


Epidemiological profile of patients hospitalized for upper gastrointestinal hemorrhage in a university hospital in Northwestern Paraná

 <https://doi.org/10.56238/sevened2024.012-015>

Caroline Sala¹, Carolina Sesnick Lavagnoli², Thamires Fernandes Cardoso da Silva Rodrigues³, Ivi Ribeiro Back⁴, Aline Zulin⁵, Esdra Cristina Pereira Goldoni⁶, Elis Fausto Carvalho⁷, Jorseli Angela Henriques Coimbra⁸, Cremilde Aparecida Trindade Radovanovic⁹, Larissa Carolina Segantini Felipin¹⁰, Maricy Morbin Torres¹¹ and Roberta Tognollo Borotta Uema¹²

ABSTRACT

Introduction: Upper gastrointestinal hemorrhage is characterized by intraluminal bleeding which is the result of an injury proximal to the ligament of Treitz, which may involve the esophagus, stomach or duodenum and can be classified as varicose and non-varicose. In this sense, for preventive interventions, it is important to know the profile of the patient who is most predisposed to ADH and its outcome after treatment. **Objective:** To analyze the epidemiological profile of patients hospitalized for upper gastrointestinal hemorrhage at a university hospital in northwestern Paraná. **Method:** This is an exploratory study with a quantitative approach, carried out at a University Hospital in the Northwest of Paraná, through access to the medical records of patients hospitalized for digestive bleeding in 2022. Data collection took place between August and October 2023 and the analysis was performed descriptively. The study was approved by the Research Ethics Committee under Opinion No. 6,117,164. **Results:** In 2022, there were 247 admissions by HDA. Males were the most prevalent among the patients and the mean age was 61 years. In 61.5% of the cases, the clinical manifestation was melena. The most commonly performed invasive procedure was UDE, and in 76.1% of the cases there was a good outcome with hospital discharge. **Conclusion:** Knowing the patient's profile and the main risk factors for a serious pathology such as ADH makes it possible to develop a discharge plan based on their needs in order to avoid readmissions and even death from the disease.

¹ Nurse. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: carolinesala7@gmail.com

² Nurse. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: pg606093@uem.br

³ Nurse. PhD in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: tfcsrodrigues@gmail.com

⁴ Post-Doctoral Nurse in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: irback2@uem.br

⁵ Nurse. Doctor student in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: azulin2@uem.br

⁶ Nursing Student. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: ra123710@uem.br

⁷ Nursing Student. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: ra124825@uem.br

⁸ Nurse. Doctor in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: jahcoimbra@uem.br

⁹ Nurse. Doctor in Health Sciences. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: catradovanovic@uem.br

¹⁰ Nurse. Doctor in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: lcsfelipin2@uem.br

¹¹ Nurse. Doctor in Nursing. State University of Maringá (UEM). Maringá, PR, Brazil.

E-mail: mmtorres@uem.br

¹² Nurse. Post-Doctorate in Nursing. Collaborating Professor of the Nursing Department of UEM. Maringá, PR, Brazil.

E-mail: rtbuema2@uem.br



Keywords: Gastrointestinal Hemorrhage, Hospitalization, Epidemiological Profile, Nursing Care.

INTRODUCTION

Upper gastrointestinal hemorrhage (ADH) is characterized by intraluminal bleeding which is the result of an injury proximal to the ligament of Treitz, which may involve the esophagus, stomach, or duodenum (Valasco *et al.* 2021). Clinical manifestations include hematemesis (vomiting with bright or digested blood), melena (darkened stools with a characteristic odor) and hematochezia or enterorrhagia, which is characterized by the presence of stools with live blood. It should be noted that it is not necessary to present all symptoms or even occur simultaneously (Martins *et al.*, 2019).

HDA is very common and affects between 48 and 172 cases per 100,000 inhabitants per year. The disease is responsible for about one hospitalization per 100,000 adults/year and predominantly affects males, affecting this group twice as often when compared to females (Valasco *et al.*, 2021)

HDA is classified in two ways: varicose and non-varicose. The most common form is non-varicose, and the cause in 20 to 50% of cases is peptic ulcers (Antunes *et. al.* 2022). Its main causal factors are *helicobacter pylori infection* and the consumption of non-steroidal anti-inflammatory drugs (NSAIDs), the latter of which increases the risk of bleeding by three to five times (Martins *et. al.* 2019). In patients with advanced age, chronic diseases, and those who use anticoagulants, the risk of mortality increases considerably (Antunes *et. al.* 2022)

The varicose form of the disease, on the other hand, is classified due to the rupture of esophageal varices, which is one of the complications of portal hypertension, which occurs due to increased resistance to portal flow and increased blood inflow into the portal venous system (Martins *et. al.* 2019). Studies show that esophageal varices are present in 50% of patients diagnosed with liver cirrhosis (Valasco *et. al.*2021).

Upper gastrointestinal endoscopy (EGD) is the first test of choice in HDA, and it is recommended to be performed within the first 24 hours and in urgent cases within 12 hours, as long as the patient is hemodynamically stable for the exam. If, during the procedure, it is noted that the bleeding has ceased or that visualization is impaired, it is recommended to repeat it within 24 hours (Valasco *et. al.* 2021).

Some studies indicate that the Glasgow Blatchford scale should be used before the EDA is performed for the assessment of pre-endoscopic risks. The scale uses laboratory tests and clinical manifestations, performing stratification and the need for early intervention (Antunes *et. al.* 2022)

Patients with varicose bleeding should undergo emergency EDA with the use of endoscopic techniques that help to stop this bleeding, such as elastic bandages, elastic bands on the varicose vein spine, or sclerotherapy, in which sclerosing agents are injected to stop the bleeding (Valasco *et al.*2021)

In addition, patients may present with acute bleeding, requiring early evaluation and hemodynamic resuscitation, which includes stabilization of blood pressure and restoration of



intravascular volume. The patient may present with signs of shock that are characterized by cold and clammy extremities, systolic blood pressure (SBP) < 100 mmHg, and heart rate (HR) >100 bpm (Valasco *et al.*2021)

It may also present orthostatic hemodynamic alterations that are defined by a drop of 10 mmHg or more in systolic pressure and an increase of 15 bpm in the patient's heart rate when the patient is changed from supine to sitting position, a fact that demonstrates a blood loss of approximately 20% of the circulatory volume, which is classified as grade 2 and is an indication for fluid resuscitation with crystalloids. to restore the lost volume. The goal is to maintain a SBP of 100 mmHg and HR< 100bpm. (Valasco *et al.*2021)

If the patient does not respond to crystalloid replacement, transfusion of packed red blood cells should be considered, considering hemoglobin levels between >7 g/dL and 9 g/dL. (Martins *et al.* 2019). Hemodynamic decompensation, presentation of shock, orthostatic hypotension, need for transfusions, and severe hemorrhage are signs of poor prognosis and can trigger tragic outcomes, such as cardiorespiral arrest (CPA) and death (Antunes *et al.* 2022).

In view of the above, emergency service professionals, especially nurses, need to develop a clinical view, evaluating and determining the priorities of interventions, because the signs and symptoms of ADH can be manifested in various ways, requiring a correct approach (Antunes *et al.*2022).

Considering the scarcity of studies involving the treatment of patients with ADH in a referral hospital, the importance of the topic is noted. Understanding that the disease is something frequent in the daily life of hospital professionals, the objective of this study was to analyze the epidemiological profile of patients hospitalized for upper gastrointestinal hemorrhage in a university hospital in the northwest of Paraná.

METHOD

This is a descriptive, exploratory study with a quantitative approach that aimed to analyze the epidemiological profile of patients hospitalized for upper gastrointestinal hemorrhage in a university hospital in the northwest of Paraná. Quantitative research aims to obtain information that can be measured numerically and aims to quantify a problem and understand its dimension. The term exploratory refers to the fact that it provides greater familiarity with the theme and this can be done both through a bibliographic survey and through medical records (Creswell, 2007).

On the other hand, in descriptive research, the facts are observed, recorded, analyzed, categorized and interpreted using standardized techniques for data collection with the use of instruments that assist in the collection of sociodemographic data and during data collection in order to achieve the proposed objective (Creswell, 2007).



The research was carried out at a University Hospital in the Northwest of Paraná, through access to the medical records of patients (secondary data) hospitalized for ADH in 2022 according to the ICD of hospitalization (ICD 10: K922). As an exclusion criterion, it was determined that the medical records of patients who developed ADH during hospitalization but were not hospitalized for this reason would not be accessed.

An instrument built specifically for this purpose was used, consisting in its first stage of sociodemographic characteristics, and later of information regarding ADH and hospitalization (Appendix I). Data were collected from August to October 2023.

Data were analyzed descriptively. First, they were tabulated in Microsoft Excel spreadsheets and analyzed using the *Statistical Package for the Social Sciences (SPSS) software*.

All the ethical precepts of resolution 466/2012 of the National Health Council (BRASIL, 2012) were respected. The project was submitted for ethical appraisal to the Commission for the Regulation of Academic Activities (COREA) of the aforementioned institution and later to the Ethics Committee on Permanent Research with Human Beings (COPEP) and approved with opinion number: 6.117.164. (Annex I). As these were secondary data, the Free and Informed Consent Form (ICF) (Annex II) was waived.

RESULTS

In 2022, 247 admissions for ADH were identified in the hospital. The participants' ages ranged from three to 96 years, with a mean age of 61 years. The vast majority of patients were male (153 - 61.9%) and the length of hospital stay ranged from one to 66 days, with a mean of six days. Regarding the comorbidities presented by the patients in the study, the most prevalent were SAH (66-27%) and DM (53 - 21.4%), followed by smoking (36 -14.5%) and alcoholism (52 - 21%).

The main clinical manifestation was melena in 153 (61.5%) cases, followed by hematemesis (113 - 45.7%). In the table below it is possible to see the distribution of admissions according to the months of the year:

Table 1: Distribution of ADH cases in a University Hospital according to the months of the year, in 2022, Maringá-PR, Brazil:

Months of the year	Fa	%
January	22	8,9
February	18	7,3
March	22	8,9
April	17	6,9
May	24	9,7
June	17	6,9
July	19	7,7
August	24	9,7
September	17	6,9
October	21	8,5
November	24	9,7
December	21	8,5
TOTAL	247	100

Source: the researchers. Legend: FA: absolute frequency.

Regarding endoscopy and its respective technique for bleeding control, only the examination was performed, UDE with sclerotherapy and UDE with ligation. These results can be seen in the table below (Table 2):

Table 02: Performing EDA and hemostasis technique, Maringá-PR, Brazil, 2022:

EDA and Hemostasis Technique	YES		NO		NOT INFORMED		TOTAL	
	Ago	%	Ago	%	Ago	%	Ago	%
EDA	214	86,6	29	11,7	4	1,6	247	100
EDA + Sclerotherapy	23	9,3	222	89,9	2	0,8	247	100
EDA + Ligadura	37	15	208	84,2	2	0,8	247	100

Source: the researchers. Legend: EDA: Endoscopy/ AF: absolute frequency.

Regarding the complications experienced by patients hospitalized for ADH, hypotension, hypovolemic shock, need for vasoactive drugs, blood transfusion, and ICU admission were found. These results are better presented in the table below (Table 3):

Table 03: Complications related to ADH in 2022, Maringá-PR, Brazil:

INTERCURRENCES	YES		NO		NOT INFORMED		TOTAL	
	Ago	%	Ago	%	Ago	%	Ago	%
Hypotension/Hypovolemic Shock	71	28,7	173	70	3	1,2	247	100
TWO	38	15,4	207	83,8	2	0,8	247	100
Blood transfusion	97	39,3	149	60,3	1	0,4	247	100
UTI	92	37,2	150	60,7	5	2	247	100

Source: the researchers. Legend: VAD: vasoactive drug; ICU: Intensive Care Unit

Regarding the outcome of the cases, there is hospital discharge, evasion, death and hospital transfer. These results are better presented in the table below (Table 4):

Table 04: Patient outcomes at hospital admission in 2022, Maringá-PR, Brazil:

DENOUEMENT	Ago	%
Discharged	188	76,1
Evasion	7	2,8
Death	30	12,1
Transfer	21	8,5
Not informed	1	0,5
TOTAL	247	100

Source: The Researchers

The results showed a prevalence of male hospitalizations, but age, length of hospitalization and form of treatment were quite variable. Although 30 deaths (12.1%) were recorded, most patients were discharged from the hospital (188 - 76.1%).

DISCUSSION

It can be observed that throughout the year, hospitalizations were constant in all months and that the predominant gender was male, as found in several other studies. It has been found that males are more likely to develop ADH (SANTOS *et al.*, 2022). This finding can be explained by the fact that care related to men's health is still incipient and, despite the efforts involving the National Policy itself, men have a more closed posture that influences their health behavior, not seeking health prevention strategies, but only assistance in severe and urgent cases (GARCIA *et al.*, 2019).

Regarding the age of the patients, the findings showed that the elderly population was the most affected, with a mean age of 61 years. Studies indicate that cases of gastrointestinal bleeding increase in the elderly due to the aging process along with reduced organic and physiological functions. The aging process decreases the function of the gastric mucosa and blood supply, causing tissue repair activities to not occur properly and making the elderly more vulnerable (SANTOS *et al.*, 2022).

Among the comorbidities presented by the patients, SAH (66 - 27%) and DM (53 - 21.4%) stand out. As with advancing age, older patients tend to present chronic non-communicable pathologies and end up making use of drugs that are harmful to the gastrointestinal tract and the hepatic system, becoming prone to developing lesions in the gastric mucosa with consequent bleeding and liver problems, which, when metabolizing many drugs, also makes them sick and impairs the formation of coagulation factors (SANTOS *et al.*, 2022).

It is known that ADH has some clinical manifestations, which can be isolated or associated with other factors. In the study, it was possible to identify that the most evident manifestations were melena and hematemesis. These manifestations generate great blood loss, which can lead to hypotension and hypovolemic shock, which is nothing more than a decrease in circulating blood

volume due to external losses. This blood reduction leads to a decrease in venous return, generating a drop in central venous pressure, with the physiological response being increased vascular resistance, decreased perfusion and hypoxia. In this study, almost 30% of patients progressed to hypotension and hypovolemic shock (SOSA, *et al.*, 2021).

Due to blood loss and hemodynamic instability, some patients required ICU admission and blood transfusion, totaling approximately 40% of the cases. The literature indicates that blood transfusion is indicated in cases of hemodynamic instability, hypovolemia, and active bleeding. However, the evaluation of the case is crucial to avoid transfusions in varicose HDA, due to the worsening of the case due to volume overload (MARTINS *et al.*, 2019).

Hospitalization in intensive care was also evidenced and corroborates the information described in the literature, since most patients with ADH evolve with clinical deterioration and require continuous and invasive monitoring until the case is stable and resolved (ANTUNES *et al.*, 2022).

Digestive endoscopy was the most frequently performed procedure in 86.6% of the cases. This technique is considered the main diagnostic test that enables treatment for ADH. When done early, it makes it possible to identify complications, reduce the risk of new bleeding, and enable hemostatic therapies (SANTOS *et al.*, 2022). It was evidenced that in 15% of cases, esophageal varices ligation was performed and this procedure aims precisely to prevent blood flow, retracting the varicose cord, preventing it from bleeding (MARTINS *et al.*, 2019).

Among all cases, (188-76.1%) were discharged from hospital improved and the percentage of deaths can still be considered high (12.1%), since ADH is understood as a disease that has adequate and pre-established therapy and diagnosis, and yet it is a disease with a high mortality rate (SANTOS *et al.*, 2021).

One of the strategies to try to reduce the risk of death and readmissions due to the same event is to perform a good anamnesis, including the nursing history, in order to identify other diagnoses that may lead to the onset of ADH, such as liver cirrhosis. According to the literature, the disease is one of the most associated with gastrointestinal bleeding (VELÉZ; *et al.*, 2023), but in our study, a major failure was identified in filling out the electronic medical record, making it difficult to understand the patient's history as a whole, and hindering the development of an adequate discharge plan.

It is understood that the data reflect a local reality and cannot be generalized. Added to this is the fact that many medical records analyzed lacked important information that hinders data collection. However, the results found are noteworthy due to the high number of hospitalizations with a special prevalence for males and can help in the development of care protocols, optimizing patient care planning.



CONCLUSION

The results of the present study show that in 2022, there were 247 hospitalizations due to ADH and of these there was a predominance of males with a mean age of 61 years. The mean length of hospital stay was 6.2 days, and among the main clinical manifestations were melena and hematemesis, and blood transfusion was the main complication.

These results show the profile of patients treated at a referral institution for diagnosis and treatment of the problem, as well as the outcome of patients with ADH. The high number of incomplete medical records is noteworthy, making it difficult to understand the patient's baseline history in order to be able to plan care completely. It is noteworthy that the management of ADH outside the tertiary environment and after hospital discharge involves a change in habits on the part of the patient and his/her family and portrays the need for further studies in primary care so that health teams can assist in this process and also in the early identification of the disease and its main risk factors.



REFERENCES

1. Antunes, A. S. M., et al. (2022). A pessoa em situação crítica com hemorragia digestiva alta, abordagem inicial no serviço de urgência uma revisão de escopo. **Revista Ibero-Americana de Humanidades, Ciências e Educação**, 8(6). Disponível em: <https://periodicorease.pro.br/rease/article/view/5946/2274>. Acesso em 20 março 2023.
2. Brasil. (2013). Resolução nº 466, de 12 de dezembro de 2012. Dispõe sobre diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. **Diário Oficial [da] República Federativa do Brasil**, Brasília, DF, 13 jun. 2013. Disponível em: <http://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf>. Acesso em: 20 março de 2023.
3. Creswell, J. W. (2007). **Projeto de pesquisa: Métodos qualitativo, quantitativo e misto** (2. ed.). Porto Alegre: Artmed.
4. Garcia, L. H. C., et al. (2019). Autocuidado e adoecimento dos homens: uma revisão integrativa nacional. **Revista Psicologia e Saúde**, 11(3), 19-33. Disponível em: http://pepsic.bvsalud.org/scielo.php?script=sci_arttext&pid=S2177-093X2019000300002&lng=pt&nrm=iso. Acesso em 08 jan. 2024.
5. Martins, A. A. L., Silva, A. M. F. da, Andrade, F. G., Garcia, H. C. R., Brito, A. P. S. O., & Maneschy, R. B. (2022). Hemorragia digestiva alta diagnóstico e tratamento: uma revisão de literatura. **Research Medical Journal**, 3(2), 1–7. Disponível em: <https://doi.org/10.4322/prmj.2019.007>. Acesso em 07 jan. 2024.
6. Martins, A. A. L., et al. (2019). Hemorragia digestiva alta diagnóstico e tratamento uma revisão de literatura. **Revista Medicina Jornal**, 3(2). Disponível em: <https://app.periodikos.com.br/journal/prmjjournal/article/doi/10.4322/prmj.2019.007>. Acesso em: 19 de março de 2023.
7. Sosa, F. F. K., et al. (2021). Fatores preditivos de mortalidade em pacientes com sangramento digestivo alto. **Multimed**, 25(6), e1348. Disponível em: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1028-48182021000600001&lng=es&nrm=iso. Acesso em 16 de jan. 2024.
8. Santos Filho, S. R. F. dos, Moura, V. A., Tavares, M. J. C., & Pereira, E. B. F. e. (2022). Risk factors and primary prevention of upper gastrointestinal bleeding: an integrative review. **Research, Society and Development**, 11(3), e33511324681. Disponível em: <https://rsdjournal.org/index.php/rsd/article/view/24681>. Acesso em: 8 jan. 2024.
9. Valasco, I. T., et al. (2021). **Medicina de emergência: abordagem prática** (15º ed.). Barueri, SP.
10. Vélez, J. L., et al. (2024). Caracterização de pacientes com cirrose agudamente descompensada que consultaram diferentes serviços de emergência de alta complexidade em Medellín. **Biomédica**, 43(3), 9-20. Disponível em: <https://revistabiomedica.org/index.php/biomedica/article/view/6963>. Acesso em: 20 de jan. 2024.