirin	15	27.3	
	Other ¹	Control	7	3.5	
		Aspirin	3	5.5	

1. Other types including hemoptysis and hematochezia 2. Not significant 3. Kruskal-Wallis test

DISCUSSION

Low-dose aspirin prescription has increased over the past decades and this resulted in a significant reduction of cardiovascular events (8). In addition, low-dose aspirin increases the risk of UGIB (5-7).

The present results showed that mucosal erosion and peptic ulcer are the most common etiology of UGIB in low-dose aspirin and non- aspirin consumers without significant difference between the two groups.

In the study by Yeomans and colleagues, low-dose aspirin administration led to upper gastrointestinal erosions in 60% of cases and peptic ulcer in about 11% of cases (6), which is lower than our findings about peptic ulcer. Niv and co-workers in an interventional study without control group, among 90 patients who consumed low-dose aspirin, observed that 14 and 2 patients developed gastric and duodenal ulcers and 13 patients developed gastritis and duodenitis (7). Similar to our findings, Taha et al., in a retrospective study,

reported that erosion and then peptic ulcer were the most common endoscopic findings in the cases of UGIB with or without history of taking low-dose aspirin. In their analysis low-dose aspirin increased only the risk of esophageal erosion (OR = 2), and it was not related to peptic ulcer (9). Yamamoto et al. in their retrospective study reported taking low-dose aspirin in comparison with the control group, increased peptic ulcer significantly (14% vs. 4%) (10). In the present study, although the prevalences of peptic ulcer and upper gastrointestinal erosions were higher in the low-dose aspirin group, the difference was not significant. On the other hand, in this study low-dose aspirin did not change the mucosal lesions and etiology of UGIB significantly.

8.6% of our cases in the low-dose aspirin group had normal endoscopy. Mucosal lesions lower of the ligament of Treitz, which is outside of accessibility of the common upper gastrointestinal endoscopy, can be

Table 2: The endoscopic findings

Lesions	Groups	Count	%	P
Mallory–Weiss tears	Control	3	1.5	NS ²
	Aspirin	2	3.4	
Erosive esophagitis	Control	32	15.7	NS
	Aspirin	4	6.9	
Erosive gastritis	Control	57	27.9	NS
	Aspirin	18	31	
Erosive duodenitis	Control	25	12.3	NS
	Aspirin	8	13.8	
Gastric ulcer	Control	47	23	NS
	Aspirin	12	20.7	
Duodenal ulcer	Control	42	20.6	NS
	Aspirin	17	29.3	
Neoplastic	Control	7	3.4	NS
	Aspirin	3	5.2	
Esophageal varices	Control	11	5.4	NS
	Aspirin	0	0	
Other ¹	Control	12	5.9	NS
	Aspirin	1	1.7	
Only erosion	Control	65	31.9	NS
	Aspirin	19	32.8	
Peptic ulcer + erosion	Control	82	40.2	NS
	Aspirin	27	46.6	
Normal	Control	22	10.8	NS
	Aspirin	5	8.6	

1. Dieulafoy, hiatal hernia, Barrett's esophagus, pyloric stenosis 2. Not significant

the cause of bleeding in these patients. Previously, the study of small bowel with video capsule showed well that aspirin caused mucosal lesions such as erosion, ulcer, and intestinal villi destruction (11,12). In addition, taking enteric-coated low-dose aspirin may be another reason for normal upper gastrointestinal endoscopy, which can reduce the upper gastrointestinal mucosal lesions (13).

Of the advantages of this study was the presence of control group that improved the value of the results. Of the limitations of this study was the retrospective design and low sample size in low-dose aspirin group.

In summary, according to the findings of this study, erosion and peptic ulcer are common causes for UGIB in low-dose aspirin consumers. Also the endoscopic findings in low-dose aspirin consumers may not significantly differ from non-aspirin consumers.

CONFLICT OF INTEREST

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

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