Acute upper gastrointestinal bleeding (AUGIB) remains a common emergency and potentially fatal situation that requires hospitalization. The incidence of AUGIB varies between 50-150 hospital admissions per 100,000 population in a year\[1-5\] (approximately 1% of all emergency room admissions).

Approximately 45–60% of admissions for AUGIB worldwide are due to peptic ulcers followed by esophagitis and esophageal varices.\[5,6\] Although, H. pylori infection has been one of the most common causes of peptic ulcer disease, and eventually AUGIB, in the developing countries in the last few years, it seems that due to better sanitation, better diagnostic and therapeutic approaches, rate of AUGIB secondary to H. pylori infection has been decreased.\[4,7,8\] On the other hand, excessive usage of low dose aspirin for primary or secondary prevention of atherosclerotic heart and brain diseases, increasing life expectancy and so increasing rate of degenerative joint disease and osteoarthropathies and excessive ingestion of other nonsteroidal antiinflammatory drugs (NSAIDs), may change the incidence, age of presentation, site of bleeding and outcome of patients with nonvariceal AUGIB in the last decade.\[7,8\]

It seems that better sanitation, vaccination against Hepatitis B virus, prophylactic using of propranolol, esophageal band ligation and liver transplantation has changed the incidence of esophageal variceal bleeding.\[9\]

Common use of high dose proton pump inhibitors, better availability of diagnostic and therapeutic endoscopy and increasing cost of hospitalization may change the economic burden of AUGIB.\[10\]

Despite the fact that epidemiologic data are important to get insight into the actual situation,\[11\] there is no epidemiologic survey regarding AUGIB in our area.

The aim of this study was to survey the etiology and clinical outcome of AUGIB in referred and already hospitalized patients of two hospitals in Shiraz.

**MATERIALS AND METHODS**

We prospectively evaluated clinical characteristics, cause of
bleeding and clinical outcome, of 383 referred (de novo) and 189 already admitted (inpatients) referred to the Faghihi Hospital and Namazi Hospital.

**Patients**

*De novo* patients: All adult patients (≥16 years old) who were admitted in emergency room with impression of AUGIB by internal medicine residents for more than 8 hours, were included in the study. All patients were admitted with a history of malaena or hematemesis on the day of admission.

**Ongoing hematemesis/melena**

This was defined as a history of melena/hematemesis several days before admission and decrease in the hemoglobin level (>1 gm/dl), shock (blood pressure <90/60 mmHg in supine position), pallor, orthostatic hypotension (>20 mmHg decrease in systolic blood pressure or >10 mmHg in diastolic blood pressure from supine to standing position), or anemia (hemoglobin < 12 gm/dl and <14 gm/dl in female and male respectively), insertion of nasso-gastric tube and suction of fresh blood or coffee-ground materials without clearance of gastric washing by 250 cc of isotonic solution and exclusion of other causes of false AUGIB, such as bleeding from upper respiratory tract, nose bleeding, bleeding from paranasal sinuses, etc.

In-hospital patients: AUGIB in hospital adult (≥16 years old) patients were confirmed with nonclearance of gastric washing by 250 cc of isotonic solution and positive stool occult blood test and no evidence of active bleeding from upper respiratory tract.

After enrolment in the study, a questionnaire including demographic data, important points in the history, physical exam and laboratory tests such as history of acid peptic disease, presence of cirrhosis, cause of cirrhosis, NSAID use, regular ingestion of low dose aspirin, previous history of AUGIB and cause of it, co-morbidities, ongoing vital signs, pallor, organomegaly, ascites, ongoing and 6 hour after admission hemoglobin (Hgb), activated prothrombin time (PT), platelet (Plt), partial thromboplastin time (PTT) etc was filled by research assistants. Upper GI endoscopy was performed by our on-call fellow or attending physician within 24 hours of admission. There was a daily follow-up of patients after admission and up to 15 days after being discharged from hospital. End points including mortality, re-bleeding in hospital and within 15 days after discharge, blood transfusion and surgery were registered.

**Statistical analysis**

Statistical package for social sciences (SPSS, version 15.0; Chicago, IL, USA) and Epi Info 2000 programs were used for data analysis. Student T-test was used for quantitative and Chi-square and Fisher exact tests were used for qualitative variables.

**RESULTS**

Five hundred and seventy two patients (including 383 *de novo* and 189 in-hospital) entered the study, of which 377 (66%) were male. The mean age of our patients was 54.9 years (±SD: 18.7). Other demographic data are shown in Table 1.

The most common symptom on presentation was hematemesis or coffee-ground vomits (68%) followed by melena (38%) in our patients. Sixteen percent of our patients gave history of acid peptic disease and 75% of them consumed low dose aspirin or other NSAIDs (except for celecoxib) regularly. Other basic histories are shown in Table 1. On admission, 42% of our patients had orthostatic hypotension, with a mean hemoglobin level of 10.9 gm/dl [Table 2].

Gastric ulcer was the most common finding in upper endoscopy. One hundred and seventy three patients had gastric ulcer (124/383, 32% and 49/189, 26% of *de novo* and in-hospital patients, respectively). The most common site was lesser curvature (57/173, 33%) and only 87/173 (50%) of these ulcers fulfilled criteria of low risk ulcer for re-bleeding. Duodenal ulcer was present in 93 patients (62/383, 16%, and 31/189, 16% of *de novo* and in-hospital patients, respectively). The most common site was head of the pancreas (54/173, 31%) and only 87/173 (50%) of these ulcers fulfilled criteria of low risk ulcer for re-bleeding. Esophageal varices were found in 64 patients (47/383, 12% and 17/189, 9% of *de novo* and in-hospital patients respectively). Eight of these patients had gastric ulcer (fiver Clean-based, one with oozing of blood from ulcer bed, and three with visible vessel) and five of them had clean based duodenal ulcer. Less than 10% of our patients had gastritis or Mallory-Weiss’ tears as the causes of AUGIB and 99/572 (17%) of our patients had normal upper endoscopy [Table 3].

Injection therapy and/or argon plasma coagulation was done for 54 patients with high risk ulcers and 12 (22%) of them had high risk ulcers in second look endoscopy. Blood transfusion was required in 197 patients and finally, mortality rate of our patients was 6% for *de novo* and 7% for in-hospital patients respectively [Table 4].

The mortality rate was higher in older patients, patients with orthostatic hypotension on arrival and patients who consumed steroids [Table 5].

Analysis showed that mortality was directly related to increase in age [Table 6].

Comparison between ≤60 and >60 years old patients
showed that older patients had more serious presentations (hematemesis or coffee-ground vomits, orthostatic hypotension or shock on arrival). They consumed aspirin, alcohol, steroids, warfarin, smoked water-pipe and cigarettes more than younger patients and eventually, acid peptic disease as the cause of AUGIB was more frequent in older patients [Table 7]. Thirty four patients who consumed steroids in this age group, also consumed aspirin or other NSAIDs and seven of these patients died. Acid peptic disease as the cause/s of AUGIB was more frequently found in older patients [Table 7].

**DISCUSSION**

Because of shortcomings in records, this study was done prospectively with predefined strategy and goals in the two

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**Table 1: Comparison and common complaints of patients with upper gastrointestinal bleeding**

|                      | Whole No.: 572 (%) | de novo No.: 383 (%) | In-hospital No.: 189 (%) | P value (de novo vs. In-hospital) |
|----------------------|--------------------|-----------------------|--------------------------|----------------------------------|
| **Sex**              |                    |                       |                          |                                  |
| Male                 | 377 (66)           | 257 (67)              | 120 (64)                 | NS*                              |
| Female               | 195 (34)           | 126 (33)              | 69 (36)                  |                                  |
| **Mean age/yr (±SD)**| 54.9 (18.7)        | 55 (18.8)             | 54.8 (18.7)              | NS                               |
| **History related to bleeding** |                    |                       |                          |                                  |
| Melena               | 217 (38)           | 147 (38)              | 70 (37)                  | NS                               |
| Hematemesis or coffee-ground vomitus | 390 (68)           | 263 (69)              | 127 (67)                 | NS                               |
| Fainting or dizziness| 77 (14)            | 54 (14)               | 23 (12)                  | NS                               |
| Hematochezia         | 22 (4)             | 15 (4)                | 7 (4)                    | NS                               |
| **Previous history of** |                    |                       |                          |                                  |
| Duodenal ulcer       | 24 (4)             | 16 (4)                | 8 (4)                    | NS                               |
| Gastric ulcer        | 67 (12)            | 49 (13)               | 18 (10)                  | NS                               |
| Portal hypertension  | 12 (2)             | 6 (2)                 | 6 (3)                    | NS                               |
| Cirrhosis            | 38 (7)             | 29 (8)                | 9 (5)                    | NS                               |
| GI bleeding          | 66 (12)            | 47 (12)               | 19 (10)                  | NS                               |
| **Co-morbidities**   | 400 (70)           | 254 (66)              | 146 (72)                 | 0.007                            |
| Ischemic heart disease| 34 (6)             | 20 (8)                | 14 (10)                  | NS                               |
| Renal failure        | 9 (2)              | 6 (2)                 | 3 (2)                    | NS                               |
| Cerebro-vascular accident | 37 (9)             | 28 (11)               | 9 (6)                    | NS                               |
| Malignancies         | 37 (9)             | 23 (9)                | 14 (10)                  | NS                               |
| Hypertension         | 87 (22)            | 63 (25)               | 24 (16)                  | 0.05                             |
| Trauma               | 22 (6)             | 9 (4)                 | 13 (9)                   | 0.02                             |
| Others               | 174 (44)           | 105 (41)              | 69 (47)                  | NS                               |
| **History of drug consumption** |                    |                       |                          |                                  |
| ASA                  | 172 (30)           | 118 (31)              | 54 (29)                  | NS                               |
| Celecoxib            | 10 (2)             | 6 (2)                 | 4 (2)                    | NS                               |
| Other NSAIDs         | 255 (45)           | 166 (44)              | 89 (47)                  | NS                               |
| Steroids*            | 53 (9)             | 31 (8)                | 22 (12)                  | NS                               |
| Warfarin             | 42 (7)             | 29 (8)                | 13 (7)                   | NS                               |
| Alcohol consumption  | 48 (8)             | 34 (9)                | 14 (7)                   | NS                               |
| **History of smoking or addiction** |                    |                       |                          |                                  |
| Water-pipe           | 139 (24)           | 91 (24)               | 48 (25)                  | NS                               |
| Cigarette            | 199 (35)           | 137 (36)              | 62 (33)                  | NS                               |
| Morphine derivatives | 35 (6)             | 26 (7)                | 9 (5)                   | NS                               |

* NS means statistically not significant, $: 45/53 of these patients consumed NSAIDs (16 of them, low dose aspirin and 25 others consumed other types of NSAIDs) concomitantly

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**Table 2: Clinical features on admission and primary laboratory results of patients with de novo upper gastrointestinal bleeding**

| Test                                | Result | No.: 383 (%) |
|-------------------------------------|--------|--------------|
| Orthostatic hypotension*            | 155 (42) |
| Shock*                              | 8 (2)          |
| Splenomegaly                        | 28 (7)          |
| Mean hemoglobin/gm/dl (±SD)         | 10.9 (2.5) |
| Abnormal prothrombin time           | 69 (18) |
| Abnormal partial thromboplastin time| 67 (18) |
| Mean platelet/mm³ (±SD)             | 215227 (103790) |
| Mean creatinine/mg/dl (±SD)         | 1.8 (5.3) |

* Drop of 20 mmHg or 10 mmHg in systolic or diastolic blood pressure respectively after 3 minutes sitting, $: Blood pressure < 90/60 mmHg
largest referral centers in southern Iran i.e., Faghihi and Namazi Hospitals.

Only patients who were admitted in hospital for a minimum of 8 hours were considered for the study and followed up to the end point, so automatically patients with minor bleeding were excluded. As a result, in our study the most common presentation of AUGIB was hematemesis or vomiting of coffee-ground material in both de novo and in-hospital patients [Table 1]; orthostatic hypotension was seen in 291 (51%) of patients, the most common cause of AUGIB was acid peptic disease and not gastritis (such as study of Boonpongmanee S. et al[5]), and only 63/173 (36%) of gastric ulcers and 46/93 (49%) of duodenal ulcers were clean-based.

As a developing country, statistical analysis of demographic data in this survey showed that there is no difference between our results in sex (66% male) and mean age (54.9 year old) in comparison with the same studies in developed countries.[2,4]

Due to progressive and drastic changes in medical and health care systems, the age and life expectancy of general population has been increasing in Iran, and in this way some of the common geriatric problems such as coronary artery disease, degenerative joint disease and osteoarthropathies and eventually excessive consumption of all kinds of NSAIDs and low dose aspirin as main standard therapies has increased. It seems that this expansive usage of these drugs led to increasing rate of GU as a cause of AUGIB and this may be comparable with results of Enestvedt et al.[1] On the other hand, according to the above facts and considering the effective newer and widespread management of H. pylori as a major cause of peptic ulcer and gastric cancer, introducing gastric ulcer as a new leading cause of AUGIB is confirmed by our study (GU 30%, DU 16%).[10,12]

Meanwhile, the decreasing rate of variceal bleeding (11%) may be explained by the extensive usage of effective drugs for chronic hepatitis/cirrhosis caused by hepatitis B and C viruses and autoimmune hepatitis, in addition to a vast usage of propanolol and rubber band ligation as primary prevention methods for variceal bleeding.

| Table 3: Result of primary endoscopy in de novo and in-hospital patients with upper gastrointestinal bleeding |
|---------------------------------------------------------------|------------------|------------------|
| Abnormal findings in esophagus | 177 (31) | 53 (28) |
| Varices | 47 | 17 |
| GERD | 23 | 14 |
| Other esophagitis | 8 | 3 |
| Mallory-Weiss’s tears ± ulcer | 34 | 13 |
| Mass | 5 | 6 |
| Abnormal findings in stomach | 150 (39) | 58 (31) |
| Ulcer | 124 | 49 |
| Site of ulcer | Cardia | Fundus | Lesser curvature | Greater curvature | Antrum | Pre-pyloric area and pylorus |
| | 9 | 32 | 38 | 22 | 11 | 12 |
| Description of ulcer/s | Clean based | With simple clot | With oozing of blood from ulcer bed | With adherent clot | With visible vessel | With spurting artery | Gastritis | Mass | Vascular ectasia |
| | 41 | 19 | 34 | 13 | 13 | 4 | 16 | 6 | 4 |
| Abnormal findings in duodenum | 63 (16) | 32 (17) |
| Ulcer | 62 | 31 |
| Description of ulcer/s | Clean based | With simple clot | With oozing of blood from ulcer bed | With adherent clot | With visible vessel | With spurting artery | Vascular ectasia | Mass | |
| | 34 | 4 | 12 | 4 | 4 | 1 | 1 | 0 | |
| Normal | 53 (14) | 46 (24) |

*: 13/64 of these patients had concomitant gastric and/or duodenal ulcer

| Table 4: End points in de novo and in-hospital patients with upper gastrointestinal bleeding |
|---------------------------------------------------------------|------------------|------------------|------------------|
| Injection therapy ± APC of ulcer | Whole No.: 572 | de novo No.: 383 | In hospital No.: 189 |
| | | | |
| Sclerotherapy of esophageal varices | 54 | 42 | 12 |
| Rubber band ligation | 53 | 40 | 13 |
| Blood transfusion | 11 | 7 | 4 |
| Re-endoscopy | 197 | 98 | 99 |
| High risk ulcers in re-endoscopy | 76 | 39 | 37 |
| Mean hospital staying /day (±SD) | 3.7 (4.4) | 2.4 (2.2) | 6.3 (6.3) |
| Death in hospital due to acute UGI bleeding | 36 (6%) | 22 (6%) | 14 (7%) |
Comparing similar studies,[13] the reduction in hospital stay, from a standard 5.5 days to 2.2 days, can be explained by better management of AUGIB.

Mortality rate of AUGIB in our centers was comparable to centers in developed countries.[3,14] We compared some of the data between alive and deceased patients.

The first finding was mean age (54 vs. 65 years, \( P = 0.001 \)). Mortality rate was significantly different for \( \leq 60 \) years (4%) versus >60 years (10%, \( P = 0.003 \)). Further analysis showed that this finding may be secondary to more blood loss before referral [Table 7] and frequent consumption of aspirin or other anticoagulants.\(^{3,14} \) Further, this is also secondary to concomitant diseases such as:

### Table 5: Comparison between alive and deceased patients with upper gastrointestinal bleeding

|                         | Whole No.: 572 (%) | Alive No.: 536 (%) | Deceased No.: 36 (%) | \( P \) value (Alive vs. deceased) |
|-------------------------|--------------------|--------------------|----------------------|-----------------------------------|
| **Sex**                 |                    |                    |                      |                                   |
| Male                    | 377 (66)           | 351 (65)           | 26 (72)              | NS\(^*\)                          |
| Female                  | 195 (34)           | 185 (35)           | 10 (28)              |                                   |
| **Mean age (±SD)**      | 54.9 (18.7)        | 54.2 (18.7)        | 64.8 (16.3)          | 0.001                             |
| **History related to bleeding** |                  |                    |                      |                                   |
| Melena                  | 217 (38)           | 200 (38)           | 17 (47)              | NS                                |
| Hematemesis or coffee-ground vomitus | 390 (68) | 367 (69)       | 23 (64)              | NS                                |
| Fainting or dizziness  | 77 (14)            | 72 (13)            | 5 (14)               | NS                                |
| Hematochezia            | 22 (4)             | 22 (4)             | 0                    | NS                                |
| **Previous history of** |                    |                    |                      |                                   |
| Duodenal ulcer          | 24 (4)             | 23 (4)             | 1 (3)                | NS                                |
| Gastric ulcer           | 67 (12)            | 59 (11)            | 8 (22)               | 0.04                              |
| Portal hypertension     | 12 (2)             | 12 (2)             | 0 (0)                | NS                                |
| Cirrhosis               | 38 (7)             | 36 (7)             | 2 (6)                | NS                                |
| GI bleeding             | 66 (12)            | 61 (11)            | 5 (14)               | NS                                |
| Peptic ulcer            | 6                  | 6                  | 0                    | NS                                |
| Varices                 | 49                 | 44                 | 5                    | NS                                |
| **Co-morbidities**      | 400 (70)           | 370 (69)           | 30 (83)              | NS                                |
| Ischemic heart disease  | 34                 | 32                 | 2                    | NS                                |
| Renal failure           | 9                  | 8                  | 1                    | NS                                |
| Cerebro-vascular accident | 37               | 36                 | 1                    | NS                                |
| Malignancies            | 37                 | 35                 | 2                    | NS                                |
| Hypertension            | 87                 | 80                 | 7                    | NS                                |
| Trauma                  | 22                 | 19                 | 3                    | NS                                |
| Others                  | 174                | 160                | 14                   | NS                                |
| **History of drug consumption:** |                  |                    |                      |                                   |
| ASA                     | 172 (30)           | 161 (30)           | 11 (31)              | NS                                |
| Celecoxib               | 10 (2)             | 10 (2)             | 0                    | NS                                |
| Other NSAIDs            | 255 (45)           | 239 (45)           | 16 (44)              | NS                                |
| Steroids                | 53 (9)             | 43 (8)             | 10 (28)\(^*\)       | 0.001                             |
| Warfarin                | 42 (7)             | 39 (7)             | 3 (8)                | NS                                |
| Mean second hemoglobin(gm/dl) | 10.9             | 10.9               | 10.8                 | NS                                |
| Orthostatic hypotension on arrival | 291 (51) | 267 (50)       | 24 (67)              | 0.018                             |
| Abnormal prothrombin time | 101 (18)        | 94 (18)            | 7 (19)               | NS                                |
| Partial thromboplastin time | 104 (18)     | 96 (18)            | 8 (23)               | NS                                |
| **Endoscopic findings** |                    |                    |                      |                                   |
| Esophageal varices      | 64 (11)            | 59 (11)            | 5 (14)               | NS                                |
| GERD                    | 37 (6)             | 35 (7)             | 2 (6)                | NS                                |
| Esophageal ulcer        | 47 (8)             | 44 (8)             | 3 (8)                | NS                                |
| Esophageal mass         | 11 (2)             | 10 (2)             | 1 (3)                | NS                                |
| Gastric ulcer           | 173 (30)           | 163 (30)           | 10 (28)              | NS                                |
| Gastritis               | 18 (3)             | 14 (3)             | 4 (11)               | 0.02                              |
| Mass                    | 10 (2)             | 8 (1)              | 2 (6)                | NS                                |
| Duodenal ulcer          | 93 (16)            | 89 (17)            | 4 (11)               | NS                                |
| **Hospital staying/day in de novo patients** | 2.4             | 2.4               | 3.3                  | 0.045                             |

\(^*\): NS means statistically not significant, \(^*\): 7/10 of these patients consumed aspirin or other NSAIDs concomitantly
as ischemic heart disease and cerebro-vascular accident, which have a higher frequency in older patients. Acid peptic disease as the major cause of AUGIB was more frequent in older patients (40% in younger vs 49% in older patients respectively, \( P = 0.028 \)). The second finding in deceased patients was past history of steroids usage which also was statistically different (8% in alive Vs 28% in deceased patients respectively, \( P = 0.001 \)). External steroids, by themselves, are not harmful for stomach or duodenum but concomitant use of steroids and NSAIDs usually increase the risk of gastric and duodenal ulceration and AUGIB.\(^{15}\) Our study showed (just like Shorr \textit{et al} findings)\(^{16}\) that concomitant use of steroids and NSAIDs may also increase the mortality secondary to AUGIB in this subset of patients. 45 out of 53 (85%) steroids users concomitantly used NSAIDs, while 7 out of 10 died due to AUGIB.

Acute (15-day) mortality rate in patients with esophageal variceal bleeding (5/64, 8%) was comparable with other nonvariceal causes such as acid peptic disease (13/252, 5%) and this may be secondary to better management of these patients and/or use of newer therapeutic modalities to stop the bleeding in this group. This result agrees with findings of Chalasani \textit{N et al}.\(^{9}\)

### Table 6: The mortality rate and age of patients with upper gastrointestinal bleeding

| Age group in years (mortality %) | Alive | Deceased |
|---------------------------------|-------|----------|
| <50 (4)                         | 206   | 8        |
| 50–59 (3)                       | 97    | 3        |
| 60–69 (6)                       | 104   | 7        |
| 70–79 (14)                      | 80    | 13       |
| 80–89 (9)                       | 50    | 5        |
| ≥90 (0)                         | 2     | 0        |
| ≤60 (4)*                        | 300   | 11       |
| >60 (10)                        | 236   | 25       |

* Mortality rate between ≤60 years old patients and higher than 60 years old patients were significant (\( P \) value: 0.003)

### Table 7: Comparison between younger (≤60 years) and older (>60 years) patients with upper gastrointestinal bleeding

|                           | ≤60 years No: 311 (%) | >60 years No: 261 (%) | \( P \) value |
|---------------------------|-----------------------|-----------------------|---------------|
| Male/Female               | 205/106               | 172/89                | NS*           |
| de novo/In hospital       | 207/104               | 176/85                | NS            |
| Melena                    | 127 (41)              | 90 (34)               | NS            |
| Hematemesis or coffee ground vomitus | 200 (64)       | 190 (73)              | 0.019         |
| Co-morbidities            |                       |                       |               |
| Ischemic heart disease    | 14 (5)                | 20 (8)                |               |
| Cerebrovascular accident  | 5 (2)                 | 32 (12)               |               |
| Hypertension              | 25 (8)                | 62 (24)               |               |
| Trauma                    | 17 (5)                | 5 (2)                 |               |
| NSAID consumption         | 191 (61)              | 246 (94)              | 0.0001        |
| ASA                       | 44 (14)               | 128 (49)              | 0.0001        |
| Celecoxib                 | 5 (2)                 | 5 (2)                 | NS            |
| Other NSAIDs              | 142 (46)              | 113 (43)              | NS            |
| Steroid consumption       | 13 (4)                | 40 (15)\(^{4}\)       | 0.0001        |
| Warfarin consumption      | 11 (4)                | 31 (12)               | 0.0001        |
| Alcohol consumption       | 19 (6)                | 29 (11)               | 0.035         |
| Water pipe smoking        | 49 (16)               | 90 (34)               | 0.0001        |
| Cigarette smoking         | 92 (30)               | 107 (41)              | 0.005         |
| Orthostatic hypotension on arrival | 146 (48)    | 145 (57)              | 0.027         |
| Shock on arrival          | 8 (3)                 | 18 (7)                | 0.015         |
| Major causes of bleeding  |                       |                       |               |
| Esophageal varices         | 36 (12)               | 28 (11)               | NS            |
| GERD                      | 25 (8)                | 12 (5)                | NS            |
| Mallory-Weiss' tear/ulcer | 22 (7)                | 25 (10)               | NS            |
| Esophageal mass            | 4 (1)                 | 7 (3)                 | NS            |
| Gastric ulcer             | 86 (28)               | 86 (33)               | 0.03          |
| Gastritis                 | 12 (4)                | 6 (2)                 | NS            |
| Gastric mass              | 6 (2)                 | 4 (2)                 | NS            |
| Duodenal ulcer            | 44 (14)               | 49 (19)               | 0.04          |
| Gastric ulcer and/or duodenal ulcer | 124 (40)    | 128 (49)              | 0.028         |

\( ^{*} \) NS: Statistically not significant, \( ^{4} \): 34/40 of these patients consumed aspirin (13 patients) or other NSAIDs (23 patients) concomitantly and 7/10 of patients who concomitantly consumed aspirin (2/10) or other NSAIDs (5/10) and steroids deceased
In conclusion, it appears that the most common cause of AUGIB is acid peptic disease, which increases with the age of the patient, and frequent consumption of NSAIDs, and gastric ulcer as the main source of bleeding may be NSAIDs induced. It is therefore suggested to take a thorough history pertaining to acid peptic disease, before the start of aspirin, and decrease the threshold of performing upper gastrointestinal endoscopy and possibly prescription of proton pump inhibitors especially in high risk groups (older age, concurrent anticoagulant, or steroid users, etc). Furthermore eradication of H. pylori prior to starting aspirin or other NSAIDs may decrease the rate of AUGIB secondary to acid peptic disease. Finally, in this regard, consideration of international recommendations on starting aspirin or other NSAIDs will be helpful.

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References

1. Enestvedt B, Gralnek I, Mattek N, Lieberman D, Eisen G. An evaluation of endoscopic indications and findings related to nonvariceal upper-GI hemorrhage in a large multicenter consortium. Gastrointest Endosc 2008;67:422-9.
2. Theocharis G, Thomopoulous K, Sakellaropoulos G, Katsakoulis E, Nikolopoulos V. Changing trends in the epidemiology and clinical outcome of acute upper gastrointestinal bleeding in a defined geographical area in greece. J Clin Gastroenterol 2008;42:128-33.
3. Hawkey CJ. Non-steroidal anti-inflammatory drugs: Who should receive prophylaxis? Aliment Pharmacol Ther 2004;20:59-64.
4. Thomopoulous K, Vagenas K, Vagianos C, Maragaritis VG, Blikas AP, Katsakoulis EC, et al. Changes in aetiology and clinical outcome of acute upper gastrointestinal bleeding during the last 15 years. Eur J Gastroenterol Hepatol 2004;16:177-82.
5. Paspatis GA, Martella E, Kapsoritakis A, Leonitiadis C, Papankolaou N, Chlouverakis GJ, et al. An Epidemiological study of acute upper gastrointestinal bleeding in Crete, Greece. Eur J Gastroenterol Hepatol 2000;12:1215-20.
6. Rockall TA, Logan RF, Devlin HB, Northfield TC. Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom: Steering Committee and members of the national Audit of Acute Upper Gastrointestinal Haemorrhage. BMJ 1995;311:222-6.
7. Boonpongmanee S, Fleischer D, Pezzullo J, Collier K, Mayoral W, Al-Kawas F, et al. The frequency of peptic ulcer as a cause of upper-GI bleeding is exaggerated. Gastrointest Endosc 2004;59:788-94.
8. Lewis J, Bilkier W, Brensinger C, Farrar J, Storm B. Hospitalization and mortality rates from peptic ulcer disease and GI bleeding in the 1990s: Relationship to sales of Nonsteroidal anti-inflammatory drugs and acid suppression medications. Am J Gastroenterol 2002;97:2546-9.
9. Chalasani N, Kahi C, Francois F, Pinto A, Marathe A, Bini E, et al. Improved patient survival after acute variceal bleeding: A multicenter, Cohort study. Am J Gastroenterol 2003;98:653-9.
10. Barkun A, Sabbah S, Enns R, Armstrong D, Gregor J, Fedorak R, et al. The Canadian registry on nonvariceal upper gastrointestinal bleeding and endoscopy (RUGBE): Endoscopic hemostasis and proton pump inhibition are associated with improved outcomes in real-life setting. Am J Gastroenterol 2004;99:1238-46.
11. Van Leerdom ME. Epidemiology of acute gastrointestinal bleeding. Best Pract Res Clin Gastroenterol 2008;22:209-24.
12. Peura DA, Lanza FL, Gostout CJ, Foutch PG. The American college of gastroenterology bleeding registry: Preliminary finding. Am J Gastroenterol 1997;92:924-8.
13. Lee JG, Turnipseed S, Romano PS, Vigil H, Azari R, Melnikoff N, et al. Endoscopy-based triage significantly reduces hospitalization rates and costs of treating upper GI bleeding: A randomized control trial. Gastrointest Endosc 1999;50:755-61.
14. Higham J, Kang JY, Majeed A. Recent trends in admission and mortality due to peptic ulcer in England: Increasing frequency of hemorrhage among older subjects. Gut 2002;50:460-4.
15. Lanza FL. A Guideline for the treatment and prevention of NSAID-induced ulcers. Am J Gastroenterol 1998;93:2037.
16. Shorr RJ, Ray WA, Daugherty JR, Griffin MR. Concurrent use of nonsteroidal anti inflammatory drugs and oral anticoagulants places elderly persons at high risk for hemorrhagic peptic ulcer disease. Arch Intern Med 1993;153:1665.

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