



Research Article

Demographic Features of Ulcerative Gastroduodenal Bleeding

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Abstract

Background. Gastroduodenal bleeding (GDB) is a common cause of endoscopic examinations. This study aims to study demographic criteria in patients with ulcerative genesis GDB during primary endoscopic examinations in a single center.

Materials and Methods. The diagnostic esophagogastroduodenoscopy (EGDS) of 231 patients with GDB of ulcerative etiology from January 2020 to December 2021 was analyzed, all patients were with primary EGDS. The study compared the activity of ulcerative bleeding, depending on gender and age groups.

Results. The majority of patients with ulcerative GDCS were women – 57.7%. In both groups, duodenal ulcer was the predominant cause of GDB, 61.5% in women, and 54.2% in men. Active bleeding was observed in 8 (3.4%) patients. Among all women and men, Forrest-II bleeding was detected in 126 (93.4%) and 86 (89.6%) patients, respectively. In women and men, GDB is most common over the age of 50 (83.7% and 59.3%). Significant differences were observed, such as GDB occurs more often in men at the age of 41–50 years, whereas in women it occurs more often at the age of 51–60 years ($p < 0.05$). Bleeding activity according to Forrest did not depend on gender ($p > 0.05$).

Conclusion. The risk of bleeding among both women and men is higher over the age of 50. At the same time, the activity of GDK does not depend on the gender and age of the patient.

Keywords: gastroduodenal bleeding, ulcer bleeding, bleeding epidemiology

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1. Introduction

Gastroduodenal bleeding (GDB) is the most common cause of endoscopic examination of patients. All GDB are divided into varicose and non-varicose causes. A common type of GDB is “non-varicose”, among which peptic ulcer of the stomach and duodenum prevails [1].

Despite the diagnostic and therapeutic possibilities of upper endoscopy, there is still a significant association of many risk factors in patients with GDB, among which the use of anticoagulants, hormones or non-steroidal anti-inflammatory drugs (NSAIDs), the presence of coagulopathy or liver disease, and the degree of obesity of the patient are often noted [2]. Some studies have indicated that women are more prone to bleeding due to hormonal differences [3]. As well as the risk of bleeding, frequent detection of GDB in people over 50 years of age is noted, and advanced age and the presence of comorbid diseases were risk factors for adverse outcomes in patients with GDB [4, 5]. However demographic data on the epidemiology of GDB are contradictory. This study aims to study demographic criteria in patients with upper ulcerative GDB (U-GDB) during primary endoscopic diagnosis in a single center.

2. Materials and Methods

The results of diagnostic esophagogastroduodenoscopy (EGDS) of 293 adult patients who applied with signs of GDB to the Emergency Department of the “Aktobe Medical Center” from January 2020 to December 2021 were retrospectively analyzed.

All 293 patients were with primary EGDS. During EGDS examination, the patients bleeding

activities were assessed according to the Forrest classification [6].

The study included 231 patients with U-GDB, it excluded patients with gastric cancer and ulcers of gastrojejunal anastomosis (after gastric resection surgery). In the study, depending on the gender of the patients, the frequency of the etiology of U-GDB, the frequency of occurrence of U-GDB by age, and the activity of U-GDB by Forrest classification were studied.

3. Results

The study included 231 patients with U-GDB. The demographic and clinical characteristics of both sexes in terms of etiology and bleeding activity with U-GDB are shown in Table 1.

The 135 women and 96 men were under primary EGDS. The age of patients ranged from 20 to 90 years, on average 55.8 ± 12.1 years. The majority of patients with U-GDB were women – 57.7% (135 patients). Duodenal ulcer was the predominant cause of GDB in both groups, 61.5% in women and 54.2% in men. Active bleeding of Forrest-I was detected in only 8 (3.4%) patients: 3 among women, 5 among men. Among all women and all men, Forrest-II bleeding was detected in 126 (93.4%) and 86 (89.6%) patients, respectively. At the same time, the proportion of Forrest-III GDB is relatively the same in women and men, 6 (4.4%) and 5 (5.2%) patients, respectively.

We found that in both women and men, U-GDB is most common over the age of 50: 83.7% among women and 59.3% among men (Table 2). Among both women and men, U-GDB were the least common over the age of 70.

However, significant differences were observed in the fact that U-GDB occurs more often in men at the age of 41–50 years, and more often in women

TABLE 1: Common comparative characteristics of ulcer GDB depending on gender.

Factors	All	Women	Men
Number, n (%)	231	135 (57.7)	96 (42.3)
Age, mean \pm SD (year)	55.8 \pm 12.1	55.9 \pm 10.9	55.7 \pm 13.6
Etiology, n (%)			
gastric ulcer	88 (38.1)	50 (37.0)	38 (39.6)
gastric antrum ulcer	8 (3.5)	2 (1.5)	6 (6.2)
duodenal ulcer	135 (58.4)	83 (61.5)	52 (54.2)
Bleeding activity by Forrest, n (%)			
IA	4 (1.7)	2 (1,5)	2 (2,1)
IB	4 (1.7)	1 (0,7)	3 (3,1)
IIA	0	0	0
IIB	114 (49.4)	61 (45,2)	53 (55,3)
IIC	98 (42.4)	65 (48,2)	33 (34,3)
III	11 (4.8)	6 (4,4)	5 (5,2)

TABLE 2: Comparative characteristics of U-GDB frequency depending on age.

Age	All	Women	Men	<i>p-value</i>
All, n (%)	231	135 (57.7)	96 (42.3)	
20–40 year	20 (8.7)	10 (7.4)	10 (10.4)	0.42
41–50 year	41 (17.8)	12 (8.9)	29 (30.2)	< .00001
51–60 year	80 (34.6)	65 (48.1)	15 (15.6)	< .00001
61–70 year	74 (32.0)	41 (30.4)	33 (34.4)	0.52
>71 year	16 (6.9)	7 (5.2)	9 (9.4)	0.21

TABLE 3: Comparative characteristics of ulcer GDB etiology in both groups depending on age.

Etiology	Women, n (%)						Men, n (%)						All	<i>p-value</i>
	All	20–40 year	41–50 year	51–60 year	61–70 year	>71 year	All	20–40 year	41–50 year	51–60 year	61–70 year	>71 year		
All	135	10	12	65	41	7	96	10	29	15	33	9	231	0.50
Gastric ulcer	50	6 (60)	5 (41.7)	10 (15.4)	25 (61)	4 (57.1)	37	5 (50)	15 (51.7)	7 (46.7)	4 (12.1)	6 (66.7)	87	0.42
Gastric antrum ulcer	2	0	1 (8.3)	0	0	1 (14.3)	6	0	5 (17.3)	0	1 (3.1)	0	8	0.92
Duodenal ulcer	83	4 (40)	6 (50)	55 (84.6)	16 (39)	2 (28.6)	53	5 (50)	9 (31.0)	8 (53.3)	28 (84.8)	3 (33.3)	136	1

at the age of 51–60 years, $p < 0.05$ (Table 3). Gastric U-GDK occurs in women more often at the age of 61–70 years, while in men at 41–50 years. While duodenal GDK is more common in women aged between 51 and 60 years, and in men 61–70 years. Gastric antrum ulcers were rare in both groups.

Bleeding activity according to Forrest did not depend on gender in all ages, $p > 0.05$ (Table 4). At the same time, Forrest-II bleeding activity is the most common condition of U-GDK in both gender groups during primary EGDS.

TABLE 4: Comparative characteristics of U-GDB frequency by Forrest classification in both groups depending on age.

Forrest classification	Women						Men						All	p-value
	All	20–40 year	41–50 year	51–60 year	61–70 year	>71 year	All	20–40 year	41–50 year	51–60 year	61–70 year	>71 year		
All, n	135	10	12	65	41	7	96	10	29	15	33	9	231	
F-IA	2	1	-	1	-	-	2	-	2	-	-	-	4	0.83
F-IB	1	-	-	1	-	-	3	-	2	-	-	1	4	0.6
F-IIB	61	5	5	28	19	4	53	3	15	5	26	4	114	0.6
F-IIC	65	4	5	35	18	3	33	4	10	9	6	4	98	1
F-III	6	-	2	-	4	-	5	3	-	1	1	-	11	1

4. Discussion

In this study, age and gender were studied as risk factors for U-GDB. Both women and men had the most bleeding at the age of 51–70 years. Moreover, U-GDB was more common in women between 51 and 60 years old, while 61–70 years old, in men. Bleeding from gastric ulcers was observed more (60.8%) at the age of 20–50 years, whereas duodenal ulcers (68.9%) at 51–70 years. Over the age of 70, gastric ulcer was a common cause of GDB - 62.5%. Similar indicators were obtained in some other studies [5, 7, 8]. However, in these studies, authors also included GDB of non-ulcer etiology.

Both in women and men, regardless of age, bleeding activity was detected endoscopically according to Forrest-IIB and Forrest-IIC classes (49.3% and 42.4%, respectively). In both gender groups, duodenal ulcers were more often the source of bleeding – 61.5% in women and 54.2% in men. These indicators correspond to the widespread data on the epidemiology of ulcer diseases [9].

This study had some limitations. First, concomitant diseases were not taken into study data, which is especially, important in middle-aged and elderly patients, and the size of gastric and duodenal ulcers. Second, another limitation the

presence of certain concomitant diseases can cause complications of peptic ulcer disease in the form of GDB [10]. And next limitation, the size of ulcers can also be an independent predictor and risk factor for the occurrence and incident of GDB [11].

5. Conclusion

In this study, we found that the risk of bleeding among women and men is higher over the age of 50. At the same time, the activity of ulcerative GDB does not depend on the gender and age of the patient. Thus, age and gender can be prognostic risk factors for GDB if there is an appropriate history to prevent bleeding of upper ulcerative etiology. Moreover, regarding the dependence of GDB on age and gender, a study on a large cohort of patients is necessary.

Conflict of Interest

The authors declare that there is no conflict of interest.

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