

## Research Article

# Result of Twin Pregnancies at the Maternity of Ignace Deen National Hospital in Guinea

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## Abstract

**Introduction:** Twin childbirth is a high-risk childbirth especially for the 2<sup>nd</sup> Twin, whose perinatal mortality was increased by (102.8%). The aim of this study was to describe the outcome of twin pregnancies in an African setting at the maternity ward of the Ignace Deen National Hospital.

**Methodology:** This was a prospective study of a descriptive and analytical type lasting twelve (12) months from January 1 to December 31, 2020 carried out at the obstetric gynecology department of the Ignace Deen National Hospital.

**Results:** The frequency of twin pregnancies (GG) was 4.62% of deliveries. Pregnant women aged 25 to 29 were in the majority (81.74%). The socio-demographic profile of the woman who gave birth to twins was that of a housewife (32.8%), unschooled (42.4%), married (96%) and pauciparous (35.6%). The delivery was at term in 51.38% of cases and the anatomical type most frequently encountered was dizygous (90.51%) and premature in 48.62%. The early neonatal prognosis was good in 59.09% of cases for D1 and 66.4% for D2. We noted respiratory distress in 24.51% of cases for D1 and 37.55% for D2 and perinatal mortality of 79.1% for D1 and 102.8% for D2. The factors of the poor neonatal prognosis were prematurity, low birth weight and vaginal delivery for the 2<sup>nd</sup> twin. The immediate maternal prognosis was good in 227 patients and marked by postpartum hemorrhage in 26 patients, including three (3) maternal deaths.

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**Conclusion:** The improvement of the neonatal prognosis in the event of twin pregnancy would require an early ultrasound between 12 - 15 weeks old, systematic corticosteroid therapy in the event of a threat of premature birth (PAD) before 34 weeks old and the performance of an ultrasound in the ward.

**Keywords:** Maternal and fetal prognosis; Prenatal monitoring; Twin pregnancy

## Introduction

Twin pregnancy is considered a high risk pregnancy, because of perinatal mortality, the frequency of fetal morbidity it causes but also because of the complications it poses to the mother during pregnancy such as toxemia, pregnancy, bleeding from delivery [1]. This excess of perinatal morbidity and mortality is essentially related to prematurity, the incidence of which is multiplied by 6 and Intrauterine Growth Retardation (IUGR), the incidence of which is multiplied by 3 [2]. Prematurity is the pathology that comes at the top of the obstetric complications in twin pregnancy, however fetal complications such as bradycardia, Placental abruption or cord prolapse may occur after the birth of the first twin exposing the second to increased morbidity and mortality [3,4]. For some authors, these risks are especially present when delivery takes place vaginally and this depending on several parameters: presentation, mode of delivery, term, fetal weight, the difference in weight between the first and second twin [5]. The prevalence of twin pregnancy varies from region to region, country to country. Thus, the twinning rate varies between 2 and 20% in the world with the lowest in Asia [1]. The frequency of twin pregnancies has increased considerably in recent years since the advent of Assisted Reproduction (ART) techniques in developed countries. This increase is felt slightly today in Africa south of the Sahara, certainly because of an improvement in health coverage in certain areas [5]. In France, as in other so-called developed countries such as the United States and the United Kingdom, the number of twin deliveries increased by around 62% between 1970 and 1998 due to an increase in maternal age and increasing use of medically assisted procreation techniques, so that in France twins represented 3.5% of births during the last national perinatal survey [4,6]. The study of twin pregnancy in an African environment is of particular interest not only because of its greater frequency in black communities, but also the difficulties encountered in its diagnosis and monitoring of pregnant women [1]. In Africa, the frequency of twin births is 928 out of 80,000 births, or 1.16%. And it is higher in black Africa where it is 4 to 5 times more frequent in Nigeria, Seychelles, South Africa and Zimbabwe [1]. In Guinea, a study carried out in 2009 by Baldé IS et al., reported 3.53% twin pregnancies [7]. The aim of this work was to describe the outcome of twin pregnancies in an African environment at the maternity ward of the Ignace Deen National Hospital. Our specific objectives were to: Describe the socio-demographic characteristics of mothers who have given birth to twins, describe the peculiarities of twin births and identify the factors of poor neonatal prognosis. And it is higher in black Africa where it is 4 to 5 times more frequent in Nigeria, Seychelles, South Africa and Zimbabwe [1]. In Guinea, a study carried

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## Methodology

This was a prospective, descriptive and analytical cross-sectional study carried out at the maternity ward of the Ignace Deen National Hospital, lasting 12 months (January 1 to December 31, 2020) on a continuous series of 253 twin deliveries. The variables studied were: the socio-demographic characteristics of pregnant and parturient women (age, profession, level of education, marital status and parity), Prenatal Monitoring Methods (ANC), mode of delivery, subsequent complications, maternal prognosis and neonatal. During the study period, the minimum cost of an antenatal consultation was 1000 FG (US \$ 1) that of an obstetric ultrasound of 100,000 FG (10 US dollars), the guaranteed minimum interprofessional wage of 400,000 FG or 40 US dollars. Were included in the study all pregnant and parturients who have given birth to twins or who are received in the immediate aftermath of a twin birth performed in another health facility or at home with a term pregnancy greater than or equal to 6 months (28 weeks). Not included in the study, all parturients having given birth to triplets. Data were analyzed on SPSS software. The tables and the word processing were carried out on Excel and Word 2010 software. Depending on the case, the chi-square test or exact FISHER were used for the comparison of the qualitative variables. The tests of STUDENT, Wil COXON were used for the comparison of the means or the medians after checking the conditions of application. The significance level was set at  $P = 5\%$ . The population concerned was mainly hospitable. This work therefore did not reflect the reality of twin deliveries throughout Guinea. However, for a better understanding of our results, we had to compare them with the data in the literature.

## Results

### Frequency

Of the 5,478 deliveries performed in the ward during the study period, 253 were twins, i.e., a frequency of 4.62% of deliveries.

### Sociodemographic characteristics of parturients (Table 1)

Sociodemographic Information	Workforce (N = 253)	Percentage
<b>Age</b>		
<20	23	9.1
20 to 24	67	26.5
25 to 29	84	33.2
30 to 34	56	22.1
> 34	23	9.1
<b>Extreme: 17 and 36 years old</b>		<b>Average: 26.63 ± 5.3</b>
<b>Profession</b>		
Student	43	17
Housewife	83	32.8
Official	33	13
Liberal	94	37.2
<b>Level of Education</b>		
No schooling	125	49.4
Primary	42	16.6
Secondary	38	15
University	48	19
<b>Marital Status</b>		
Single	9	3.6
Divorcee	1	0.4
Married	243	96
<b>Home</b>		
Dixinn	12	4.7
Outside Conakry	38	15
Kaloum	22	8.7
Matam	22	8.7
Matoto	65	25.7
Ratoma	94	37.2
<b>Mode of Admission</b>		
Coming of herself	165	65.2
Evacuated	88	34.8
<b>Parity</b>		
Nulliparous	72	28.5
Primiparous	50	19.8
Pauciparous	90	35.6
Multiparous	30	11.9
Large Multiparous	11	4.3
<b>Multiple Pregnancy DCD</b>		
No	168	66.4
Yes	85	33.6

**Table 1:** Sociodemographic characteristics of women giving birth.

### Prenatal follow-up (Table 2)

CPN location	Workforce	Percentage
Health center	87	34.4
Private clinic	71	28.1
CMC	80	31.62

CHU	12	4.74
Prefectural hospital	2	0.8
Regional hospital	1	0.4
<b>Number of CPNs</b>		
0-1	16	6.32
2 to 3	110	43.48
≥4	127	50.20
<b>Extremes: 0 and 8</b>		<b>Average: 3.3 ± 1.1</b>
<b>Diagnosis of Twin Pregnancy</b>		
1 <sup>st</sup> trimester	83	32.8
2 <sup>nd</sup> quarter	117	46.2
3 <sup>rd</sup> quarter	41	16.2
During work	12	4.7
<b>Obstetric Ultrasound</b>		
No	8	3.2
Yes	245	76.8
<b>Number of Ultrasounds</b>		
1	57	23.27
2	103	42.04
3	73	29.80
≥4	12	4.90
<b>Complications of Pregnancy</b>		
No	202	79.9
Yes	51	20.1
<b>Complications that Occurred During Pregnancy</b>		
No	200	79.5
Yes	53	20.95
Anemia	15	5.93
HTA	23	9.09
Hydramnios	2	1.19
MAP	10	3.95
Other	2	0.79
<b>Circumstances of Onset of Pregnancy</b>		
After infertility treatment	32	12.65
Spontaneous	221	87.35

**Table 2:** Breakdown according to the course of the pregnancy.

## Delivery Method of delivery

It was done vaginally in 45.8% (N = 116) and by caesarean section in 54.2% (N = 137). The indications for cesarean section were more frequently linked to obstructed presentations of D1 (43.80%), retention of D2 (13.87%), acute fetal distress (12.41%), severe pre-eclampsia (10.95%) and the scarred uterus (10.80%). Term: the delivery was premature (term <37 WA) in 123 cases or 48.62% and at term in 130 cases (51.38%). Presentation of twins: cephalic presentation was the most frequent for the two (2) twins (57.70% for D1 and 65.61% for D2). There were as many breech presentations in the first twin (J1) and the second twin (J2), i.e., 25.69% versus 31.22%. On the other hand, there were more transverse positions in the first twin (16.6% versus 3.16%) (Table 3).

## Outcome of vaginal birth

Vaginal delivery was complicated in 41 patients. These complications are distributed as follows: 19 cases of retention of the second

Vaginal Birth	Workforce	Percentage
Obstructed	6	5.2
Eutocic	110	94.8
<b>Obstructed Labor</b>		
Enclosure of the head	1	16.7
Onset obstructed labor	1	16.7
Dynamic obstructed labor	4	66.6
<b>Obstetric Maneuvers on D2</b>		
No	224	88.5
Yes	29	11.5

**Table 3:** Modalities of vaginal birth.

twin in parturients all evacuated for the same reason (7.50%), 16 cases of hemorrhage during delivery (6.32%) and 10 cases of perineal tear (2.37%). Anatomical type: twin pregnancy was more frequently dizygotic, i.e., 90.51% (N = 229) against 7.91% of monozygous pregnancy (N = 20). The dizygotic pregnancy was more frequently bi-amniotic bichorium (56.52%) compared to 33.99% of bi-amniotic monochorial pregnancy. V. Prognosis Maternal prognosis: we recorded 3 cases of maternal death, i.e., a case fatality of 1.2%: two (2) deaths were consecutive to postpartum hemorrhage and the third linked to an eclamptic coma. Neonatal prognosis: the newborns were alive and well in 66.40% for D1 versus 51.78% for D2. They were born with acute fetal distress in 24.50% of cases for D1 versus 37.55%. We recorded a rate of 91‰ overall perinatal mortality, of which 79‰ for D1 and 102.7‰ for J2. We recorded a prematurity rate of 48.62%. The low birth weight (weight <2500 g) was observed in 57.31% of cases for D1 and 64.2% of cases for D2. The good Apgar score (≥7) was obtained in a proportion of 71.15% at the first minute and 92.09% at the fifth minute for J1 versus 58.89% and 86.96% for J2. Bivariate analysis of fetal status versus Apgar score reveals that:

- A good Apgar score was observed in a proportion of 30% if the pregnancy is monoamniotic monochorion, 76.74% if the pregnancy is bi-amniotic monochorion and 67.13% if the pregnancy is bi-amniotic bichorium for J1 versus 20%, 56, 98% and 55.24% for J2. The differences observed were statistically significant (p-value = 0.001 for D1 and 0.05 for D2)
- For the mode of delivery, the 1<sup>st</sup> twin had a good Apgar score in a proportion of 70.54% if the delivery is by vaginal route and 65.19% if the delivery is by cesarean section versus 53, 51% and 51.47% for J2; difference not statistically significant (p-value = 0.47 for D1 and 0.74 for D2)

For the presentation of twins, the 1st twin had a good Apgar score in a proportion of 60.27% in the event of a cephalic presentation; 64.62% in case of breech presentation and 95.24% in case of transverse position versus 53.01%; 53.43% and 25% for J2. Statistically significant difference for D1 (p-value <0.0001) and not significant for D2 (p-value = 0.28). Relative to birth weight, low birth weight is a factor of poor neonatal prognosis. Indeed the good score of Apgar (≥ 7/10) was observed in a proportion of 62.68% in case of low birth weight versus 74.24% in case of birth weight ≥ 2500g for D1 versus 46.25% and 63.33% for D2. Difference not statistically significant (p-value = 0.054 for D1 and 0.009 for D2).

## Discussion

### Frequency

The frequency of twin pregnancies in our study is close to those reported by certain authors in the West African region, in particular: Baldé et al., [7] in the same department in 2009 (3.53%), Moreira et al., [8] in Senegal (2.9%) and Kouamé et al., [9] in Ivory Coast (4.49%). On the other hand, our frequency is higher than those reported by certain authors, in particular: Zédini et al., [10] in Tunisia (1.76%) and Annel et al., [11] in France (1.5%). An underestimation is undoubtedly possible in our study because of possible twin abortions that went unnoticed.

### Sociodemographic characteristics

With respect to age, our pregnant women are relatively younger than that of the Epelboins series in Europe [12]. Compared to the socio-demographic realities of Europe, we have noticed a clear difference: in almost all cases, these were natural twin pregnancies in our study (only 1 case of twin pregnancy by IVF recorded) while in Europe, twin pregnancy was often the result of medical techniques for procreation (artificial insemination, *in vitro* fertilization or IVF and Intracytoplasmic Sperm Injection (ICSI) in women aged 35-39 years with a peak of 37 years for dizygotic pregnancies [12]. The relatively young age of the pregnant women in our series had already been reported in Senegal [8]. In relation to the profession, the majority of women were housewives, i.e., 32.8%. Our pregnant women belonged to an underprivileged socio-professional category and fertilization there was exclusively natural. Unlike mothers in Europe who benefit from ART techniques partially reimbursed by social security. These techniques increase the probability of obtaining multiple pregnancies, especially twins [12]. Our result is similar to that of Traoré [1] in Mali, who reported in his series that more than half of the women (73.5%) were housewives without a remunerative profession. Regarding parity, the average parity before the current childbirth was 1.84 with extremes of 0 and 8. However, pauciparas were the most represented (35.6%) followed by nulliparas with 28.5%. This result joins that of Moreira [8] in Senegal reporting a predominance of pauciparas in his series with 26.6%; observation contrary to that of Vaast et al., [13] who estimate that twins, especially dizygote, increase with parity. Observation also contrary to that of Tioukani et al., [5] in Mali reporting in its series a predominance of multiparas (55.61%). The history of multiple pregnancy was found in 85 of our patients, i.e., 33.6% (76 twin pregnancies, 7 triple pregnancies and 2 quadruple pregnancies). Result contrary to that of Moreira in Senegal [8] reporting a rate of 4%.

### Procedure twin pregnancy

The high rate of prenatal consultation at health centers (34.4%) and communal medical centers (31.62%) could be explained by the fact that these basic health structures are closer to the populations. Regarding the number of prenatal consultations, the prenatal follow-up was not rigorous in our series: indeed, the correct number of prenatal visits required in Guinea (4 ANC) in the context of the refocused ANC in accordance with the recommendations of the WHO [14] was observed in only 50.2% of pregnant women; this number of ANC was recently revised upwards to 8 antenatal contacts per pregnancy. Observation of the ANC notebooks of pregnant women shows that they are poorly kept because certain parameters to note are not sought by health workers. Thus, better than the number of CPN it is the quality

of the latter which is more important. The diagnosis of twinning in our series was most often made in the 2<sup>nd</sup> trimester of pregnancy (46.2%) followed by the 1<sup>st</sup> trimester of pregnancy with 32.8%. Finding contrary to that reported by Baldé et al., [7] in the same department 12 years ago where the diagnosis of twinning was made in most cases in the labor room (61.74%). This difference could be explained by the improvement in the quality of prenatal follow-up, especially the accessibility of women to obstetric ultrasound. Despite all this, our result is contrary to the observation of Pons et al., [15] in France reporting that the diagnosis of twin pregnancy was made in the first trimester (before 15 WA) in 82.4% of cases. The authors agree in emphasizing the importance of the early diagnosis, for the fetal prognosis of twin pregnancy [13,15,16], which makes it possible to set up a monitoring protocol very early on aimed at reducing the rate, prematurity and fetal hypotrophy. Obstetric ultrasound was performed in 96.8% of patients, in most cases only once and in the 2<sup>nd</sup> trimester of pregnancy. Unfortunately in our developing countries, performing early ultrasound is very difficult due to insufficient equipment and the average cost of obstetric ultrasound which is around 100,000 GNF (or US \$ 10), while 50 % of Guineans live below the minimum poverty line with a national income / inhabitant of less than US \$ 1 / day [17]. This is responsible for the high rate of unrecognized twin pregnancy in our series. Twinning was more frequently spontaneous in our series with 86.6% versus 13.4% of pregnancies occurring after infertility treatment. Our observation is similar to those of several African series [5,7,8]; on the other hand, it is contrary to those of the European series where twin pregnancy was often consecutive to ART techniques [12].

### Childbirth

Childbirth most frequently took place by cesarean section, i.e., 54.2% against 45.8% vaginal delivery; higher rate than that reported by Baldé [7] in the same department 12 years ago (46.96%). Cesarean section for retention of the 2<sup>nd</sup> twin was performed in parturients all evacuated for the same reason, a rate linked on the one hand to the ignorance of twinning and on the other hand to the poor diagnosis of the presentation and the lack of monitoring of the patient delivered after the childbirth of D1. There are controversies over the best way to deliver a twin pregnancy Childbirth most frequently took place by cesarean section, i.e., 54.2% against 45.8% vaginal delivery; higher rate than that reported by Baldé [7] in the same department 12 years ago (46.96%). Cesarean section for retention of the 2<sup>nd</sup> twin was performed in parturients all evacuated for the same reason, a rate linked on the one hand to the ignorance of twinning and on the other hand to the poor diagnosis of the presentation and the lack of monitoring of the patient delivered after the childbirth of D1. There are controversies over the best way to deliver a twin pregnancy Childbirth most frequently took place by cesarean section, i.e., 54.2% against 45.8% vaginal delivery; higher rate than that reported by Baldé [7] in the same department 12 years ago (46.96%). Cesarean section for retention of the 2<sup>nd</sup> twin was performed in parturients all evacuated for the same reason, a rate linked on the one hand to the ignorance of twinning and on the other hand to the poor diagnosis of the presentation and the lack of monitoring of the patient delivered after the childbirth of D1. There are controversies over the best way to deliver a twin pregnancy Cesarean



section for retention of the 2<sup>nd</sup> twin was performed in parturients all evacuated for the same reason, a rate linked on the one hand to the ignorance of twinning and on the other hand to the poor diagnosis of the presentation and the lack of monitoring of the patient delivered after the childbirth of D1. There are controversies over the best way to deliver a twin pregnancy [16,18]. Our high rate of caesarean section could be explained by the fact that our center is the only functional center of last resort receiving obstetric evacuations from peripheral maternity hospitals in the city of Conakry and neighboring prefectures. Our cesarean rate is close to that of Zédini C [10] in Tunisia. However, the high frequency of the cesarean section in the event of twin births and especially the decision of prophylactic interventions gives rise to reflection and calls on birth attendants to work for an improvement in the quality of care. In our context, the popularization of ultrasound in the delivery room could be of considerable help in the diagnosis of presentations.

## Prognosis

### Maternal prognosis

Our delivery hemorrhage rate is lower than that of Moreira P [8] in Senegal (7.26%) and significantly lower than that reported by Baldé IS [7] in the same department in 2009 (12.17%). This difference could be explained by the systematic introduction in the service in recent years of AMTSL (active management of the third period of childbirth) consisting of a controlled delivery. We recorded 3 maternal deaths, i.e., a case fatality of 1.2%: 2 deaths were consecutive to postpartum hemorrhage and the third linked to an eclamptic coma. Data from the literature [19,20] are inanimate that maternal mortality after twin childbirth is mainly due to the increased risk of pregnancy-induced hypertension (5 to 10% of single pregnancies compared to 10 to 20% of multiple pregnancies) and increased bleeding of the breast. Postpartum due to uterine overdistension which can cause either uterine rupture or atony.

### Neonatal prognosis

Our perinatal mortality rate is higher than that of Meye [21] in Gabon (40‰), but lower than that of Moreira [8] in Senegal (157%). The classic excess mortality of D2 is also a constant in our series (102.7‰) for J2 against (79‰) for J1 and results from complications such as hypoxia, separation of the placenta and fetal retention due to uterine retraction to which they are often exposed after giving birth to the first twin. Prematurity is also a factor of poor prognosis for newborns. Our prematurity rate (48.62%) is higher than that of Moreira [8] in Senegal (23%), and that of Rachidi et al., [22] in Tunisia (28.10%); on the other hand, this rate is close to Pons et al., [15] in France (45.96%), despite the establishment of a policy to prevent prematurity in France during twin pregnancy. As for Andriamamy [23] in Madagascar, his rate is very clearly above ours with 85% premature. Our prematurity rate could be explained by the inaccessibility of diagnostic means for twinning and the low socioeconomic level of the patients. In addition, the lack of equipment for the rearing of premature babies in the department makes their prognosis very reserved.

## Conclusion

Twin pregnancy is a high risk pregnancy involving both maternal and fetal prognosis. We are of the opinion that the delivery of the second twin must be active in order to reduce the delay or interval of birth between the two twins to improve the prognosis of the latter. Apart from the delay in birth between the two twins, all the other factors seem to us to be cofactors acting through the delay in birth.

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