



Deep Venous Thrombosis in Hospitalization in the Department of Cardiology of the Gabriel Toure University Hospital

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Abstract

Objective: The aim of this study was to describe the epidemiological, clinical and Para clinical characteristics in patients hospitalized for deep vein thrombosis in the cardiology department of Gabriel Toure University Hospital.

Methodology: It was a retrospective and descriptive study from January 2011 to December 2014 and involved all patients hospitalized during the study period.

Results: The study included 57 patients out of 1738 hospitalized patients; with a prevalence of 3, 28%. The average age was 48 years, with the extreme ages of 17 and 90 years. The sex ratio was 0.50. The risk factors found in the study were HIV (17.54%), oral contraceptives (14.03%), smoking including 10.53% of active smokers and 3.51% of weaned smokers, overweight (8.77 %), prolonged bed rest (8.77%) and heart failure (8.77%). 85.96% (n=49) of patients had isolated venous thrombosis of the lower limbs and 14.08% (n=8) had venous thrombosis and pulmonary embolism association.

Through the Doppler of the lower limbs, venous thrombosis involved the left lower limb in 57.89% and the right lower limb in 40.35%.

Three (3) deaths were recorded, all in a context of massive pulmonary embolism complication, with a fatality rate of 5.26%.

Conclusion: DVT is a common reason for hospitalization. Its most feared complication is pulmonary embolism responsible for most deaths due to this disease. Prevention is the key element of treatment.

Keywords: DVT; Cardiology; Gabriel Touré Hospital

Introduction

Deep Vein Thrombosis (DVT) consists of partial or complete deep venous obstruction by endoluminal thrombus, the location of which is possible throughout the venous artery with predominance of the lower extremities. The DVT affects 1-2/1000 people/year in the general population. The incidence increases with age to reach 5-10/1000 people/year after age 80.

Its mortality is mainly related to its major complication (1/3 of cases): Pulmonary Embolism (PE). The overall mortality is about 5% at 30 days and 20% at one year, except for patients with neoplasia for which it is much higher.

Studies on venous thrombosis of the lower limbs in sub-Saharan Africa have shown a prevalence of 3.1% in Côte d'Ivoire [1], 1.17% of cardiovascular diseases in Senegal [2,3], 0, 1% of diseases in cardio logical field in NIGERIA [4] and 3.8% of cardiovascular events during HIV infection in BURKINA FASO [5]. In Mali, the prevalence of thrombophlebitis of the lower limbs is estimated at 0.52% in 2005 [6] and 1.88% in 2009 [7]. The increasing frequency of this pathology in hospital medical environment and the very few recent studies carried out on this subject in Mali, have led us to undertake this study conducted in a specialized cardio logical environment aimed at describing

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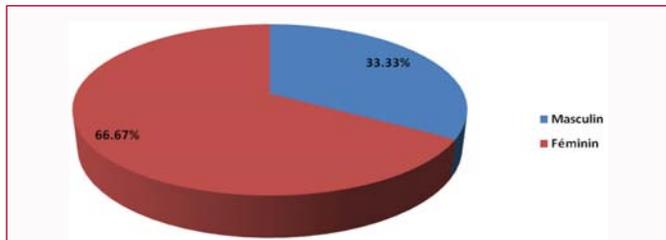


Figure 1: Distribution of patients by sex. The female sex was predominant with 66, 67% against 33.33% for the male. The sex ratio was 0.50.

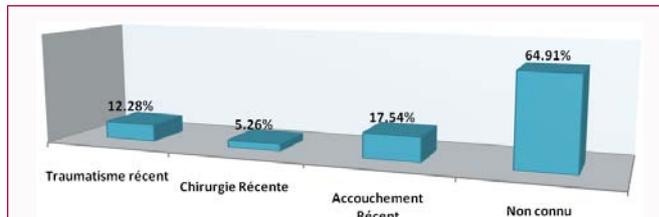


Figure 4: Distribution of patients by triggering factor. The triggering factor was not found in 37 patients or 64.91% of cases. Recent child birth was the most important trigger factor with 17.54% of cases.

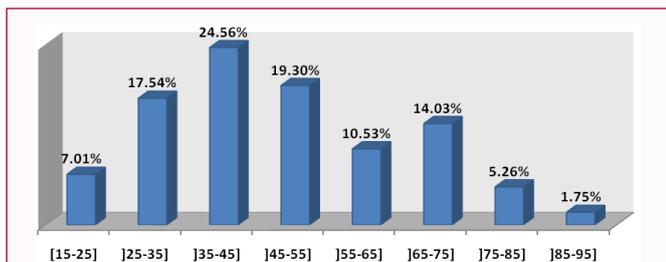


Figure 2: Distribution of patients by age group (year). The 35 to 45 year -old age group had a majority of 24.56%. The average age was 48, with the extreme ages of 17 and 90 years old.

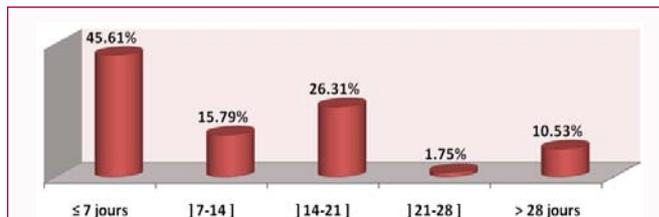


Figure 5: Distribution of patients by time between onset of symptoms and date of hospitalization. The majority of patients were hospitalized in the first week after onset of symptoms, or 45.61% of cases.

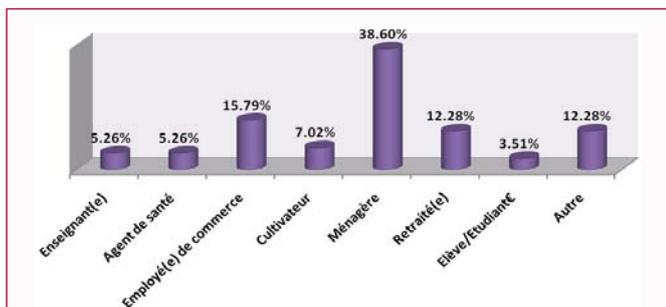


Figure 3: Distribution of patients by profession. The house wives were the most represented with 38.60%.

the epidemio clinical and paraclinical characteristics of hospitalized patients for deep vein thrombosis in the cardiology department of Gabriel Toure University Hospital.

Methodology

It was a retrospective and descriptive study that took place over four (4) years from January 1, 2011 to December 31, 2014. This work took place in Mali, precisely in Bamako within the Cardiology Department of the Gabriel Toure University Hospital. Our study focused on hospitalized patients in the Cardiology Department of the Gabriel Toure University Hospital. The sample consisted of all patients hospitalized during the study period, with deep vein thrombosis of the limbs confirmed by venous Doppler ultrasonography of the limbs. The data collection consisted of an exploitation of the medical records of the patients. The data carrier is an individual inquiry form.

The mask, the data entry and the data analysis were realized with the software Word 2010, Excel 2010 and SPSS 21.0 French version for Windows.

Results

Out of a total of 1738 patients registered in hospital, 57 were included in this study for a prevalence of 3.28%. The average

Table 1: Distribution of patients according to the frequency of risk factors.

Risk factors	Numbers	Percentages
Active tobacco	6	10,53
Weaned tobacco	2	3,51
Active alcohol	3	5,26
Weaned alcohol	1	1,75
Extended bed rest	5	8,77
Oral contraception	8	14,03
Thrombosis history	4	7,02
Heart failure	5	8,77
Overweight	5	8,77
Plastered immobilization	1	1,75
HIV	10	17,54
Other	6	10,53

NB: Other = Tumors, polycythemia, acute infection, Age >75 years. HIV infection ranked first with 17.54% (10 cases), followed by oral contraception with 14.03% (8 cases).

incidence of the disease was 14 cases per year. The females ex was predominant with 66.67% against 33.33% for the male. The sex ratio was 0.50 (Figure 1). The 35 to 45 year-old age group had a majority with 24.56%. The average age was 48 years old, with the extreme ages of 17 and 90 years old (Figure 2 and 3). In the series, house wives were the most represented with 38.60%. HIV infection was the leading risk factor wit 17.54% (10 cases), followed by oral contraception at 14.03% (8 cases) (Table 1). The triggering factor was not found in 37 patients (64.91% of cases). Recent child birth was the most important trigger factor with 17.54% of cases (Figure 4).

The majority of patients were hospitalized in the first week after onset of symptoms with 45.61% of cases (Figure 5). Patients who had isolated venous thrombosis were the most numerous with 85.96% (49 patients). Deep vein thrombosis was complicated by pulmonary embolism in 14.03% of cases (Figure 6). Tumefaction of the lower limb was the reason for consultation for the majority of patients with

Table 2: Distribution of patients by location of deep vein thrombosis.

Localizations	Numbers	Percentages
Left lower limb	33	57,89
Right lower limb	23	40,35
Right upper limb	1	1,75
Left upper limb	0	0,00
Total	57	100,00

The lower left limb was the most commonly affected by DVT, with 33 cases representing 57.89%.

On the other hand, the upper limbs are less affected, with only one case being 1.75%.

Table 3: Distribution of patients according to the level of D Dimers.

	Numbers	Percentages
Performed High	2	100,00
Normal	0	0,00
Total	2	3,51
Not performed	55	96,49
Total	57	100,0

D Dimers was positive (>500 ng/ml) in 100% of the patients who performed this examination (3.51% of cases)

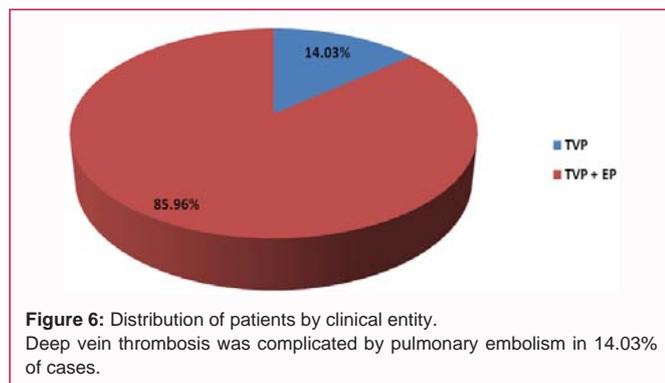


Figure 6: Distribution of patients by clinical entity. Deep vein thrombosis was complicated by pulmonary embolism in 14.03% of cases.

39 cases (68.42%) (Figure 7). Clinically, edema of the lower limb and thigh or leg pain were found mainly with respectively 82.46% and 68.42%. The sign of Homans was positive in 59.65% of cases (Figure 8). The lower left limb was the most commonly affected by DVT, with 33 cases representing 57.89%. On the other hand, the upper limbs are less affected, with only one case being 1.75% (Table 2). The level of D-Dimers was positive (>500 ng/ml) in 100% of the patients who performed this examination (3.51% of cases) (Table 3). Most patients had a favorable outcome with 82.46% of the cases. Three patients died following the complication of DVT in massive pulmonary embolism, with an overall case-fatality rate of 5.26% (Figure 9).

Discussion

In the study conducted from January 1, 2011 to December 31, 2014 and conducted in the cardiology Department of the Gabriel Toure University Hospital, 57 cases of DVT were retained among 1738 hospitalization records, giving a hospital prevalence of 3.28%. This result is similar to that of IGUN [4] in Nigeria, which found a prevalence of 3.8%. In Burkina Faso, Niakara [5] reported the same frequency among cardiovascular manifestations during HIV infection. In European countries, the prevalence varies between 17% to 42.6% [8,9]. The decline in prevalence in black compared to European series is explained by the existence of a racial factor: Blacks have a significantly lower platelet count, and a significantly greater

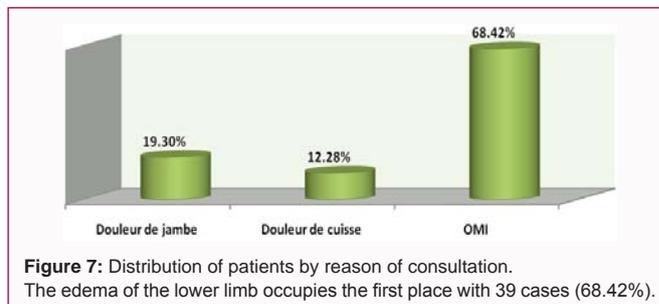


Figure 7: Distribution of patients by reason of consultation. The edema of the lower limb occupies the first place with 39 cases (68.42%).

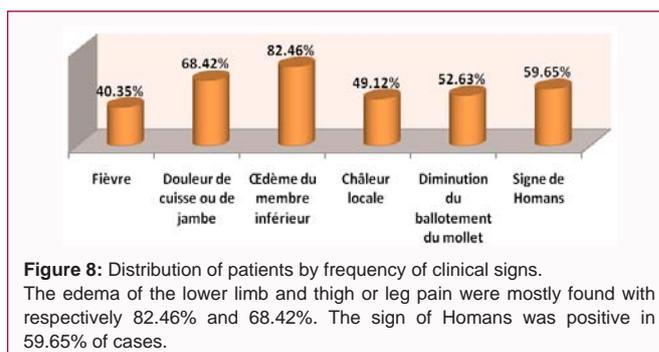


Figure 8: Distribution of patients by frequency of clinical signs. The edema of the lower limb and thigh or leg pain were mostly found with respectively 82.46% and 68.42%. The sign of Homans was positive in 59.65% of cases.

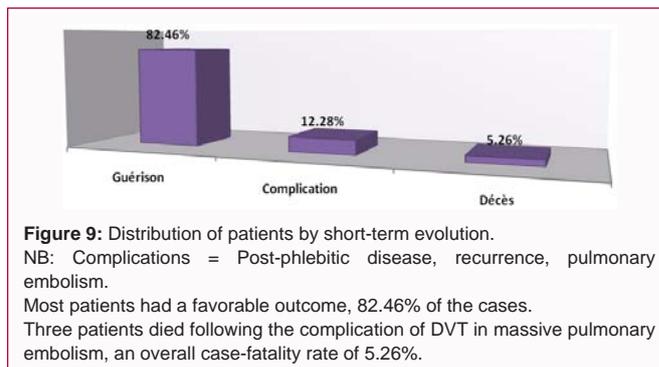


Figure 9: Distribution of patients by short-term evolution. NB: Complications = Post-phlebotic disease, recurrence, pulmonary embolism. Most patients had a favorable outcome, 82.46% of the cases. Three patients died following the complication of DVT in massive pulmonary embolism, an overall case-fatality rate of 5.26%.

platelet volume [10]. In 14.03% of cases, deep vein thrombosis was complicated by pulmonary embolism. It was isolated in 85.96% of the cases. Anderson et al. [11] who, in a study conducted in the United States had found 48% isolated DVT. In our series, the female sex was the majority, with 66, 67%. The sex ratio was 0.50. This female predominance was found by Samama et al. [12] and Traoré [13] who found 54% and 56% respectively. The 35 to 45 age group was pre dominantly represented, with 24.56% of patients. The average age in our series was 48, with extremes of 17 and 90 years. This average was comparable to that seen in other studies [14,15]. Reny at Georges Pompidou's European Hospital found an average age of 43 years. The household was the activity found mostly with 38.60% of the activities in our study. This predominance is explained by the fact that housewives are the most represented social group in Mali. This result is slightly below that of Traore [13] who found 40% of housewives. In our study, HIV infection ranked first with 17.54% (10 cases), followed by oral contraception with 14.03% (8 cases). Kingue et al. [16] estimated that HIV was a contributing factor in 11.14% of patients. Niakara et al. [5] found HIV as a co-factor in 10% of cases. 64.91% of the patients had no triggering factor. Recent child birth was mostly found as a contributing factor, accounting for 17.54% of cases. This could be explained in part by the predominance of women [17]. According to an amnestical data, the edema of the lower limb was the most observed

reason for consultation, with 68.42% of cases. The literature confirms that edema of the lower limb is the main sign of DVT [8]. In addition it was also the predominant clinical manifestation, followed by thigh or leg pain, respectively 82.46% and 68.42% of cases. Diallo et al. [6] estimated that the dominant call signs of thrombophlebitis of the lower extremities were local inflammation and painful impotence of limbs with respective frequencies of 40% and 36%. In the series, no patient presented duplex venous thrombosis; 57.89% of the location of the thrombosis was in the lower left limb, this is the most common location, followed by the lower right limb with a rate of 40.35%. Benjelloun et al. [18], in the study of the epidemiology of MTEV at the University Hospital Hassan II of Fez (Morocco) found that the most frequent location of thrombosis is in the lower left limb with 60% of cases, followed by right lower limb with 20.2% of cases. Thus, there is a concordance between our study and that made in Morocco. In our series, only one patient has phlebitis of the upper limbs, 1.75% of cases, secondary to scoliosis-type thoracic deformity. Ferrario et al. [19] in the "Journal of Laryngology, Otolaryngology and Rhinology" in 1997 reported that DVT was due to the usual vascular disorder in the lower limbs; it manifests itself very rarely at the level of the upper extremity or the neck. In our study, 100% of patients who did a dosage of D-Dimers all had a rate greater than 500 ng/ml. Stein et al. [20] found that the negative D-D levels should lead us to reverse a diagnosis of DVT and to stop the investigation of low-risk patients. In addition Vincens et al. [21] in 2007 had noticed that a concomitant prescription of the C-reactive Protein Assay (PCR) coupled with D-Dimer level dosage have an interest in the diagnostic approach of DVT. Hospital progress was considered favorable in 82.46% of patients. Were corded a lethality of 5.26%, which is close to the 5% frequently reported in the literature [9,16,17]. According to the same sources in the absence of treatment the lethality varies between 25 and 30%.

Conclusion

The present work determines the epidemiological and paraclinical aspects of Deep Venous Thrombosis (DVT) in the Cardiology Department of Gabriel Toure University Hospital. This study reveals that DVT affects women and subjects between 35 and 45 years. It is significantly discovered by edema of the lower limb and pain of the leg or thigh. The combination of several risk factors remains a hypothesis that still requires a lot of studies to determine the frequency and relative risk of DVT for each of these factorial associations. Its most fearful complication is pulmonary embolism. DVT is a common reason for hospitalization and prevention remains the key element of care.

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