

Digestive Bleeding by Rupture of Esophageal Varicose Veins and Prognosis Value of Blood Transfusion in the Hepatogastroenterology Department of the Gabriel Toure Hospital

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Abstract

Digestive hemorrhage by rupture of esophageal Varices is common and has a pejorative prognosis in our context. **Purpose:** The main purpose of this work was to study the digestive bleeding by esophageal varices and prognosis value of blood transfusion in the Hospital of Gabriel Touré. **Methodology:** It was a prospective study that took place in the service of Hepato-gastroenterology of Gabriel Touré Hospital from June 2016 to May 2017 and from November 2017 to August 2018. **Results:** At the end of the study, 77 patients met the inclusion criteria out of 1396 patients hospitalized during the same period. Varices bleeding represented a prevalence of 5.5% among hospitalized patients during the same period. The average age of our patients was 46.58 ± 15.09 years. The male sex was more reported in our study with a prevalence of 67.5%. At admission, 63.2% had clinical anemia, 58.4% low arterial pressure and 50.6% hemoglobin rate less than 7 g/dL. Blood transfusion was indicated in 47 patients (61%). The mortality rate was 23.4% and was comparable in both groups ($p = 0.0990$). Early rebleeding was significantly observed in the case of transfusion ($p = 0.0452$). Hepatic encephalopathy was the leading cause of death of our patients with 72.2%. **Conclusion:** Digestive bleeding by esophageal varices is a worsen complication in cirrhosis in hospital setting. Transfusion has not significantly improved the prognosis of our patients.

Keywords

Esophageal Varices Bleeding, Blood Transfusion, Prognosis, Gabriel Touré Hospital

1. Introduction

Digestive bleeding by rupture of esophageal varicose veins is a common and severe complication of cirrhosis, occurring in 30% to 40% of patients with this condition. It is also the second leading cause of death in these patients [1]. Despite an improvement in management for more than 20 years, the six-week mortality of an episode of rupture of esophageal varicose veins remains high, between 15% and 35% on severe Child-Pugh C cirrhosis [2] [3] [4].

In France, its incidence is around 20% [5]. In Africa, the mortality rate was reported at 25% in Togo [6], 42.1% in Ouagadougou [7] and 50% in Madagascar [8].

In Mali, in one study digestive bleeding by esophageal varices rupture accounted for 2.5% of hospitalizations with a mortality rate of 48% [9]. Another study reported 14% frequency of digestive bleeding per esophageal varicose rupture in cirrhotics with a mortality of 27.3% [10]. These mortality rates were reported incidentally and the associated factors were not studied. Given the frequency of this evolutionary accident during cirrhosis, we undertook this study with the aim of reassessing its prognosis and the value of transfusion on it.

2. Patients and Methods

This was a prospective study that took place in the Hepato-Gastroenterology department of the CHU-Gabriel TOURE from June 2016 to May 2017 and from November 2017 to August. The study looked at patients admitted to the department for gastrointestinal bleeding by a rupture of esophageal varices retained on the following criteria: active bleeding from esophageal varices, clot on the esophageal varice, oozing mucosa in the presence of esophageal varices, esophageal varices without bleeding stigma associated with the presence of blood in the stomach without other cause of retained bleeding. The exclusionary criteria were. Digestive hemorrhage not related to rupture of esophageal varicose veins.

Patients who received a transfusion were compared to patients who didn't receive the transfusion. All patients collected received a comprehensive clinical examination looking for a history (jaundice, hematemesis, melena, rectorragia and any other known pathology) and signs of HTP and hepatocellular insufficiency. Biological examinations were primarily aimed at assessing hemodynamic resonance (hemoglobin levels, hematocrite levels, creatininemia) and hepatocellular function (TP, total bilirubinemia and protides electrophoresis). At the end of this procedure, a blood transfusion was indicated with systolic blood pressure of 90 mm Hg or less and/or hemoglobin levels below 7 g/dL, plus or minus a pulse greater than 110 pulses per minute. Ligation of esophageal varicose veins was performed in some patients.

Upper gastrointestinal endoscopy looked for criteria attributing digestive hemorrhage to rupture of esophageal Varices. Abdominal ultrasound assessed signs of portal hypertension and liver morphology. All patients were informed and gave verbal consent. The data was collected on a fact sheet and analyzed on co-info

version 6.04. The Khi2 test was used to compare our results which were significant for a probability $p < 0.05$.

3. Results

At the end of the study, 77 patients met the inclusion criteria out of 1396 patients hospitalized during the same period, representing a hospital frequency of 5.5%. The male sex was predominant with a sex ratio of 1.9. The average age was 46.6 ± 15.1 years with extremes of 21 and 86 years. In 49.4% of the cases the patients were between 31 and 50 years old. Housewives and farmers were the most represented with 31.2% and 22.1% respectively. History of jaundice (26.4%), unexplored hematemesis (23.1%) and melena (22%) were the most frequently reported (**Table 1**). On physical examination, pallor (63.2%), ascites (58.4%) and low blood pressure (42.8%) (**Table 2**). Biologically, severe anemia was retroved in 50.6% of patients. In 12.9% of cases the rate of prothrombine was less than 40%. Hypoalbuminemia < 28 g/L was observed in 42.1% of cases. Hyper creatinemia was observed in 27.5% of cases (**Table 3**). Transfusion was reported in 47 patients (61%) with total blood used in 83% of cases and an average of 3.2 ± 2.2 transfused pockets. Esophageal varicose vein ligation was made in 17 of our patients, or 22.1%. The trend was marked by a definitive cessation of hemorrhage in 68.8% of cases, a recurrence in 7.8% of cases and a mortality of 23.4%.

Table 1. Patient history.

History	Frequency	Percentage (%)
Jaundice	24	26.4
Unexplored hematemesis	21	23.1
Melena	20	22
Bilharzia	9	9.9
Arterial Hypertension	7	7.7
Diabete	2	2.2
Rectorragia	2	2.2
Others*	6	6.5

*Sickle cell disease: 1; hyperthyroidism: 1; asthma: 1; blindness: 1; poliomyelitis: 1; pulmonary tuberculosis: 1.

Table 2. Physical signs at admission.

Physical signs at admission	Frequency N = 77	Percentage (%)
Conjunctivale Paleness	48	63.2
Ascite	45	58.4
Arterial hypotension	33	42.8
Hepatomegaly	21	27.27
Splenomegaly	17	22.1
Collateral Veinous Circulation	13	17.1
alteration of consciousness	11	14.3

Table 3. Biological signs at admission.

Biological Signs	Frequency	Percentage (%)	
Hemoglobin Rate (g/dL)	<7	39	50.6
	7 - 9	15	19.5
	10 - 12	17	22.1
	>12	6	7.8
Hematocrite rate (%)	<21	37	48.1
	21 - 35	33	42.8
	>35	7	9.1
Prothrombine rate (%)	<40	8	12.9
	40 - 50	14	22.6
	>50	40	64.5
Creatininemia ($\mu\text{mol/l}$)	>120	19	27.5
	<120	50	72.5
Bilirubinemia (mmol/l) (n = 26)	<35	15	57.7
	35 - 50	3	11.5
	>50	8	30.8
Albuminemia (g/L) (N = 19)	>35 g/L	5	26.3
	28 - 35 g/L	6	31.6
	<28 g/L	8	42.1

Table 4. Patient evolution by transfusion status.

Evolution	Transfusion status		Probability
	With transfusion N = 47 (61%)	Without transfusion N = 30 (39%)	
Definitive cessation of bleeding	33	20	p = 0.7432
Early recidivism	6	0	p = 0.0452
Deceased	8	10	p = 0.0990

Hepatic encephalopathy was the leading cause of death with 72.2% of cases followed by hemorrhagic shock in 27.8%. Early recurrence was significantly observed in transfusions ($p = 0.0452$) and mortality was not statistically different between the two groups ($p = 0.0990$) (**Table 4**).

4. Discussion

The hospital frequency of digestive bleeding by esophageal varice rupture may be underestimated by this study, as some patients died prior to performing a digestive endoscopy. Not all of the desired paraclinical examinations for the prognosis assessment could be performed in all patients due to lack of financial resources. However, the sample size and clinical and biological information collected from as many patients as possible provided a relevant analysis of this urgent evolutionary accident of cirrhotic disease. Digestive bleeding by esophageal varice rupture accounted for 5.5% of all hospitalizations during the study period. BOUGLOUGA *et al.* [5] had found a comparable frequency of 4%, while KONATE *et al.* [9], DIARRA *et al.* [10] reported lower frequencies of 2.5% and 1.6% respectively. The difference between the results of these last two studies and ours

could be explained by the duration of the studies and the size of the samples that were higher in our case.

The average age of our patients of 46.6 ± 15.1 years is significantly higher than in other studies conducted in our country [9] [10] and Togo [6]. However, an upper average age of 64 years was reported by Heidi in Bordeaux [11]. The average age of patients in our study is comparable to that usually observed in cirrhosis studies in our context.

The male sex represented 67.5% of the sample. The same findings were made by other series [6] [7] [8] [9] [10], may be a change in men's more frequent exposure to risk factors for cirrhosis that is complicated by this hemorrhage. Frequent representation of housewives (31.2%) farmers (22.1%) is superimposed on that found in other studies of cirrhosis in Mali (9, 10). The low standard of living of these social strata may contribute to frequent transmission and delay in the management of the hepatitis B virus (HBV), which is the leading cause of cirrhosis in Mali [10] [12]. Jaundice was found in 26.4% of our patients, comparable to the Diarra *et al.* [10] study which found 26.3%, while Konaté *et al.* [9] reported a much higher frequency of 54%.

The frequency of signs of severe bleeding (paleness, low blood pressure and $Hb < 7$ g/dL) warranted the indication of a blood transfusion in 61% of patients and 83% of these patients were transfused by total blood because of the constant unavailability of the more recommended erythrocytic concentrate. The use of this total blood would explain the recurrence of the hemorrhage that was observed exclusively there. It also did not improve mortality compared to the non-transfused group ($p=0.0990$).

High mortality of 23.4% was reported by other series [2] [3] [4] [8] [11] [13] that involved digestive bleeding by esophageal varices rupture. Liver encephalopathy was the leading cause of death for our patients with 72.2%. This finding was made by the Malian series [9] [10], respectively 29.2% and 15.2%, and 50% in TOGO [6].

5. Conclusion

Digestive bleeding by rupture of esophageal varices is one of the most formidable complications of cirrhosis, frequently encountered in hospitals, with a sometimes high mortality rate. The prognosis can be improved by acquiring more efficient resuscitation means. Universal vaccination against HBV, the leading cause of cirrhosis in Mali, could reduce the frequency of this condition and mortality from esophageal varices rupture.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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