

# Management of hemangiomas by propranolol: Epidemiological, clinical and therapeutic aspects: Retrospective study about 15 cases

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## ABSTRACT

The objective of this study was to determine the epidemiological, clinical and therapeutic profile of cutaneous hemangioma at the Niamey National Hospital. This is a retrospective study carried out over a period of 2 years, in the Unity of Dermatology and Venerology. Out of a total of 1648 consultations in 2 years, 33 cases of cutaneous angioma were identified; which represented 2%. The prevalence was predominantly female (80%) and the sex ratio M/F was 0.25. The age group 0-5 months was more represented (66.7%) with ages ranging 2 days and 24 months. Of the 33 cases of angioma, 25 were hemangiomas and 8 were malformations without any cardiac anomalie. Patients retained for the study were those with hemangioma (25 cases with 76%) who received the Propranolol protocol used in the oral dosage of 1 mg/kg/day for 24 months. Only 15 patients recovered totally from hemangioma. Tolerance was good in 93.3%. **Conclusion:** Several therapies still show their limit. Due to the often serious side effects with corticosteroids, treatment based on betablockers can be a way of the future, given the satisfaction of results and the good tolerance to these molecules.

**Key words:** Angioma; Hemangioma; Propranolol

## INTRODUCTION

Angiomas are a heterogeneous group of vascular diseases including hemangiomas and malformations [1-3]. Immature angioma or hemangioma is a benign vascular tumor of undetermined etiology following proliferation of endothelial and mesenchymal cells with formation of neo-vessels in the dermis [4,5]. They are the most common tumors of the child, with a prevalence of 10% and whose diagnosis is essentially clinical [4-6]. The management uses various methods namely: corticosteroid therapy, surgery, laser, radiotherapy, interferon, betablockers that currently seem the most used [5,7,8]. The purpose of this study was to

determine the epidemiological and clinical aspects of angiomas, but also to evaluate the outcome of the management of hemangioma by a betablocker, that is Propranolol.

## MATERIAL AND METHODS

This is a retrospective study lasting 2 years from January 1, 2012 to December 31, 2013, conducted at the Dermatology and Venerology Department of the National Hospital of Niamey. The information was collected from the consultation records using a survey card containing epidemiological, clinical, paraclinical and therapeutic data. Included in this study were all

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cases of skin hemangiomas diagnosed and treated with Propranolol tablet for 24 months. The protocol of Propranolol was as follows: 1 mg / kg / day diluted in tap water, and administered with a 10 ml syringe. The intake was 5ml in the morning and 5 ml in the evening. Patients with vascular malformation and cases of hemangioma lost from the study were excluded from the study. The data was entered on the Epi-info software version 3.5.1 and transferred to the EXCEL software for analysis.

## RESULTS

During the study period, we collected 33 cases of cutaneous angioma out of 1648 consultations, either a frequency of 2%. Of these 33 cases, 25 patients (76%) had hemangioma and 8 had vascular malformation (24%). Fifteen out of twenty five patients with hemangioma (26%) performed Propranolol treatment, including 12 girls and 3 boys. The concept of consanguinity was found in 6.7% of cases. Patients younger than 5 months were the most represented (66.7%). The average age

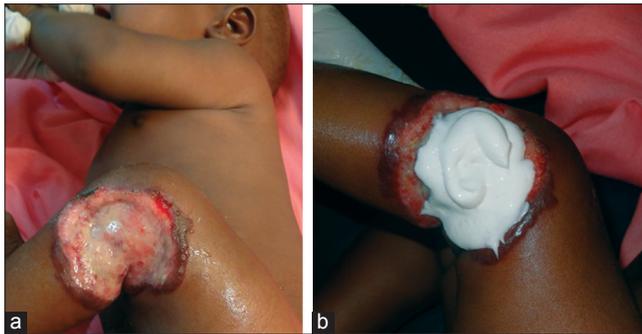
was 5.8 months and the extremes were 2 days and 24 months. Hemangiomas appeared 2 months after birth in 46.6% of cases, with a predominant localization in the cephalic region (forehead and cheeks) (Table I).

The pre-therapeutic assessment carried out namely: Glycemia, Transaminases, Creatinemia, ECG, was without any particularity. Tolerance to oral therapy was good in all patients. Local treatment has been associated with trolamine in ulcerated hemangiomas (Figs 1A and 1B) Complications were noted in 6 cases (40%): either aesthetic type (Fig. 2) in 83% of cases, or infectious type in 16.7% of cases (Fig. 3). Treatment evolution was favorable in 93.3% of cases (Figs. 1A and 4).

## DISCUSSION

Out of a total of 1648 consultations in 2 years, 33 cases of cutaneous angioma were collected, either a frequency of 2%. Lower frequencies have been reported: In Mali, GUINDO O et al. reported on 4544 dermatological consultations 31 cases of angiomas during a study period from 19 July 2005 to 23 April 2009, ie 0.68% [9]; in Burkina Faso TRAORE FB et al. in 2003 found 12 cases of angiomas among 14265 patients consulted during the study period from January 1, 1992 to December 31, 1996, a frequency of 0.08% [10]. In our study the sex ratio was 1 man for 4 women. Most studies have reported a female predominance [7,11,12-14]. In literature this predominance of women has no explanation yet [15].

The 0-5 month age group was the most represented in our study (66.7%), with an average age of 5.8 months. This average age was lower than that reported by some authors with respectively 9.65 months and 13.06 months[11,13]. As in our case with 6.7%, the notion of consanguinity is poorly reported in the literature [11,16,17]. We reported the presence of hemangiomas in 46.6% at birth; This corroborates data from the literature which shows that lesions may be present at birth or may appear in the days or weeks following birth [17,18]. We have noted a ubiquitous



**Figure 1:** (a) Ulcerated hemangioma of the outer face of the left knee. (b) Ulcerated hemangioma of the outer face of the left knee.



**Figure 2:** Hemangioma disfiguring the right hemiface.

**Table I:** Distribution of patients by topography

Topography	Patients	Percentage (%)
Forehead	6	40
Cheeks	5	33,33
Knees	1	6,66
Legs	3	20
Total	15	100,0



**Figure 3:** Impetiginated hemangioma of the left thoracic limb.



**Figure 4:** Ulcerated hemangioma after treatment with retractile scar.

distribution of lesions, as reported by some authors with, however, as in our series a cephalic predominance [12,18,19]. From the therapeutic point of view, since the observation of their effectiveness, betablockers are the subject of several studies [20-23]. In our study we noted a remarkable efficacy of Propranolol in 93.3% after 24 months of treatment. Despite the low dose we used (1m / kg / d), our results are similar to those of some series with 84% efficacy [17], at a dose of 3 mg / kg / day on also a period of 24 months; and even higher than those of a study reporting 46% efficacy using a dose of 2 mg / kg / day [24]. Tolerance was good in all cases, but some authors have reported side effects such as hypoglycaemia, diarrhea, vomiting, insomnia, low blood pressure, cold extremities [12,25]. Our percentages of healing (93.3%) are comparable to those of some literatures who obtained 88.2% [21]. In our study we noted complications in 40% of cases, type of infection and aesthetic damage. The aesthetic damage was observed in 83.3%, and was significantly higher

than that reported by Yacouba K. with 63.6% [26]. There is no standard rating of these harms, however, it is reported in the literature that severe forms account for less than 5% [17,18].

## CONCLUSION

In this study cutaneous angioma represents 2% of dermatological consultations. The predominance of female cases may be related to aesthetic reasons. The efficacy and tolerability of Propranolol treatment was significant and favorable. A prospective study on a more significant number of cases, will confirm the choice of betablockers in the management of hemangiomas.

## Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

## Statement of Informed Consent

Informed consent was obtained from all parent patients for being included in the study.

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