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CONTRIBUTION TO THE STUDY OF THROMBOCYTOSIS AT THE UNIVERSITY HOSPITAL OF "AMITIÉ SINO-CENTRAFRICAINE" OF BANGUI (CENTRAL AFRICAN REPUBLIC)

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ABSTRACT

Context and objectifs: The thrombocytosis is a common abnormality of blood cell count in our practice. It raises an etiological problem that remains undocumented in the hospital environment in Bangui. The objectif of this study was to identify the main etiologies of thrombocytosis.
Matérials and methods: It was a retrospective and descriptive study with a duration of five years from January 2012 to December 2017 at the department of surgery and internal Medicine of University Hospital of "Amitié Sino-Centrafricaine". We Included in this study the patients who had more than 500G/L of blood platelet on two consecutives blood cell count at a few weeks of intervals.
Results: we included 31 patients among 10314 files exploited. There were 15 men and 16 women. The sex ratio was 0.93. The average age of our patients was 46.5 years with extremes ranging from 18 to 75 years old. 27 (87.09%) cases of thrombocytosis were secondary to mild illness. 4 cases (12.90%) were primitive related to myeloproloferative syndrom. The main etiologies of secondary thrombocytosis were surgical (22.58%), haemorrhage (22.58%), infections (19.35%), inflammation diseases (12.90%), benign tumors (6.45%) and one case had an indeterminate etiology. The main etiologies of primary thrombocytosis were polycythemia vera (6.45%), chronic myeloid leukemia (3.2%) and essential thrombocythemia (3.2%).
Conclusion: the discovery of a thrombocytosis on the blood cell count is a frequent situation. Most in our context are reactionary to mild disease. The primitive etiology is rare and must be evoked before persistence of thrombocytosis. A other study will be necessary to the children in order to elaborate the definitive etiological orientation in Bangui.

INTRODUCTION

The thrombocytosis is defined by an elevated platelet count above 500 G / L on two consecutive blood count. According to the classification, we have the mild thrombocytosis, if the platelet count is >500 and <700G/L; the moderate thrombocytosis, if the platelet count ranges between >700 and <900G/L, the severe thrombocytosis, if the platelet count is >900 G/L and extreme thrombocytosis, if the platelet count is >1000G/L [1]. It is a frequent anomaly wich create a important diagnostic challenge [2, 3]. It is reactive when it occurs in the context of a secondary pathology and is generally moderate and transitory. When it is primitive, it is part of the myeloproliferative syndrom. The evolution is characterized by thrombo-haemorrhagic complications. Secondary thrombocytosis is benign and has a favorable prognosis than primary thrombocytosis called thrombocytemia [3, 4, 5]. The etiologies of thrombocytosis are numerous. In Germany, the prevalence of primary thrombocytosis is 12.3% and secondary thrombocytosis is 87.7% [6]. In Madagascar thrombocytosis was found in 6.09% of cases [7]. In the Central African Republic, no studies have been done to date on this anomaly. It why we did this study wich objectif was to

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determine the prevalence of thrombocytosis in the hospital environment in order to identify the main etiologies at Bangui.

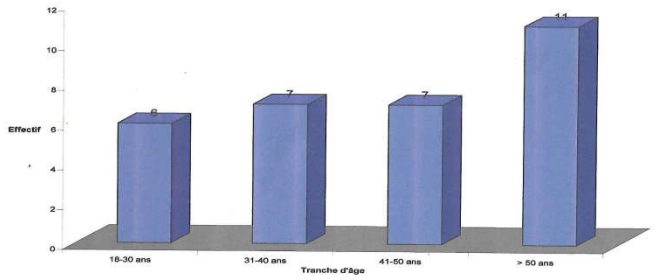
PATIENTS AND METHODS

It was a retrospective and descriptive study with duration of five years, from January 2012 to December 2017. The departments of internal medicine and general surgery of university hospital of "Amitié Sino-Centrafricaine" was the place of our study. We included in the study, the patients older than 18 years, with the blood count of platelets above 500 G / L on two consecutive tests. The blood counts was performed in the laboratory with a machine Beckmann HMX coulter and in the normal condition. We studied the following parameters: Epidemiological data (age, sex); clinical data (medical history), biological data and the clinical and biological proof of the diagnosis of these patients. Then, we fill in the selected patients on a questionnaire data. The data analysis was done with Epi info Version 3.5 .1 software. The input of the results, the elaboration of the tables and figures were made with the Word and Excel software.

RESULTS

We included 31 patients among 10314 files used. The prevalence of thrombocytosis was 0.3%. They were 15 men (48.5%) and 16 women (56%). The sex ratio was 0.93. The average age of our patients was 46.5 years with extremes that ranged from 18 to 75 years old. The majority of patients were over the age of 50 (35.5%). The Figure I shows the distribution by age group.

Figure I : *Distribution of patients by age group*



The marital status of the patients was single in 67.7% of cases, married in 9.7% of cases, widowed in 6.5% of cases, divorced in 6.5% of cases and lived in concubinage in 9.7% of cases. The professions of the patients were: driver (19,35%), shopkeeper (16,12%), public servant (12,9%), farmer (6,4%), artisan (9,68%) and more patients (35.5%) did not practice any profession. The Table I shows the distribution by reason of hospitalization.

Table I Distribution of patients according the reason of their hospitalization

Reason of hospitalisation	Effectif (n=31)	percentage
Fever	7	22,6%
Anémia	3	9,7%
altération of general state	3	9,7%
Splenomegaly	1	3,2%
Lymphadenopathy	2	6,4%

These signs were often associated with the same patient.

The thrombocytosis was secondary to a benign pathology in 87.09% of cases and 12.90% was related to myeloproliferative syndrom. They were found in different departments: 7 cases (22.58%) were observed in the postoperative course in the department of surgery. These were patients who had hernia treatment (6.4%), splenectomy (6.4%); hysterectomy (3.22%), a cystectomy (3.22%) and an exploratory laparotomy (3.22%). 13 patients (41.93%) were observed in the hepatogastroenterology department. There were 4 cases (12.90%) of ulcerative colitis, one case of oesophageal leiomyoma, one case of gastric polyp and 7 cases (22.58%) of haemorrhagic syndromes such as hemorrhoidal rectal bleeding (16, 2%) and hematemesis of great abundance (6.45%). In the infectious diseases department, there were 3 cases (9.69%) of HIV associated pneumonitis, 2 cases (6.45%) of an infectious gastroenteric and one case (3.22%) of purulent meningitis. One case (3.22%) was observed in the neurology department in a patient whose diagnosis had not been found. The primary thrombocytosis included the polycythemia vera (6.45%), the chronic myeloid leukemia (3.2%) and the essential thrombocythemia (3.2%). In the evolution, we noted: 18 cases of secondary hyperplaquetosis had a favorable evolution. all patients with primary thrombocytosis had died. The Table II shows the evolution by age group and type of hyperplateletosis.

Table II Evolution of patients by age grou

Age range	Death		resolutive		Total
	Primary thrombocytosis	Secondary thrombocytosis	Primary thrombocytosis	Secondary thrombocytosis	
18-30 ans	1	0	0	5	6
31-40 ans	0	2	0	5	7
41-50 ans	0	0	0	7	7
50 ans	3	0	0	8	11
Total	4	2	0	25	31

DISCUSSION

The prevalence of thrombocytosis was 0.3%. It was relatively low compared with 6.09% in the laboratory of Madagascar on a period of 9 months [7]. Recruitment bias and poor record keeping in our context during our study period may explain our weak sample. The sex ratio in our study was 0.93. Marta fernandez C et al had not found a predominance of sex in a study of 33 patients referred for thrombocytosis [8]. There was a slight male predominance in the study of GRIESSHAMER et al [6], a difference that could be explained by the size of his sample which was 723 and also the critera to select the patient was different for us. it included both the children and adults. In terms of age, we found an age of 46.5 years with extremes that ranged from 18 to 75 years. thrombocytosis are found at any age according to etiologies. The focus of our study welcomes patients from the age of 18 years old, explaining the age-group extremes in our study. Clinically, the fever was the main symptom in our patients, as well as the anémia and the deterioration of the general state. These signs are often associated. According to Barton BE at al, the clinical signs associated with thrombocytosis are polymorphic and depend of etiologies. The action of cytokines and lymphokines observed during the thrombocytosis had a importance role and explain the several symptoms found in our study as fever, general state. In etiological item, the etiologies of these thrombocytosis were dominated by reactionnel'étiology. There were 27 cases (87.09%) and these found in all age groups. Primary thrombocytosis accounted for 12, 90%. These results corroborate the study of GRIESSHAMER et al [6] where the authors reported 87.7% of the secondary causes versus 12.3% for the primary causes. Buss D.H et al [10] also proved this predominance by reporting 82% for secondary causes and 14% for primary causes in a study of 280 cases. A other study for

Rakota Alson AO et al [7] in Madacascar on the analysis of thrombocytosis recruited for 9 months on blood counts also found a predominance of reaction causes. The diagnosis of primary thrombocytosis is no easy in our exercise context in the Central African Republic because of inadequate technical platform, what remains under-diagnosed. But our results reported to those of the literature, show a predominance of secondary thrombocytosis. The secondary etiologies were surgical suites (22.58%), haemorrhage (22.58%), infections (16.13%), inflammatory diseases (12.90%), benign tumors (9.69%) and a case was undetermined (3.2%). The primary etiologies were polycythemia vera (6.45%), chronic myeloid leukemia (3.2%) and essential thrombocythaemia (3.2%). These results are the same to the study of GRIESSHAMER et al [6] who found the surgical suites (40%), infections (25%), chronic inflammatory diseases (10%), splenectomy (2%), a other causes (1%), polycetamia vera (2.5%), Thrombocythemia Essential (5.5%) and the Chronic myeloid leukemia (3.2%). In the study of Buss et al, [10] the etiologies of thrombocytosis were dominated by inflammatory diseases (31%), splenectomy (19%), tumors (14%), infections (9%), surgeries suites (6%). These differences were related to the sample size and the modality of recruitment of the patients. A nother similar study in Pakistan [11] found infections (44.9%), tissue damage (11.4%). In Spain, Mata fernandez et al [8] found infections (48%), anemia (24%) and 15% were associated with both causes. These results show that many pathological situations may be accompanied by an increase in the number of platelets in the blood as reported in [1, 12]. According to [12, 13, 14], the increase in thrombocytopoiesis in the thrombocytosis of is related to a thrombopoietin and interkeukin as IL-6 which is part of the inflammatory activator. In evolution of our patients, we noted 61.29% of favorable cases of. All treated patients for primary thrombocytosis had died. In general, reaction thrombocytosis is a transient of favorable evolution contrary to primary cases. [15]. This unsatisfactory result is also related to the level of technical platform in our hospital environnement.

CONCLUSION

The thrombocytosis is a frequent anomaly wich however create an important diagnostic challenge. The prevalence is low in our context because of the technical platform insufficient. In hospital environment of Bangui, the thrombocytosis generally either is a reactive process or is caused by a clonal bone marrow disorder; the latter category includes essential thrombocythemia. However prospective study to the department of children will be necessary to elaborate the definitive aetiologies of thrombocytosis in Bangui.

Conflict of interest: none

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