

## Bleeding Feature in the Hematology Department in Brazzaville, Congo

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### Abstract

**Background:** Epidemiological and clinical characteristics data of patients with bleeding symptoms are unknown.

**Methods:** a total of 6961 medical records of patients admitted in the hematology department in a teaching hospital from 2000 to 2016 were reviewed. We enrolled in the study all patients' medical records that were reporting bleeding complications and analyzed retrospectively their epidemiological data, severity, clinical and biological characteristics.

**Results:** A total of 35 people (20 men and 15 women), with a median age of 29 (range 3 and 76) years had bleeding complications. The overall incidence of bleeding complication in the hematology department was 0.56%. The bleeding was significantly minor (51.23%). Among this group, petechiae was the most common hemorrhage symptoms: 31.71%. The bleeding was major in 48.77%. In this group, the principal cause of the bleeding events was acute leukemia (n=13; 37.41%); that was the main likely cause of intracranial hemorrhage which accounted for 29.27%. Hemophilia was the second cause of bleeding episode (n=5; 14.29%) followed by bone marrow failure (n=4; 11.43%). The median platelet count was 39.92 (range 10 and 253) G/L.

**Conclusion:** Bleeding event is rare and mostly associated with acute leukemia. The high proportion of intracranial hemorrhage in this group of requests further studies on the outcome and predictive factors of it.

**Keywords:** Bleeding complications, Epidemiology, Clinical characteristics, Congo

### 1. INTRODUCTION

Bleeding or hemorrhage is the most frequent complication of anticoagulant therapy [1]. It is also associated with a variety of blood disorders and non blood disorders. Bleeding results from local vessel damage or abnormalities in platelet functioning and number. Hemorrhage manifests in various ways including cutaneous, mucous, muscle, joint and visceral bleeding and provides clues as to the underlying causes. Rate of bleeding events are difficult to assess since they are diversely characterized by authors and classifications [1]. Hemorrhage events distribution are unknown and never been reported in the Congo. The aim of our study is to describe the pattern and causes of hemorrhagic symptoms in the Hematology department of the teaching hospital in Brazzaville.

### 2. Patients and Methods

We performed a retrospective from 2000 to 2016 in the Hematology department of the teaching hospital in Brazzaville.

**Table1.** Bleeding severity

Category	Description
Minor bleeding	Soft tissue bruising, petechiae, vibices, hemarthrosis, Melenae, hematemesis haematuria, haemoptysis, epistaxis Genital hemorrhage that do not require red cell transfusion. Retinal hemorrhage without impaired vision
Major bleeding	Hematoma, hemarthrosis, hematemesis, haematuria, hemoptysis, soft tissue hemorrhage requiring red cell transfusion. Intracranial hemorrhage, retinal hemorrhage with impaired vision.

All medical records of patients admitted during the study period were reviewed. Medical records

with bleeding complications were reviewed. Depending on the quantity of blood loss, bleeding was defined in two main categories based on the World Health Organization (WHO) classification as major and minor bleeding summarized in the table I [2].

### 2.1. Patients

Data abstracted from records were variables related to gender, age, bleeding symptom, severity of the bleeding, cause of the bleeding and platelet count.

#### 2.1.1. Statistical analysis

Data were entered into Microsoft Excel and analyzed using SPSS (Chicago-USA). Categorical variable were described as proportion (percentage), continuous variables were described as medians.

## 3. RESULTS

During the period study, 6961 patients were admitted in the Hematology department of the teaching hospital. Among them, 35 (0.45%) patients presented hemorrhage symptoms. They were 20 men (57.14%) and 15 women (42.86%) with a sex ratio of 1.33. All of them were coming from urban area. They were aged between 3 and 73 years old (mean age 29.16 years).

### 3.1. Type of Bleeding Symptoms

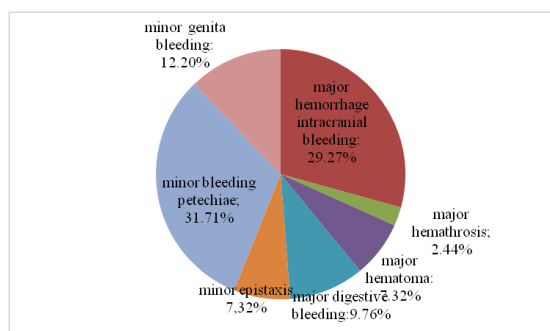


Figure1. Type of bleeding

The bleeding was minor in 51.23% and major in 48.77%. Among the minor hemorrhage the different type of feature bleeding were petechiae: 31.71%; genital: 12.20% and epistaxis: 7.32%. The Intracranial hemorrhage (ICH) was the main pattern of the major hemorrhage with 29.27%. Figure1.

### 3.2. Causes of Hemorrhage

A significant fraction of the bleeding symptoms were associated with acute leukemia (n=13, ; 37.14%), 10 cases of acute leukemia and 3 cases

of lymphoblastic leukemia), hemophilia(n=5; 14.29%), bone marrow failure (n=4; 11.43%), auto-immune disease(n=4;11.43%), infection (n=3: ), stomach ulcer(n=3; 8.57%) and platelet disorder (n=3; 8.57%). Figure2.

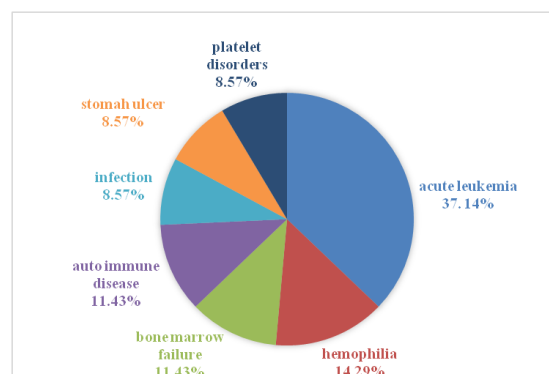


Figure2. Causes of bleeding complications

### 3.3. Platelet Count

The group studied had a thrombocytopenia (low platelet rate) with a median number of 39.92 G/L (range 10 and 253 G/L).

## 4. DISCUSSION

Demographic range and pattern distribution of hemorrhage in the Hematology department have never been reported even though they have been identified to increase the mortality in the department [3]. The present study is the first in the Congo to attempt to report the feature of hemorrhage of patients admitted in the Hematology department. Bleeding is not a common complication in the department since only 35 patients with a mean age of 26.16 years have presented bleeding episodes. Hemorrhage is the second most common complication of hematological malignancies associated with high mortality and morbidity[2,4,5,6]. As other studies, intracranial hemorrhage (ICH) is the principal type of bleeding noted in the hematological malignancies [2]. It occurs more with myeloid than lymphoid malignancies [4,]. In our series 10 on 13 patients with ICH had a myeloid leukemia which confirms previous reports. The pathogenesis of ICH among patients with hematological malignancies involves thrombocytopenia, coagulation factors deficiency, infections, vessels abnormalities and chemotherapies [7].

Hemophilia is the second cause of bleeding event in the hematology department. Hemophilia is an inherited bleeding disorder due to a deficiency of clotting factors (Facteur VIII for hemophilia A and facteur IX for hemophilia B).

Hemophilia causes internal bleeding (hematoma, hemarthrosis) or spontaneous external bleeding following a minor trauma or surgery [8,9]. In Sub-Saharan Africa, the prevalence of the hemophilia is unknown because of the lack of laboratories' facility diagnosis and systematic screening of newborn. Therefore, Hemophilia is often discovered during circumcision which is the first minor surgery performed in young healthy boy [10, 11].

Cutaneous hemorrhagic was the most frequent hemorrhagic symptoms in our study. It has different forms: petechiae, bruises, vibices and results to a spontaneous extravasation of the erythrocytes inside the capillary vessels in the skin. Lesions are macular, red violet and are not felt on the palpation. Cutaneous bleeding occurs in case of severe thrombocytopenia associated with the decrease of the number of platelets below 30G/L of blood [8]. Cutaneous hemorrhagic is associated with hematological malignancies but also autoimmune disorders.

Mucous bleeding are the symptoms the less represented in our cohort. As cutaneous hemorrhagic symptoms, they are correlated to the severity of the thrombocytopenia. They also provide clues to underlying disorders that are not linked to blood disorders which explain the poor number of these symptoms in the hematology department.

## 5. CONCLUSION

Based on the findings of this study bleeding events are not frequent in the Hematology department. However the high rate of intracranial hemorrhage requests further studies on the outcome and predictive factors of this complication.

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