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## Upper Gastrointestinal Bleeding and the Importance of an Early Endoscopic Study for Diagnosis: A Retrospective Study

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### Abstract

**Objectives:** Determine if the time of early endoscopy modifies the patients evolution and hospitalization stay in patients with upper gastrointestinal bleeding.

**Design:** A retrospective and transversal study.

**Setting:** Primary care Hospital, in Tegucigalpa, Honduras. Participants we review a total of 115 medical records with diagnosis of upper gastrointestinal bleeding who attended the Emergency unit of the Social Security Institute Hospital in Tegucigalpa MDC Period from January 1 to December 31 of 2011.

**Results:** We registered 115 patients with diagnosis of upper gastrointestinal bleeding of whom 92.17% underwent upper endoscopy study. Early endoscopy was performed within 24 hours in 10.38% of patients, in this group the average hospitalization stay was 3.1 days. Early endoscopy within the first 24 hours significantly reduced ( $p=0.0001$ ) hospitalization stay. The mean length of hospital stay was 4.74 days.

The main etiology of upper gastrointestinal bleeding was non-variceal 64.1%. Peptic ulcer disease type Forrest III (clean base ulcer) was the most frequent in 77.78%. The mean hospitalization stay in patients with peptic ulcer disease type Forrest III was 4.6 days. No endoscopy study was performed in 9 patients of whom all died because of hemodynamic instability and lack of an emergency endoscopy unit in the hospital.

**Conclusion:** Early endoscopy determines the patient's evolution and hospitalization stay.

**Keywords:** Lung cancer; Pulmonary vein; Anatomical anomaly; Common trunk

### Introduction

A common presentation in the emergency departments worldwide are the upper gastrointestinal bleeding causing a great number of admissions in hospitals which in third world countries causes a huge impact in economy and becomes a big health issue. An upper gastrointestinal bleeding (UGIB) is defined as bleeding proximal to the band of Treitz and clinical presentation signs depends on the intensity of the bleeding starting from vomiting of blood (hematemesis) and/or passage of black, tarry stools (melena) and in severe cases hemorrhagic shock.

The common causes of UGIB are peptic ulcer disease including from the use of aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs), variceal hemorrhage, Mallory-Weiss tear and neoplasms including gastric cancer. Other relatively common causes include esophagitis, erosive gastritis/duodenitis, vascular ectasias and Dieulafoy's lesions. Approximately 10% to 20% of bleeding episodes are from esophageal, gastric or duodenal varices or from portal hypertensive gastropathy related to portal hypertension [1,2]. In a recent study peptic ulcer disease was the most common cause of bleeding representing 40% of cases and in most studies duodenal ulcers were more common than gastric ulcers [3].

This disease causes a major number of hospitals admissions in the United States, which is estimated at 300000 patients annually. Upper GI bleeding has an annual incidence that ranges from 40-150 episodes per 100000 persons and a mortality rate of 6% to 10%. Due to the incidence of UGIB an initial management should be fast, accurate and appropriate, management should be from pharmacologic acid suppression, endoscopic hemostatic techniques and recognition of

*Helicobacter pylori* as an etiologic agent in peptic ulcer disease [4].

One important factor in management for UGIB is the relevance of an early endoscopic diagnostic to identify the possible cause of bleeding resulting in decreasing the rate of mortality and the time of stay of admission in the hospital, international guides recommend the endoscopy study should be in the first 24 hours of admission [5,6].

## Methods

A retrospective and transversal study was made in the Specialties Hospital of the social security Institute Hospital of Tegucigalpa were the medical reports of the patients that were admitted in the emergency unit under the diagnosed of upper gastrointestinal bleeding, in the period between January 1<sup>st</sup> to December 31 in 2011.

To register the data from the medical reports a survey form was applied based on 25 closed questions about general data, comorbidities, past medical history, time from the admission to realize endoscopic exam, intrahospitalization days, findings and endoscopic procedures and condition upon discharge.

The sample obtained was of 115 patients which represented the total universe, from this all met the inclusion criteria which were the following: medical records of patients greater than 18 years old with the upper gastrointestinal bleeding diagnosed that attend to the adult's emergency unit of the social security institute hospital (IHSS) in 2011 also the endoscopic reports were reviewed for the procedure information then the data compiled was processed using Epi-INFO 2007 program (CDC).

## Results

For the research 115 patients medical records were studied from these by gender 60% (69) were men and 40% were women and the most common range age was the one from 50 to 59 years old representing the 26.96% (31).

From the total number of records the 73.9% (85) have active comorbidities and the most common was arterial hypertension with a 70.77% (46) followed by cirrhosis with (55.38% (36) and third place Diabetes (Table 1).

**Table 1** Co-morbidities.

Comorbidities	N	%
Arterial Hypertension	46	70.77%
Cirrhosis	36	55.38%
Diabetes Mellitus 2	18	27.69%
Cancer	7	10.77%
Rheumatoid Arthritis	2	3.08%

Dyslipidemia	2	3.08%
Thyroid disease	0	0.00%
Total	65	100.00%

Other important findings were that 101 patients present risk factors for upper gastrointestinal bleeding such as use of aspirin with 45.88% (78) followed by Alcohol 34.71% and use of NSAIDS 18.82%. As initial symptoms, the 69.5% present hematemesis and melena with 25.2%.

Endoscopic studies were made to the 92.17% (106) from all the patients from which 10.38% represent an early endoscopic study between the first 24 hours from admission (Table 2). The most common endoscopic findings were erosive gastritis 23.50% and small esophageal varices 22.60% and gastric ulcer with 20.70% (Table 3).

**Table 2** Time of endoscopy.

Time of Endoscopy	N	%
Less than 24 hours	11	10.38%
2 days	39	36.79%
3 days	40	37.74%
4 days	10	9.43%
More than 5 days	6	5.66%
Total	106	100%

**Table 3** Endoscopic findings.

Endoscopic Findings	N	%
Gastric Ulcer	22	20.70%
Duodenal Ulcer	4	3.70%
Erosive Gastritis	25	23.50%
Erosive esophagitis	6	5.60%
Mallory Weiss	3	2.80%
Small Esophageal Varices	24	22.60%
Big Esophageal Varices	12	11.30%
Gastric Neoplasm	5	4.71%
Vascular Malformations	3	2.80%
None	2	2.29%
Total	106	100%

The average time between admission and going to endoscopy was in the second and third day 74.5% and to the patients who received an early study the average time of hospitalization was of 3.1 days compared to the ones who

received the study 24 hours after being 4.74 days (p=0.0001) (Table 4).

**Table 4** Relation between hospitalization days and time of endoscopy.

Hospitalization days	Less than 24 hours	2 days	3 days	4 days	More than 5 days	Total
	N	N	N	N	N	N
1	0	0	0	0	0	0
2	3	0	0	0	0	3
3	5	7	0	0	0	12
4	2	16	13	1	0	32
5	1	10	15	5	0	31
6	0	2	8	0	1	11
7	0	2	1	2	2	7
8	0	0	1	2	1	4
9	0	2	2	0	1	5
10	0	0	0	0	1	1

Peptic ulcer was one important finding once the endoscopy was made between gastric and duodenal ulcers represent 26 of the cases a 24.4% and from this using the forrest classification III grade was the most frequent 77.78% (21) (Table 5), the average time of hospitalization with Forrest grade III was of 4.6 days (Table 6) and from the patients that received endoscopy in the first 24 hours, the discharge was in the second day of admission with 9.5% For management 99.13% (114) were treated with proton pump inhibitors, endoscopic intervention was made to the 11.4% (12) of the patients who received an endoscopy, elastic band ligation was realized in esophageal varices in 7 patients (58.3%) and adrenaline therapy in 5 patients (41.7%). From the total only two patients had indication for *Helicobacter pylori* and both cases were positive. The discharge condition was positive in the 86.96% (100) and 15 patients died from which 9 (7.82%) patients didn't received endoscopy for not being hemodynamically stable.

**Table 5** Forrest classification.

Forrest Classification	N	%
Ia	0	0.00%
Ib	2	7.41%
IIa	3	11.11%
IIb	0	0.00%
IIc	1	3.70%
III	21	77.78%
Not Classified	4	14.81%

Total	27	100.00%
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**Table 6** Relation between Forrest III stage and hospitalization days.

Hospitalization Days	Stage Forrest III Patients	
	N	%
1	0	0%
2	2	9.50%
3	2	9.50%
4	7	33.30%
5	6	28.50%
6	0	0%
7	2	9.50%
8	1	4.85%
9	0	0%
10	1	4.85%
Total	21	100%

## Discussion

Upper gastrointestinal bleeding is a common presentation in the Emergency department and one frequent diagnose for admission to the hospitals which causes high economic impact in one year we recollect 115 records of medical patients that present with UGIB, the principal objective of the research was to see how endoscopy in the first 24 hours of admission helps decrease the hospitalization stay by identifying and diagnosing the cause of bleeding and initiating a proper and targeted endoscopic treatment as literature says [7].

Other aspect to discuss is the presence of risk factor in UGIB we found that from the total patients 101 had a risk factor being the most common the use of aspirin, which in the last years has become an auto medicated drug for her activity in platelet aggregation and preventing cardiovascular events, however causing a risk in gastrointestinal bleeding one studied report a 40% risk in GI bleeding with low dose aspirin [8]. Other was the use of alcohol and NSAIDS which are well known in the role of causing gastrointestinal disease.

### The impact of an early endoscopy in UGIB

International Guidelines recommend early endoscopy within 24 hour of presentation, is safe and effective for all risk groups, allows timely diagnosis and treatment reduces use of resources and length of hospital stay and should be performed after hemodynamic stabilization [9]. In this research, 10.38% which represent 11 patient from the total received an endoscopy in the first 24 hours of admission and the average time of hospitalization of these patient was 3.1 days compared to the 74.5% who received the endoscopy in the second and third day who's hospitalization stay was an average of 4.74 days unlike what international guidelines recommend that should be less than 72 hours of hospitalization, this problem could be due to the public health system that face a huge amount of patients every day and that emergency departments don't have a gastrologist on call who can perform an endoscopy. An early endoscopy helps to diagnose and make proper management in peptic ulcers and variceal disease [10] but also can help decreasing economic cost in Honduras as each day cost an average of 4,172 lempiras.

Non-variceal upper gastrointestinal bleeding was the most common endoscopic findings represented by gastritis and peptic ulcer disease, which are the most common worldwide for peptic ulcer disease. Forrest classification was used to identify patients at risk of persistent ulcer bleeding, rebleeding and mortality the FIII stage which represent a clean base ulcer was the most frequent 77.78%, that with an early endoscopy or management would decrease the number of admission resulting in less costs compared to the 4.6 days of hospitalization [11].

The most known treatment in management of UGIB since their introduction is the proton pump inhibitor is the most effective as its reduces mortality following peptic ulcer bleeding and also in preventing low dose aspirin use associated to upper gastrointestinal ulcers and bleedings but also as preventing GI disease in relation with NSAIDS use, which are a common auto medicated drug in our population being most common in elderly from the total, 114 patients were treated with proton pump inhibitor as literature says and 86.96% had an effective discharge [12-14].

### Conclusion

As physicians, we should aim for an early endoscopic diagnose and targeted management in those patients who present gastrointestinal disease to prevent an acute bleeding

episode which in our public health system is a concern as the huge amount of patients that transit in hospitals and we don't count with gastrologist in after hours or in weekends. UGIB has a big rate of mortality in this research was of 13.04% rate of mortality which can be prevent by an early endoscopy made. For future research would be gastric cancer prevalence, incidence of peptic ulcer and incidence of *Helicobacter pylori* in high endoscopy.

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