



## ENDOSCOPIC FINDINGS IN PATIENTS AFFECTED BY UPPER GASTROINTESTINAL BLEEDING IN EMERGENCY SITUATION

ACHADOS ENDOSCÓPICOS EM USUÁRIOS ACOMETIDOS POR HEMORRAGIA DIGESTIVA ALTA EM SITUAÇÃO DE EMERGÊNCIA

HALLAZGOS ENDOSCÓPICOS EN PACIENTES AFECTADOS POR HEMORRAGIA DIGESTIVA ALTA EN SITUACIÓN DE EMERGENCIA

Suelayne Martins Araujo<sup>1</sup>, Ana Carla Silva Alexandre<sup>2</sup>, Ana Paula Santos Albuquerque<sup>3</sup>

### ABSTRACT

**Objective:** to identify the main endoscopic diagnoses in patients with gastrointestinal bleeding cared for in emergency situation. **Method:** documentary, prospective and exploratory study with a quantitative approach. Data collection was conducted between August and November 2014 using a form containing sociodemographic and clinical aspects from 76 medical records. **Results:** there was predominance of male patients (63.2%) aged 61 to 80 years (48.7%). Hematemesis was the most common clinical manifestation (53.9%). The prevalent endoscopic diagnosis was peptic ulcers (34.3%). The predominant length of hospital stay was between four and 10 days (40.8%) and 21% of the patients died. **Conclusion:** knowledge about the lesions that cause upper gastrointestinal bleeding and the characteristics of this type of patients can assist managers in planning actions that improve the quality of the treatment prescribed. **Descriptors:** Gastrointestinal Bleeding; Gastrointestinal Endoscopy; Emergency.

### RESUMO

**Objetivo:** identificar os principais diagnósticos endoscópicos de usuários portadores de hemorragia digestiva alta atendidos em situação de emergência. **Método:** estudo documental, prospectivo e exploratório com abordagem quantitativa. A coleta dos dados foi realizada entre agosto e novembro de 2014, por meio de formulário contendo questões sociodemográficas e clínicas, com a utilização de 76 prontuários de atendimento. **Resultados:** destacou-se o predomínio de pacientes do sexo masculino (63,2%), na faixa etária entre 61 aos 80 anos (48,7%), tendo como manifestação clínica mais comum a hematemese (53,9%). O diagnóstico endoscópico prevalente foi úlceras pépticas (34,3%). O período de internação predominante foi entre quatro e 10 dias (40,8%) e 21% dos pacientes foram a óbito. **Conclusão:** o conhecimento das lesões que causam hemorragia digestiva alta e as características deste tipo de paciente podem auxiliar os gestores no planejamento de ações que repercutam na qualidade do tratamento empregado. **Descritores:** Hemorragia Gastrointestinal; Endoscopia Gastrointestinal; Emergência.

### RESUMEN

**Objetivo:** identificar los principales diagnósticos endoscópicos de pacientes con hemorragia digestiva alta en situación de emergencia. **Método:** estudio documental, prospectivo y exploratorio con enfoque cuantitativo. La recolección de datos se realizó entre agosto y noviembre de 2014, a través de un formulario conteniendo aspectos socio-demográficos y clínicos, con el uso de 76 registros médicos. **Resultados:** se destacó el predominio de pacientes masculinos (63.2%), de entre 61 a 80 años de edad (48,7%). Hematemesis fue la manifestación clínica más común (53,9%). El diagnóstico endoscópico más frecuente fue de úlceras pépticas (34.3%). El período predominante de hospitalización fue de entre cuatro y 10 días (40,8%) y el 21% de los pacientes falleció. **Conclusión:** el conocimiento de las lesiones que causan la hemorragia digestiva alta y las características de este tipo de pacientes pueden ayudar a los gerentes en la planificación de acciones que repercutan en la calidad del tratamiento usado. **Descriptor:** Hemorragia Gastrointestinal; Endoscopia Gastrointestinal; Emergencia.

<sup>1</sup>Nurse, Specialist in General Emergency in Nursing Residency, State Health Department of Pernambuco (SES-PE). Brazil. E-mail: [suelaynemartins@hotmail.com](mailto:suelaynemartins@hotmail.com); <sup>2</sup>Nurse, Specialist in Intensive Care Unit and Urgency and Emergency, Teacher at the Pernambuco Federal Institute - Pesqueira Campus (IFPE), Master's degree candidate in Health Sciences, Italian University Institute of Rosário (IUNIR). Pesqueira, PE, Brazil. E-mail: [anacarlalalexandre@hotmail.com](mailto:anacarlalalexandre@hotmail.com); <sup>3</sup>Nurse, Master's degree in Hebiatry, Coordinator of the Nursing Undergraduate Program, University of Vale do Ipojuca (UNIFAVIP/DEVRY), Coordinator of Nursing Residency, Agreste Regional Hospital (HRA), Member of the Ethics Committee of the HRA. Caruaru, PE, Brazil. E-mail: [paulabuique@hotmail.com](mailto:paulabuique@hotmail.com)

## INTRODUCTION

Upper gastrointestinal bleeding (UGB) has been defined as any intraluminal bleeding located between the upper esophagus and the angle of Treitz.<sup>1</sup> Generally, the symptoms manifest themselves through hematemesis (red blood or coffee ground-like vomiting), melena (black feces) and hematochezia (elimination of red blood through the rectum).<sup>2</sup>

UGB may be caused by a variety of pathological conditions and constitutes the main gastroenterological emergency. It is classified into: non-varicose bleeding, which has predominantly peptic or vascular etiology, such as gastroduodenal ulcer that accounts for about 46% of UGBs; acute mucosal lesions; Mallory-Weiss laceration; Dieulafoy's lesion; vascular ectasia; and varicose bleeding due to portal hypertension, such as esophageal, duodenal or gastric varices.<sup>3,4</sup>

These hemorrhagic manifestations are frequent in Brazilian emergency services and correspond to approximately 25% of care provided.<sup>5</sup> The annual incidence of UGB in Western countries varies between 100 and 150 cases per 100,000 inhabitants. Despite advances in the area of diagnosis and therapy, the mortality rate has remained high with ranging between 4% and 10% in the non-varicose cases and between 18% and 30% in varicose cases.<sup>6</sup> The male population of low socioeconomic level has two times greater risk of developing UGB episodes.<sup>7</sup> However, mortality occurs more frequently in older adults due to comorbidities inherent in this group.<sup>8</sup>

About 80% of bleeding episodes are self-limited and only require supportive treatment. However, the remaining 20% have persistent bleeding with hemodynamic instability and increase the morbimortality rate.<sup>2</sup> Therefore, early diagnosis is of paramount importance, because it allows performing a therapeutic intervention to meet the needs of the patients and enable their survival.<sup>9</sup>

The technological advances make it possible to perform direct examination of the esophageal mucosa up to the second portion of the duodenum using upper gastrointestinal endoscopy (UGE) or esophagogastroduodenoscopy.<sup>5</sup> This examination is the preferred method for the diagnosis of UGB due to its high sensitivity and specificity with therapeutic possibility. In addition, it allows stratifying risks and obtaining prognoses.<sup>10</sup>

The identification of the bleeding source is crucial, because, as a result, it guides the therapeutic procedures. Therefore, the examination should be carried out within the first 24 hours after the patients have received volume resuscitation—if applicable—and are hemodynamically stable.<sup>1</sup>

This way, it becomes clear that the therapeutic procedures for these patients in emergency service require a correct management in combination with UGE, so that the actions are then targeted at reducing the morbimortality rates that have long been associated with the history of UGB.<sup>1,2</sup>

It is also important to highlight the performance of nursing in this process. The actions will be present in all the steps performed during the hospitalization of these patients, including completion of the UGE. In addition, success of treatments will also depend on these actions. Therefore, the goal of the present study was to identify the main endoscopic diagnoses in patients with UGB cared for in emergency situation.

## METHOD

This is a documentary, prospective and exploratory study with a quantitative approach. It was conducted in a large general hospital that provides services through the Unified Health System<sup>1</sup>. It has its own gastrointestinal endoscopy service that meets the demands of endoscopic emergencies in the region. It is located in Caruaru, State of Pernambuco, Brazil.

Data collection was performed from August to November 2014 using 76 medical records with a precision of 8% when we analyzed the number of emergency care provided to patients with UGB. The sample consisted of medical records that met the inclusion criteria, namely: patients admitted to the emergency service; performance of UGE within the first 24 hours after admission; including endoscopic diagnosis; and being readable. In this way, those who did not have initial diagnosis of UGB on admission were excluded from the study.

In order to collect the information, we used the book of records of admission to the endoscopy service to assess day by day the number of patients who had undergone UGE. Subsequently, we performed a search in the unit according to the records. For data collection, we used a form-type instrument containing direct questions. We assessed sociodemographic variables, such as: age; race; sex; and origin. We also assessed clinical

<sup>1</sup>Brazil's publicly funded healthcare system which assures that healthcare is a "right of all and an obligation of the State"

variables, such as: clinical manifestations; habits that affected the gastric mucosa; comorbidities; volume resuscitation; use of initial aggressive drug therapy; endoscopic diagnosis; endoscopic therapy; maintenance drugs; rebleeding; need of surgery; length of hospital stay; and reason for hospital discharge.

The data were included in a database using the Excel program (Microsoft® Windows), version 2007, with two proofreading. After processing, the data were analyzed using the SPSS Statistical Program, version 20.0, and are illustrated in tables.

Before data collection, we received the consent of the director of the hospital and the research project was evaluated and approved by the Research Ethics Committee of the Caruaruense Association of Higher Education

(ASCES), under Certificate of Submission for Ethical Evaluation No. 32417214.4.0000.5203. By being in line with the ethical and legal principles that guide research with human beings, in accordance with Resolution 466/2012 of the National Health Council, the research project was approved under Opinion No. 747,440.

## RESULTS

The data obtained in the study showed a higher frequency of UGB in male patients (63.2%), aged between 61 and 80 years (48.7%), of mixed race (85.5%), and from municipalities belonging to the IV Regional Health Department (IV GERES), which is an administrative unit composed of a group of neighboring municipalities (51.3%). These data are presented in Table 1.

**Table 1.** Epidemiological profile of the patients. Caruaru, PE, 2014.

Variables	Patients	
	n	%
<b>Age groups (years)</b>		
≤ 16	1	1.3
21 to 40	9	11.8
41 to 60	20	26.3
61 to 80	37	48.7
≥ 81	9	11.8
Total	76	100
<b>Sex</b>		
Female	28	36.8
Male	48	63.2
Total	76	100
<b>Race</b>		
White	9	11.8
Mixed	65	85.5
Black	2	2.6
Total	76	100
<b>Origin</b>		
Caruaru	20	26.3
Municipality belonging to the IV GERES	39	51.3
Municipality not belonging to the IV GERES	17	22.4
<b>Total</b>	<b>76</b>	<b>100</b>

All the patients who were part of the sample had sought the emergency service because they exhibited some macroscopic manifestation of bleeding with hematemesis

prevalence (53.9%) followed by hematemesis and melena (36.8%). These data are shown in Table 2.

**Table 2.** Distribution of patients according to clinical manifestations. Caruaru, PE, 2014.

Clinical manifestations	Patients	
	n	%
Hematemesis	41	53.9
Melena	6	7.9
Hematoquezia	1	1.4
Hematemesis and melena	28	36.8
<b>Total</b>	<b>76</b>	<b>100</b>

With respect to risky habits that affect the gastric mucosa, only 24 (31.6%) of the medical records had reports of some of them. Of which 21 (87.5%) were relating to alcohol consumption and/or smoking, and three (12.5%) to the use of non-steroidal anti-inflammatory drugs (NSAIDs). Regarding the knowledge of any comorbidity at the time of

hospital admission, there were only 22 reports (28.9%) in the medical records, 19 (86.4%) with liver diseases, followed by two (9.1%) with cardiorespiratory disorders, and one (4.5%) with chronic kidney failure.

With regard to the initial therapeutic procedure, only 23 (30.2%) had received some initial aggressive drug: nine (39.1%) had

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received proton pump inhibitors (PPIs) with continuous infusion pump (CIP); 11 (47.8%) had received terlipressin; and three (13.1%) had received PPIs and terlipressin in combination. Regarding the need of volume replacement, 75 patients (98.7%) had undergone it. Of these, 51 (68%) had used crystalloids and 24 (32%) crystalloids and blood derivatives in combination.

With respect to the endoscopic findings in the sample assessed, Table 3 shows that there was a variety of pathological conditions,

however, with prevalence of peptic ulcers (34.3%), followed by esophageal varices (28.9%). Regarding endoscopic therapy, only 32 (42.1%) had received some kind of intervention. With respect to the use of maintenance drugs after endoscopic diagnosis, only 23 (30.2%) had used terlipressin. Of these, 12 (52.2%) had used PPIs with CIP, and 11 (47.8%) had used terlipressin. It should be noted that the patients who had received initial aggressive drugs were not the same patients who had received maintenance drugs.

**Table 3.** Percentage of endoscopic diagnoses found in the patients submitted to the examination. Caruaru, PE, 2014.

Endoscopic diagnosis	Patients	
	n	%
Peptic ulcer	26	34.3
Gastric ulcer	17	65.5
Duodenal ulcer	7	26.9
Esophageal ulcer	1	3.8
Gastroduodenal ulcer	1	3.8
Varicose disease	22	28.9
Esophageal disease	22	28.9
Erosive disease	13	17.1
Gastritis	8	61.5
Esophagitis	4	30.8
Duodenitis	1	7.7
Gastric malignant lesion	8	10.5
Hypertensive gastropathy	4	5.3
Mallory-Weiss laceration	2	2.6
Polyp in the cardia	1	1.3
<b>Total</b>	<b>76</b>	<b>100</b>

After the completion of the UGE, only five patients (6.5%) had had some rebleeding episode. There was no case in need of surgical intervention. The necessary length of hospital

stay for treatment had been between four and 10 days for most of the patients (40.8%). During the follow-up treatment, 21% of the patients had died (Table 4).

**Table 4.** Length of hospital stay and reason for discharge. Caruaru, PE, 2014.

Variables	Patients	
	n	%
Length of hospital stay (days)		
< 1	11	14.5
Up to 3	18	23.7
4 to 10	31	40.8
≥ 11	16	21.0
Total	76	100
Reason for discharge		
Death	16	21.0
Cure/improvement	43	56.5
Abandon	2	2.7
Referral	14	18.5
Outpatient	1	1.3
<b>Total</b>	<b>76</b>	<b>100</b>

## DISCUSSION

In view of the problems relating to morbimortality of patients affected by UGB and its impact on clinical emergency, it is necessary to make efforts aimed at ensuring prevention policies and health promotion.<sup>2,6,12,13</sup>

The epidemiological profile found in the present study—as well as in national and international studies—suggest a prevalence of UGB in male patients aged over 60

years.<sup>2,3,8,14,15</sup> With respect to race, the data showed that there was a predominance of white and mixed race individuals.<sup>2</sup>

The reason by which patients sought the emergency service had been macroscopic manifestation of bleeding. There had been prevalence of hematemesis, followed by melena and hematemesis in combination, and melena in the third place. With respect to the most prevalent signs for suspicion of UGB found in the present study, as well as in relevant studies on the issue, the results are

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varied. However, the two most found signs are hematemesis and melena.<sup>2,7</sup>

These patients can be stable or hemodynamically unstable, which indicates the severity of the bleeding. The care provided in the emergency service to those who exhibit hemodynamic problems is independent of the bleeding etiology and aims at compensating for blood loss. There should also be preceding diagnostic and therapeutic measures.<sup>3,5</sup> Therefore, we observed that the initial therapeutic procedures had included the use of crystalloids (68%), followed by blood derivatives and crystalloids in combination (32%). These data allow noting that a considerable number of patients had needed hemodynamic stabilization, so that they could be subjected to endoscopic examination.<sup>6,15</sup>

It is known that a number of factors (emotional stress, smoking, alcohol, NSAIDs, among others) contribute to the emergence of gastric mucosa lesions.<sup>16,18</sup> With respect to the use of alcohol, smoking, and NSAIDs, we found that only 31.6% of the patients had reported them. This number was lower than that found by other authors, who had reported that 73.8% of the patients had one of these habits.<sup>2</sup> Comorbidities were present in 28.9% of the patients of the present study. Detecting significant comorbidities—such as cardiorespiratory, hepatic and renal—is of utmost importance, because these disorders constitute a high-risk group after a bleeding episode.<sup>1,19</sup>

Monotherapies (clinical, endoscopic, and/or surgical) have no positive results in the treatment of UGB; early and combined treatments are necessary.<sup>3,7</sup> According to the data obtained, only 30.2% of the patients had received any initial aggressive drug (proton pump inhibitor and/or terlipressin) and 30.2% maintenance drugs. This result is lower when compared with that of a study in which more than 90% of the patients had received combined treatment, also with a result in the mortality rate that had been less than 1%.<sup>3</sup>

Endoscopic therapy had been only used in 42.1% of the patients. This number was lower than that found in a study that had assessed the profile of emergency endoscopic examinations, which showed that there had been interventions in 80% of the patients.<sup>21</sup> Endoscopic intervention is targeted at: obtaining early hemostasis; decreasing the length of hospital stay; decreasing the need of hemotransfusion; decreasing rebleeding rates; and decreasing the need of surgical procedures.<sup>9</sup>

Regarding the bleeding etiology, peptic ulcer has been at the top as the main cause of the UGB for many years. Even though there has been a decline in prevalence over the past two decades, it still remains high.<sup>3,16</sup> The findings of the present study were no different. We found 34.3% of peptic ulcer cases and esophageal varices had the highest prevalence. These disorders are mentioned by the literature as the second most common cause of UGB. Varices are caused by the formation of collateral vessels that originate from portal hypertension and their rupture results in a mortality rate of 20 to 40% in the first few weeks. This is an alarming data considering its prevalence.<sup>9,17</sup>

Erosive lesions in the gastric mucosa accounted for 17.1% of the cases. Typically, this type of lesion occurs due to an aggression caused to the mucosa, whether by use of medicines, alcohol or excess acid-peptic secretion. Its prevalence varies, being in second or third place as the etiology of gastrointestinal bleeding.<sup>6,18</sup> Although epidemiological studies indicate a decreasing world incidence of gastric cancer, this disease still corresponds to one of the neoplasms with higher rates of incidence and mortality throughout the world.<sup>19</sup> It had affected 10.5% of the patients, which is a high number when compared with other studies that found 4.5% and 3.0% of neoplasia cases, respectively.<sup>2,8</sup>

Other less common etiologies found were hypertensive gastropathy (5.3%) and polyp in the cardia (1.3%), which, due to the low level, are in line with the literature. Mallory-Weiss lacerations were present in 2.6% of the patients. This type of lesion has a close relationship with previous intake of alcohol and is a common cause of UGB. However, it was not a common finding in this study.<sup>1</sup>

The necessary length of hospital stay for recovery had been between four and 10 days in most patients (40.8%); however, in one study, the authors reported an average of three days of hospitalization.<sup>2</sup> Nevertheless, it is worth noting that gastrointestinal bleeding often culminates with decompensation of other systems—such as respiratory and cardiovascular—especially in older adults. This fact leads to the worsening of the clinical picture, reflecting on the time required for recovery.<sup>15</sup>

The rebleeding index found was 6.5%. This value is close to that found in another study that observed 6.1%, and lower than that found by another author, which reported 11% of rebleeding episodes. However, of these, three had died, which shows the severity of this type of episodes.<sup>2,6</sup> The mortality rate found

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in the present study was 21%, which is a high value when compared with those found by other authors.<sup>2,8,14,15</sup>

With regard to surgical interventions, they had not been necessary. This type of procedure depends on the etiology of the bleeding and the blood volume lost. The most recent studies have shown a decreased need of this kind of intervention, due to timely use of medications and interventional endoscopy.<sup>3,6,8</sup>

## CONCLUSION

Considering the impact that UGB has in clinical emergency, we emphasize the relevance of the present study. It presents the endoscopic findings that affect patients, as well as the therapeutic procedures for this type of patients. We consider that the knowledge of these characteristics supports the activities of health professionals who work in this institution. It will be possible to adjust the procedures in order to improve the care provided to these patients and prevent these lesions.

The knowledge of these characteristics may also serve as a tool for managers to favor the understanding of peculiarities that can be directly related to accurate prognoses. Therefore, the assessment of these characteristics allows planning actions to improve the care provided to these patients and the quality of public health.

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#### Corresponding Address

Suelayne Martins Araujo  
Rua Venustriano Correia, 447  
Bairro Santa Rosa  
CEP 55026-270 – Caruaru (PE), Brazil