

## Epidemiological Profile of Premature Newborns Monitored at the Kangaroo Unit at Sikasso Hospital

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### Abstract

### Original Research Article

The **objective** of this study was to determine the epidemiological profile of preterm infants followed at the Kangaroo Unit. **Patients and Methods:** This was a descriptive cross-sectional study carried out in the Pediatrics Department of Sikasso hospital (Mali), a second-reference hospital from 1 January 2019 to 31 December 2019 on a comprehensive sample of all preterm infants followed at the unit during the study period. **Results:** We collected 94 files out of 194, a frequency of 48.4%. The average age of mothers was 28.5 years and 92, 5% were married, the out-of-school represented 51%. Housewives were the majority with 78.8% and living in urban communities in 70.2%. Primigest accounted for 37.2% of cases; 62.7% of women had completed at least four antenatal consultations. Malaria was found in 38.2% of pathologies during pregnancy. In 73.4% of the cases the newborns were born from a vaginal birth and 54.2% from birth in the born. The sex ratio is 1.5 and average gestational age is 31 SA. The average weight was 1325g. 40% of newborns were successfully followed up to 12 months of corrected age, sight loss was 21.2% and 40.4% were outstanding follow-up, we recorded 7 deaths or 7.4%. From 3 months to 12 months of corrected age all infants had an average weight located within WHO standard standards. **Conclusion:** The management of premature babies remains a major challenge for the pediatric services of our hospitals.

**Key words:** Prematurity, Low birth weight, Mother Kangaroo Care.

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## INTRODUCTION

Low birth weight refers to any newborn with a weight of less than 2500g whether premature or term [1]. Prematurity is defined by a birth before 37SA of bygone gestational age (259 days) counted from the first day of the date of the last menstruation [2]. Premature babies are a very fragile child population because of the immaturity of their vital functions. The prognosis is correlated with the perinatal and post-natal medical care, as well as the quality of the reception at birth [3]. According to WHO every year, some 15 million newborns are born prematurely, which is still a high figure. Responsible for nearly one million deaths/year in 2015 [2]. Complications of preterm birth are the leading cause of death in children under 5 years of age [4], 3/4 of deaths could be prevented through

routine interventions that are effective, inexpensive and without the use of intensive care [4]. Colombian pediatricians have shown, for more than 40 years that it is possible to take care of these newborns outside the usual structures, by involving the mother and have thus developed the kangaroo mother method. It consists of carrying the baby of low birth weight on the breast of his mother in skin-to-skin contact 24 hours a day [5]. This method was introduced in Mali in 2007 more precisely at the Chu Gabriel Touré with the aim of reducing the neonatal mortality rate. Then in 2014 in Sikasso, due to the high birth rate of premature babies and PPN, as well as the high number of deaths. The objective of the work was to describe the epidemiological profile of preterm infants admitted to the kangaroo unit of sikasso hospital.

## PATIENTS AND METHODS

This was a descriptive cross-sectional study carried out in the Pediatrics Department of the Sikasso Hospital (Mali), a 2nd reference hospital between 1 January 2019 and 31 December 2019 on an exhaustive sample of all preterm infants followed in the kangaroo unit during the study period. The inclusion was based on the parents' adherence to the program, did not include premature babies who died in the neonatology unit before their transfer to the kangaroo unit and premature babies admitted to the neonatology unit but not adhering to mother/kangaroo care. We developed a survey sheet that allowed us to collect data from patient records and admission records. The variables studied were sociodemographic characteristics, maternal obstetric history, anthropometric parameters, clinical characteristics and newborn fate. Data were entered and analyzed on SPSS version 19. The confidentiality of the data has been respected.

## RESULTS

### 1-Frequency

During the study period 194 preterm infants hospitalized, we collected 94 files or 48.4%.

### 2-Socio-demographic characteristics of mothers

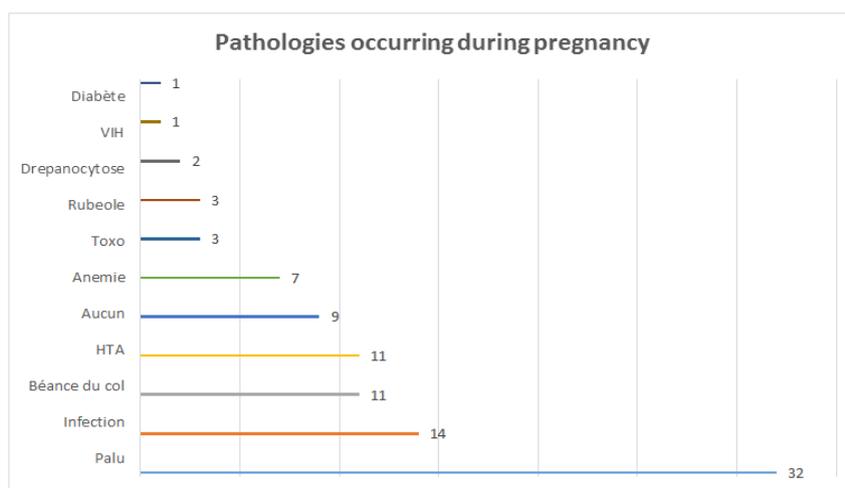
The general characteristics of mothers are detailed in Table 1. The frequency of preterm births was more in the majority in the 20-39 age group, i.e. 76.6 per cent, the average age of mothers was 28.5 years and 92.5 per cent of mothers were married, while 51 per cent were not in school. Housewives were in the majority with 78.8% and lived in urban communes in 70.2%.

**Table-1: Socio-demographic characteristics of mothers**

	Effectif	Pourcentage
<b>Age</b>		
Moins 20ans	15	16%
20-39ans	72	76,6%
40 et Plus	7	7,4%
<b>Statut matrimonial</b>		
Mariée	87	92,5%
Célibataire	7	7,5%
<b>Résidence</b>		
Zone urbaine	66	70,2%
Zone rurale	28	29,8%
<b>Scolarisation</b>		
Non scolarisé	48	51%
Scolarisé	46	49%
<b>Emplois</b>		
Femme au foyer	74	78,8%
Salarié	20	21,2%
<b>Gestité</b>		
Primigestes	35	37,2%
Paucigestes	19	20,2%
Multigestes	14	14,9%
Grande multigestes	26	27,7%

### 3-Obstetric characteristics of mothers

Primigestes were in the majority with 37.2% and 62.7% of women had carried out at least four prenatal consultations. Pathologies occurring during pregnancy are detailed in Figure 1. Malaria was in the majority, 38.2%, followed by infection 14.9% and vasculo-renal syndromes 12.8%. In 73.4% of cases the newborns were born of vaginal delivery and 54.2% of births were born in born. 27.6% of pregnancy were twin.



**Fig-1: Pathologies occurring during pregnancy**

4-Anthropometric characteristics of newborns the sex ratio is 1.5 in favour of the female sex. The less than 32 SA were 38.2% with a mean gestational age of 31 SA. The average weight was 1325g with extremes ranging from 650g to 2000g. From 3 months to 12

months of corrected age all infants had an average weight within who standard standards; all infants had a size, head circumference, brachial perimeter normal to their age.

## 5-Becoming newborns

Newborns were followed successfully up to 12 months of corrected age in 40% of cases, the loss of sight was 21.2% and 31.4% were under follow-up, we recorded 7 deaths or 7.4%. The majority of newborns who dropped out, 60% were between 6 months and 9 months old. Death occurred in 71.5% of cases between exit and 40SA. The majority of the deceased newborns had mothers between 20-39 years of age, not in school, gestational age between 28-31SA and weight between 1000-1500g.

## DISCUSSION

### 1-The limitations of the methodology

Given the retrospective nature of our study, it had some limitations, namely the absence of certain data in the files, the imprecision of certain anthropometric parameters.

### 2-Description of the sample

During the study period from 1 January 2019 to 31 December 2019, 194 premature babies were hospitalized in the neonatology department of the Sikasso hospital, of which 94 were admitted to the kangaroo unit, a frequency of 48.4%. Among the 94 newborns admitted we recorded (37) newborns followed up to 12 months, lost from sight (20) or 40% and 21.2% respectively. This rate is higher than that of Sidibé M [7] which had found 11.1% complete follow-up in Mali.

### 3-Sociodemographic characteristics of mothers

It is conventionally reported that primiparity, age of mothers, lack of employment and low level of education increase the birth of premature babies or PPN [6]. In our study we find that the frequency of PPN was high in the age group of 20-39 years or 76.6%. Our results range from those of Samuel B *et al.* [6] with 65.9% and those of Guillemet *et al.* [8] who found 91.9% for the same bracket. The average age of mothers was 28.5 years in our series; in the study by Charpak N and Coll. [9] and Kabore *et al.* [10] the average age of mothers was 27.3 years respectively; 29.7 years. Ninety-two decimal five (92.5%) of mothers were married, the result found by Charpak *et al.* [9] had found that 62.3% of mothers were in a couple, on the other hand the authors of studies done in Burkina Faso and Nigeria had shown that single women were more likely to be premature [11, 12]. Out-of-school mothers were in the majority with 51%. Our results are superior to those made in Togo by Balaka *et al.* [13]. Housewives accounted for 78.8% of our study, on the other hand in Yaoundé Miaffo *et Al.* [14] in 2008 observe that premature babies are found both in women with gainful activity and those with no job, with a non-significant difference.

## 4-Obstetrical characteristics of mothers

The study highlights a percentage of Primigestes at 37.2% and large multigestes at 27.7%, Kramer's study [15] showed a high percentage of PPN in primigestes or 37.0%. The majority of women had done less than 4 CPN or 62.7%, Nicole's results [16], show that 80% of mothers of premature babies had not done any follow-up. Malaria was the most common pathology during pregnancy in our study at 38.2%, the study by Ndiaye *et al.* [17] found malaria as the only maternal pathological factor.

## 5-Characteristics of newborns admitted to kangaroo mother care

Fifty-four decimal two (54.2%) of inborn birth, our results are the same as those of Sylla *et al.* [18]. Vaginal delivery represented 72.2%, our results are close to that of Kabore *et al.* [10] with 88.1% and Nathalie Charpak *et al.* [9] had found on the contrary 68% of babies who were born by caesarean section. The sex ratio was 1.5 in favor of the female sex; studies differ on this subject if for some authors there is a female predominance [19, 20] others report rather a male predominance [21, 22]. In our study the average gestational age of premature infants was 31SA (high prematurity), we found a high percentage of preterm infants born between 32-36SA (mean prematurity), on the other hand in the studies of Diagne [23] and Rabesandratana *et al.* [24] the large preterm birth (28-32SA) was majority with 56.1% and 32% respectively. The average weight was 1325g and 46.7%, this finding is similar to that of Ugochukwu *et al.* [25].

## 6-Becoming babies admitted to kangaroo mother care

Forty percent (40%) of newborns were successfully followed up to 12 months of corrected age, those lost from sight were 21.2% and 40.4% were under follow-up, we recorded 7 deaths or 7.4%. Death occurred in 71.5%, cases of exit at 40SA comparable to the results of Sylla *et al.* [18] which reported more deaths between exit and 40SA. The frequency of deaths of newborns was high among mothers between the ages of 20 and 39, as well as among those who were not in school, at 5.6% and 6.7% respectively. It is also high in newborns of gestational age between 28-31SA (high prematurity), birth weight between 1000-1500g and those of the female sex. This is the case with Sylla *et al.* [18] in Mali had found that male sex, birth weight less than 1000g and gestational age less than 29SA influenced the chances of survival of premature babies.

## 7-Infant growth (3 months, 6 months, 9 months, 12 months)

From 3 months, 6 months, 9 months to 12 months of corrected age the infants had an average weight in the standard standards of the WHO which can be explained by the fact that the mothers are more attentive in terms of their diet. These results are comparable to those of Sylla *et al.* [18].

## CONCLUSION

The management of premature babies remains a major challenge for the pediatric services of our hospitals; it emerges from this study that Kangaroo Mother Care is a good survival initiative for premature babies. These results show us that progress must be made both in terms of prevention through proper and adequate monitoring of pregnancy and in terms of the care of newborns at risk.

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