

Maternal-Fetal Prognosis of the Prophylactic Cesaarian versus Emergency Cesaarian at the Reference Health Center of Commune V of Bamako District, Mali

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Abstract

Objectives: The goal was to assess the risk factors for emergency cesarean section versus prophylactic cesarean section. **Materials and Methods:** This was a descriptive analytical cross-sectional study of the Type Cas/Witnesses at the Reference Health Centre of Commune V of the District of Bamako in Mali. The sample consisted of 100 cases for 200 controls (1 case for 2 controls) with retrospective collection of data for the period from January 1 to July 11, 2011 (6 months and 11 days). **Results:** During the study period, out of a total of 3559 deliveries, we recorded 2,794 vaginal deliveries, 78.50% and 765 caesarean sections or 21.50%. Of the 765ceras, we performed 353 emergency caesarean sections or 46.15% and 412 prophylactic caesarean sections 53.85%. We have selected 100 prophylactic caesarean section files and 200 emergency caesarean section files. The average age of the patients was 27.41 years-5.84 with extreme ages of 14 to 40 years. 100% of our patients (Cas) had performed at least one antenatal consultation compared to 83.5% of the parturients evacuated (Witnesses). The most frequently cited reasons for evacuation were: acute fetal suffering, non-cephalic presentation and excessive uterine height with 30%, 17.5% and 12% respectively. The bulk of the caesarean

section indications were dominated by dystocies with 90% in cases compared to 65% in Witnesses, followed by acute fetal suffering with 30% in Witnesses. We recorded 30% perinatal deaths among Witnesses compared to 1% in Cases. We recorded 16 uterine ruptures in the Witnesses among which 2 hysterectomies and 14 hystererraphia. **Conclusion:** Prophylactic caesarean section improves maternal and perinatal prognosis more than emergency caesarean section.

Keywords

Caesarean, Frequency, Evacuation, Maternal-Fetal Prognosis

1. Introduction

1.1. Background

Pregnancy and childbirth have been a fatal risk to women since the beginning of times, Rivière said in 1959 [1]. This assertion of River is still relevant.

This risk that haunts every obstetrician explains the ongoing research to achieve the best pathways for a favorable outcome of pregnancy and childbirth.

In Mali, the direct estimate of the maternal mortality rate for the period 1989-1996 was 577 maternal deaths per 100,000 live births [2]. This rate is still too high despite all the current significant efforts to reduce this rate, which has hardly changed. In 2001 this rate was estimated at 582 maternal deaths per 100,000 live births [3]. Currently, the maternal mortality rate is 368 maternal deaths per 100,000 live births (EDS5 Mali 2012). Malian society continues to pay a heavy price for poor treatment of pregnancy and childbirth. Apart from haemorrhages, which account for 25%, infections 15%, pre-eclampsia and eclampsia 13%, abortions 13%, dystocia occupies a significant place with 7% of direct obstetric causes [4]. As early as 1986, with the “Lower Risk Maternity” initiative, the World Health Organization (WHO) advocated that surveillance of childbirth and early detection of dystocies be taken as one of the most important approaches to reducing maternal mortality [5]. The proposal to use caesarean section to continuously improve the quality of obstetric care meets these priorities.

Whether programmed or done in an emergency, caesarean section is now a very practiced and well-controlled delivery technique. However, the risks and discomforts caused by this surgical procedure, so feared by pregnant women, should not be minimized. However, emergency caesarean section is more at risk because of the lack of preparation of the parturients and the surgical emergency. In recent years, caesarean section indications have evolved resulting in a steady increase in its frequency. This increase in frequency is related to the birth attendant’s concern to give birth to the newborn in the best possible condition and a healthy mother [6]. Camara K. [7] in 2010 at the same centre found 614 caesarean sections, of which 217 were emergency caesareans, or 35.35% and 397

prophylactic caesarean sections or 64.65%.

Today, parturients, who are normally required to benefit from prophylactic caesarean section, are still held in our labour rooms where they are subjected to severe labour tests by unskilled personnel, resulting in a poor fetal and neonatal maternal prognosis. With this in mind, we decided to initiate this work in order to objectively assess the extent of the problem in terms of maternal and fetal prognosis.

Is the maternal-fetal prognosis of emergency caesarean section more at risk than prophylactic caesarean section?

1.2. Objectives

The aim was to assess the risk factors for emergency cesarean section versus prophylactic caesarean section at the reference health centre in Commune V of Bamako district in Mali.

2. Materials and Methods

This was a descriptive study, Cross-sectional and analytical Cas/Witnesses (1Cas for 2 Witnesses) with age and parity matching, with a retrospective collection of data from January 1 to July 11, 2011 (*i.e.* 6 months and 11 days) in the obstetrics and gynecological department of the Commune V Reference Health Centre in Bamako District, Mali. The study population: all patients who gave birth and accepted the study with informed consent during the study period. Sampling: We conducted a non-exhaustive sampling of all caesarean section cases. Sampling technique: Cases and controls were selected by pairing case; age-to-parity matching criteria. Sample size: Our study involved 100 cases of prophylactic caesarean section and 200 Emergency Caesarean Controls (300 patients).

2.1. Inclusion Criteria

Cases: All patients who received a prophylactic caesarean section were included in our study. Witnesses: Any patient evacuated to the V-shared reference health centre who was diagnosed with a 4 cm cervical dilation and who was given an emergency caesarean section after the entrance examination concluded that they had been given a 4 cm cervical dilation.

2.2. The Non-Inclusion Criteria

Not included in our study were all caesarean patients in the ward who did not meet our inclusion criteria. Data collection and support: The following information was collected on the following documents: birth registry; C-section registry; obstetric records; Reference register/evacuations; a register of operational reports; Newborn transfer registry; perinatal death registry; maternal death registry; anaesthesia registry. The variables studied were age, occupation, marital status, medical and surgical history, concept of prenatal consultation, caesarean section indications, nature of intervention, maternal-fetal prognosis.

2.3. The Limitations of the Study

Some scheduled caesarean sections return to labour before the scheduled date and give birth vaginally or are taken by emergency caesarean section. Some emergency caesarean sections give birth in the O.R. Are the conditions of newborns influenced by these deliveries?

2.4. Data Analysis

The data was entered and analyzed on the Epi-Info version 6.04 software in accordance with the formula applicable to the case/control study. The statistical test used was the Odds ratio (OR) to study associations between variables. The probability (p) was determined with an alpha risk of 5%. An $OR < 1$ was associated with protection against the phenomenon studied; $OR \geq 2$ was more synonymous with a worsening of the phenomenon studied.

3. Results

During the study period, out of a total of 3559 deliveries, we recorded 2794 vaginal deliveries, 78.50% and 765 caesarean sections or 21.50%. Of the 765 ceras, we performed 353 emergency caesarean sections or 46.15% and 412 prophylactic caesarean sections 53.85%. We have selected 100 prophylactic caesarean section files and 200 emergency caesarean section files.

3.1. Epidemiological Aspects

The 20 - 34 age group was the most represented (73%) with an average age in both groups of 27.41 years - 5.84. **Figure 1** shows us the distribution of patients by age. Marital status: In our study, 97% of cases were married versus 89% of Witnesses. Occupation: Housewives accounted for 52% for Cases and 73% for Witnesses. Women's residence: Most of the women in our study resided in

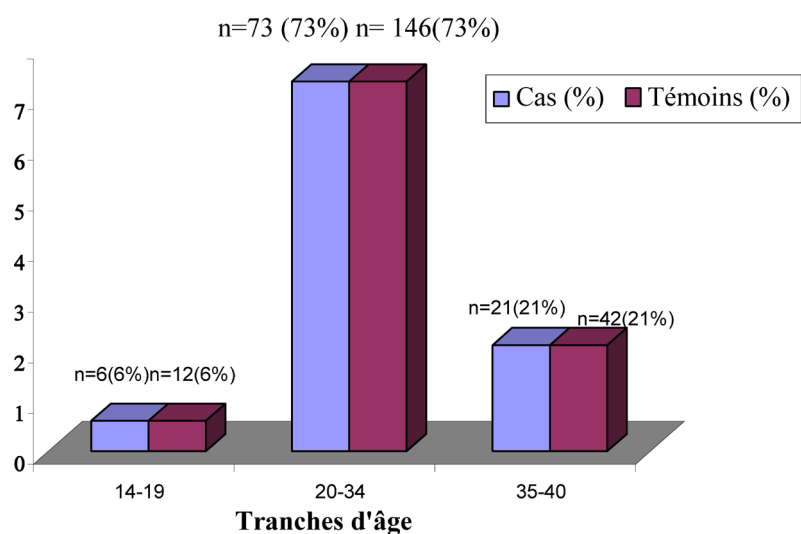


Figure 1. Distribution of caesarean patients by age at the reference health centre in commune V of Bamako district, Mali from January 1 to July 11, 2011.

commune V of Bamako district; 66% for Cases and 68.5% for Witnesses. Epidemiological aspects are summarized in **Figure 1** and **Table 1**.

3.2. Clinical Aspects

3.2.1. Medical-Surgical History and Pregnancy Monitoring

Maternal pathologies (HTA, Diabetes, Sickerocytosis) were found in 6% of cases and 4.5% of Witnesses. Surgical history: The history of caesarean section was found in 71% of cases and in 34% of Witnesses. The indications of the anterior cesarean section: Dystocia dominated with a frequency of 73.2% for cases compared to 44.2% for Witnesses. Acute fetal suffering was the second indication found with a rate of 25.4% for Cases and 52.9% for Witnesses. The inter-reproductive interval: greater than 2 years was the most represented with 83% for Cases and 86.5% for Witnesses. Prenatal consultation: 100% of cases performed at least one antenatal consultation compared to 83.5% of Witnesses. This history and pregnancy follow-up are shown in **Table 2**.

3.2.2. The Nature of the Intervention

We recorded 16 uterine ruptures in the Witnesses (evacuated parturients); of the 16 uterine ruptures 14 had hystererraphic and 2 had hysterectomy. None of her complications were found in the Cases (prophylactic caesarean section).

3.2.3. The Indications of Caesarean Section

Bone dystocia was the main maternal indication of caesarean section with 90% of our caesarean section indications in Cases versus 60% in Witnesses and acute fetal suffering was the main fetal indication of caesarean section with a frequency

Table 1. Breakdown of Caesarean patients according to epidemiological aspects at the reference health centre in commune V of Bamako district, Mali from January 1 to July 11, 2011.

	Cases		witnesses		P	OR	IC
	N	%	N	%			
Marital status							
Married	97	97	178	89	0.018	4.00	[1.15 - 21.30]
Single	3	3	22	11			
Profession							
Housewife	52	52	146	73	0.0002	0.40	[0.24 - 0.68]
Official	25	25	5	2.5	10 ⁻⁷	13.00	[4.62 - 44.68]
Student	9	9	29	14.5	0.176	0.58	[0.23 - 1.34]
Trade	8	8	15	7.5	0.928	1.018	[0.36 - 2.64]
Other	6	6	5	2.5	0.128	2.49	[0.61 - 10.56]
Residence							
Common V	66	66	137	68.5	0.662	0.89	[0.52 - 1.54]
Other municipalities	34	34	63	31.5			

of 30% in Witnesses. Scarring uteruses were found in 10% of cases and preeclampsia in 5% of Witnesses.

The nature of the procedure and the indications of caesarean sections are summarized in **Table 3**.

3.3. Maternal-Fetal and Early Neonatal Prognosis

3.3.1. Maternal Prognosis

Post-operative complications: hemorrhagic/anaemia complications were most

Table 2. Breakdown of Caesarean patients based on medical-surgical history and pregnancy monitoring at the reference health centre in commune V in Bamako district, Mali from January 1 to July 11, 2011.

Caesarean section indication Previous	Cases	Witnesses	P	OR	IC
Dystocia	52 73.2	15 44.2	0.0036	3.47	[1.35 - 8.92]
triple pregnancy	1 1.4	0 0	-	-	
acute fetal suffering	18 25.4	18 52.9	0.0053	0.30	[0.12 - 0.78]
Bleeding	0 0	1 2.9		-	
Inter-reproductive interval					
<2	17 17	27 17			
>2	83 83	173 83			
Prenatal consultation					
Yes	100 100	167 83.5	0.000016		
Not	0 0	33 16.5			
Qualification of the author of the prenatal					
Qualified staff	100 100	140 70	10 ⁻⁷		
Unqualified staff	0 0	27 13.5	0.0001	0.00	[0.00 - 0.26]
No	0 0	33 16.5		-	

Table 3. Breakdown of Caesarean patients according to the nature of the procedure and the indications of caesarean sections at the reference health centre of Commune V of Bamako district in Mali from January 1 to July 11, 2011.

	Cases	witnesses	P	OR
Nature of the intervention				
Simple Caesarean	100 100	184 92	0.0036	
Hystererraphia/Hysterectomies	0 0	16 8		
Indications of caesarean sections				
Bone dystocia	90 90	130 65	10 ⁻⁷	17.41
Acute fetal suffering	0 0	60 30	10 ⁻⁷	0.00
Preeclampsia	0 0	10 5	10 ⁻⁷	0.00
Scarred uterus	10 10	0 0		-

represented, followed by infectious complications with 15.5% and 12.5% respectively in The Controls.

We did not record maternal deaths in the two groups: Cases and Witnesses.

3.3.2. Fetal Prognosis: Mortality and Morbidity

72.5% of The Witness's newborns were in a state of severe morbidity or born deaths (Apgar score between 0 - 7) and 27.5% had a good Apgar between 8 - 10 in the first year unlike the Cases, the 100% had an Apgar between 8 - 10 and 1st mn. Neonatal death: we recorded 30% of perinatal deaths among Witnesses compared to 1% in Cases. **Table 4** summarizes the maternal-fetal and early neonatal prognosis and **Figure 2** represents post-operative maternal complications.

Table 4. Early maternal-fetal and neonatal prognosis of Caesarean patients at the reference health centre in commune V of Bamako district, Mali from January 1 to July 11, 2011.

Maternal prognosis	Cases	witnesses	P	OR	IC
Obstetric haemorrhage	0	2	10^{-7}	0.02	[0.00 - 0.14]
Hysterectomy	0	2		1	
Maternal death	0	0		0	
Apgar score					
0 - 7 (stillborn, morbidity)	0	145	10^{-7}	0.00	[0.00 - 0.02]
8 - 10 (alive, good Apgar)	100	55		51	
Early neonatal death					
Yes	1	17	0.0026	0.08	[0.00 - 0.55]
Not	99	140		89.2	

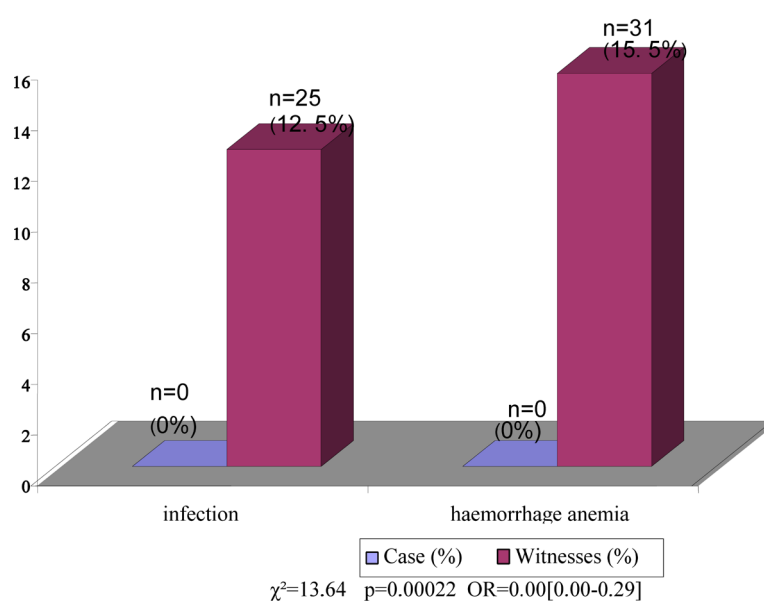


Figure 2. Distribution of caesarean patients according to post-operative maternal complications at the reference health centre in commune V of Bamako district, Mali from January 1 to July 11, 2011.

3.4. Length of Hospitalization

100% of cases had a hospital duration of three days or less compared to 46% of Witnesses. 54% of Witnesses had a hospital duration of more than 3 days. The average length of hospitalization in the cases was 2.01 days \pm 0.1 with extremes of 2 and 3 days. The average length of hospitalization for Witnesses was 4.9 days \pm 3.1 with extremes de 2 et 20 jours. **Figure 3** shows us the length of hospital stay.

4. Discussion

In the literature, Camara K. [7] in 2010 in the same centre had found 614 caesarean sections of which 217 emergency caesareans or 35.35% and 397 prophylactic caesarean sections or 64.65%. Our study reports from the study period, out of a total of 3559 deliveries, we recorded 2794 vaginal deliveries or 78.50% and 765 caesarean sections or 21.50%. Of the 765 ceras, we performed 353 emergency caesarean sections or 46.15% and 412 prophylactic caesarean sections 53.85%. We have selected 100 prophylactic caesarean section files and 200 emergency caesarean section files.

Other studies conducted by Coulibaly I. [8]; and Togora M. [9] at the reference health centre of Commune V had found 12.17% and 12.88% respectively. In 1993, A Tégueté I. [10] reported a frequency of 24.05% in a study carried out at the Gabriel Touré University Hospital from 1991 to 1993. According to Mali's National Directorate of Health in 2005 [11] nationally, caesarean deliveries occupy a rate of 0.9%.

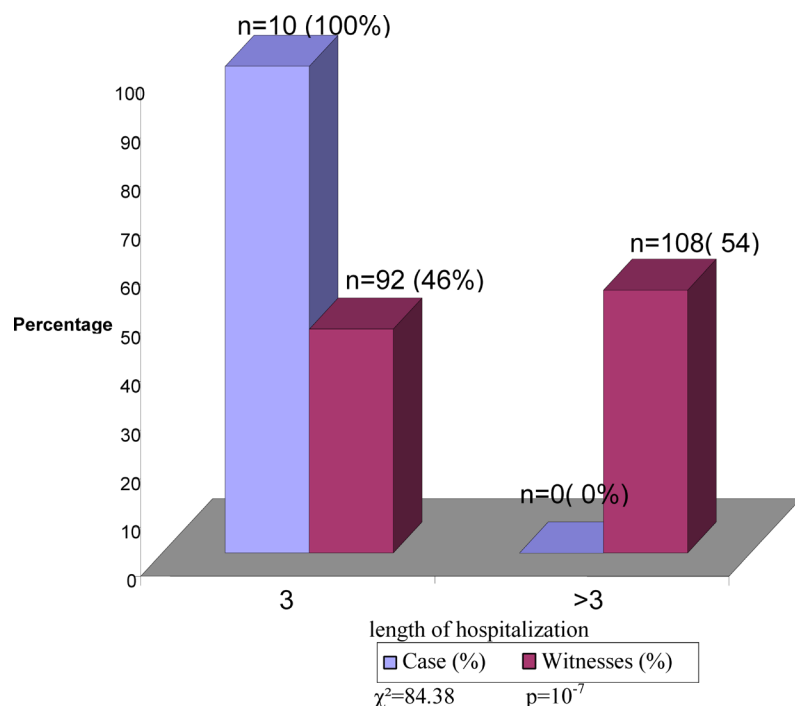


Figure 3. Breakdown by length of hospitalization of Caesarean patients at the reference health centre in the commune V of Bamako district, Mali from January 1 to July 11, 2011.

4.1. Epidemiological Aspects

The 20 - 34 age group was the most represented, with 73% with an average age of 27.41. The same trends were reported by other authors for the same age group: 71% for Sissoko H. [12]; 61.17% for Cissé B. [13] and 51% for Camara K. [7]. This is the optimal age of fertility en Afrique au sud du Sahara. Marital status: in our study, 97% of cases were married compared to 89% of Witnesses, with a statistically significant difference with [p-0.018; OR-4.00 [11,521.30]. Tegueté I. [10] and Cissé B. [13] had found 91.58% and 90.7% of brides respectively. Married women have more access to antenatal care. Occupation: The professional occupations of patients can be a barrier to access to care. For example, some professional orders are highly exposed: Housewives accounted for 52% for Cases and 73% for Witnesses with p-0.0002; GOLD—0.40 [0.24 - 0.68]. The same trends were reported by Konaté M. [14] in 2001 with 53.6% per Tegueté I. [10] in 1993 with 86.01%. Officials had more access to prophylactic caesarean section with a statistically significant difference with P-It; 10 - 7; GOLD—13 [4.62 - 44.68].

4.2. Clinical Aspects

Medical-surgical history and pregnancy monitoring

Medical history (HTA, Diabetes, Sickerocytosis): Maternal pathology was found in 6% of cases and 4.5% of Witnesses with p-0.574, OR 1.35 [0.38 - 4.40].

Medical history (HTA, Diabetes, Sickerocytosis): in our study maternal pathology was found in 6% of cases and 4.5% of Witnesses with p-0.574, OR 1.35 [0.38 - 4.40]. Surgical history: A history of caesarean section was found in 71% of cases and 34% of Witnesses with a statistically significant difference (p-10⁻⁷ OR-11.95 [6.53 - 21.98]). The indications of the anterior caesarean section: Dystocia dominated with a frequency of 73.2% for cases compared to 44.2% for Witnesses with a statistically significant difference (p-0.0036 OR 3.47 [1.35 - 8.92]). Acute fetal suffering was the second indication found with p-0.0053, OR-0.30 [0.12 - 0.78]. Inter-reproductive invalle: The inter-reproductive interval greater than 2 years was most represented with 83% for Cases and 86.5% for Witnesses, and the difference is not statistically significant (p-0.419, OR 1.31 [0.63 - 2.66]). Prenatal performance: 100% of cases performed at least one antenatal consultation compared to 83.5% of Witnesses with a statistically significant difference of 0.000016. Authors of the antenatal consultation: 100% of cases were followed by qualified staff compared to 70% for Witnesses with a statistically significant difference with p-10⁻⁷. 13.5% of Witnesses were followed by unskilled staff. Camara K. [7] had found 13% followed by unskilled staff. 16.5% of Witnesses had not performed any antenatal visits. Women's residence: Most of the women in our study resided in commune V of Bamako district; 66% for Cases and 68.5% for Witnesses. Some authors have reported the following results: Sissoko H. [12]); 71.1% for Cases and Camara K. [7] 78% for Cases 86.5% for Witnesses. But 34% of the cases and 31.5% of the Witnesses resided outside the

commune V, Sissoko H. [12] had found 17.8%. This is due to the fact that the reference health centre of commune V receives a lot of the cases of references and evacuations. There is no statistically significant difference in $p=0.662$ OR -0.89 [0.52 - 1.54].

4.3. The Nature of the Procedure and the Indications of Caesarean Sections

4.3.1. The Nature of the Intervention

We recorded 16 uterine ruptures in the Witnesses (evacuated parturients); of the 16 uterine ruptures 14 had hystererraphia and 2 had hysterectomy. None of her complications were found in the Cases (prophylactic caesarean section).

4.3.2. The Indications of Cesarean Sections

In our study several indications of caesarean section were noted, they are either maternal or fetal. Through the evolution of caesarean section indications, monitoring (during pregnancy and labour) and improved operating conditions. The rate of high-births is becoming higher. The obstetrician, in order to give birth to “a child” in the best possible conditions while guaranteeing the life of the mother, made the indications of caesarean section much wider [6]. The most frequent indications were: Bone dystocia: it was the main indication of caesarean section in our series with 90% of our caesarean section indications in Cases compared to 60% in Witnesses: the difference is statistically significant $p=10^{-7}$; OR-17.41 [5.42 - 88.44]. Various results were reported by: Togora M. [9] had recovered 50% and Tegueté I. [10] 32%. It is a nosological entity that hinders the progression of fetal mobile in the pelvic pathway. Acute fetal suffering: It was the primary fetal indication of caesarean section in our series with a frequency of 30% in Witnesses with a significant statistical difference ($p=10^{-7}$ OR-0.00 [0.00 - 0.09]). Similar studies have been carried out by other authors such as: Togora M. [9]: 41.8% of cases of acute fetal suffering. Cissé B. [13]: 18%. Tegueté I. [10] 10.4%. Our rate is justified by the delay in the evacuation of parturients and particularly the lack of qualified staff in community health centres. Any factor that may delay the evacuation of the parturients involves the maternal-fetal prognosis. Scarring uteruses were found in 10% of cases and preeclampsia in 5% of Witnesses ($p=10^{-7}$ OR-0.00 [0.00 - 0.07]). Poor monitoring of unsafe pregnancies by unqualified agents means that these women who were to benefit from normally prophylactic caesarean sections come to work.

4.4. Maternal-Fetal Prognosis

4.4.1. Fetal Mortality and Morbidity

72.5% of Witness infants were in a state of severe morbidity or born deaths (Apgar score between 0 - 7) and 27.5% had a good Apgar between 8 - 10 in the first year unlike the Cases, 100% had an Apgar between 8 - 10 in the 1st mn with $p=10^{-7}$; OR-0.00 [0.00 - 0.02]. In our study, we recorded 30% of perinatal deaths in Witnesses compared to 1% in cases with $p=10^{-7}$; GOLD -0.02 [0.00 - 0.14].

Other authors have reported the following frequencies: Tegueté I [10]. 24.6%; Traoré L [15]. 21.1%. This high rate of perinatal death among Witnesses (evacuated parturients) allows us to say that the fetal prognosis of The Witnesses is much worse compared to the Cases (prophylactic caesarean section), with $p=10^{-7}$ OR -0.02 [0.00 - 0.14].

4.4.2. Maternal Prognosis

During our study, we recorded 16 uterine ruptures in The Witnesses (evacuated parturients); of the 16 uterine ruptures 14 had hystererraphia and 2 had hysterectomy. None of her complications were found in the Cases (prophylactic caesarean section) with $p=0.0036$. Camara K. [7] had found in his study 3 cases of uterine ruptures (2 hystererraphia and 1 hysterectomy). Post-operative complications: Hemorrhagic/anaemia complications were most represented, followed by infectious complications with 15.5% and 12.5% respectively in The Controls. Khlass K. [16] and Derbal S. [17] had found 26.3% and 20.8% infectious complications respectively. Zarouk [18] in Tunisia, Koné and Al. [19] in Mali had the highest rates of anaemia at 40.5% and 19.7% respectively. We did not find any complications in the cases: $p=0.00022$ OR -0.00 [0.00 - 0.029]. This may be related to the fact that women are held in the Home Necks for a long time before being received in a surgical setting with sometimes complications.

4.4.3. Length of Hospitalization

100% of cases had a hospital duration of less than or equal to three days compared to 46% of Witnesses with a statistically significant difference of 10 - 7. 54% of Witnesses had a hospital duration of more than 3 days. The average length of hospitalization in the cases was 2.01 days \pm 0.1 with extremes of 2 and 3 days. The average length of hospitalization for Witnesses was 4.9 days \pm 3.1 with extremes of 2 and 20 days. Tegueté I. [10] and Cissé B. [13] reported 9.3 days and 8 days respectively. We did not record any maternal deaths.

5. Conclusion

Prophylactic caesarean section is a surgical procedure that improves maternal and perinatal prognosis in contrast to emergency caesarean section.

Authors' Contributions

All the authors participated in the writing of the manuscript. They all approve the final version of the manuscript.

Ethics Authorisation

The ethics committee's authorization was found prior to the start of the study.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

- [1] Quenum, G., Memadji, M., Konan, B.R., Nigue, L. and Wellfens-Ekrac (2001) Quality Caesarean: Analysis of Factors and Determinants at Yopougon University Hospital. *International Journal of Medical Sciences*, **3**, 109-115.
- [2] Engelmann, P. (1986) Factors Related to the Increasing Caesarean Section Rates for Cephalopelvic Disproportion. *American Journal of Obstetrics and Gynecology*, **154**, 1095-1098. [https://doi.org/10.1016/0002-9378\(86\)90759-3](https://doi.org/10.1016/0002-9378(86)90759-3)
- [3] Demographic Survey and Health MALI II (1996) EDSM-II from 1995-1996. 181.
- [4] Racinet, C. and Favier, M. (1984) The Caesarean Section: Indications, Techniques, Complications. Masson, Paris, 185 p.
- [5] O'driscoll, K. and Foely, M. (1983) Correlation of Decrease in Prenatal Mortality and Increase in C-Section Rates. *American Journal of Obstetrics and Gynecology*, **61**, 1-5.
- [6] Dione, D. (2008) Comparative Study between Two Caesarean Section Techniques: Classical Caesarean Section and Misgav Ladach Caesarean Section at the Reference Health Centre of Commune V of the District of Bamako. Thesis of Medicine, Mali.
- [7] Camara, K. (2010) Emergency Caesarean Section versus Prophylactic Caesarean Section: Maternal-Fetal Prognosis Case/Control Study at the Reference Health Centre of Commune V of Bamako District, Mali. Thesis of Medicine, No. 367, 89.
- [8] Coulibaly, I. (1999) Caesarean in the Obstetric Gynecology Department of the Gabriel Touré Hospital in Bamako from 1992 to 1996 (about 3314 Cases). Thesis of Medicine, Bamako, 78-85.
- [9] Togora, M. (2004) Qualitative Study of Caesarean Section at the Reference Health Centre of Commune V of the District of Bamako from 2000-2002 (about 2883 Cases). Med Thesis, Bamako (Mali), M. 44.
- [10] Tegueté, I. (1996) Clinical and Epidemiological Study of Caesarean Section at the Maternity Ward of the National Hospital of Point "G" from 1991 to 1993. About a Control Case Study of 1544 Cases. Thesis Med., Bamako, No. 17, 133 p.
- [11] National Directorate of Health, Reproductive Health Cell, Caesarean Section Department (2006) Statistical Data on the Evolution of Caesarean Section.
- [12] Sissoko, H. (2006) Immediate Post-Cesarean Non-Infectious Applications at the Reference Health Centre in Commune V of Bamako District. Thesis of Medicine, Bamako Mali, M-247.
- [13] Cissé, B. (2001) Caesarean Section: Clinical, Epidemiological Aspects and Management of Post-Operative Complications in the Obstetric Gynecological Department of the Reference Health Centre of the Commune V. Medicine Thesis, Bamako, Mali, M.
- [14] Konate, M. (2001) The Study of Caesarean Sections in the Obstetric Gynecology Department over a 5-Year Period at Gabriel Touré Hospital. Medical Thesis, 05-M-74.
- [15] Traoré, L. (2008) Caesarean Section: Maternal-Fetal Prognosis at the San Reference Health Centre. Thesis of Medicine, Mali, M-304.
- [16] Khlass, K. (1989) Analytical Study of Caesarean Section Indications and Maternal-Fetal Prognosis on 277 Caesarean Sections Performed at the Maternity Ward of the New Habib Thameur Hospital (April 4, 1987 to January 31, 1989).
- [17] Derbal, S. (1991) Per and Postoperative Maternal-Fetal Complications of Caesarean Operations. About 1045 Cases. Thesis of Medicine, No. 128, Tunis.
- [18] Zarouk, S. (1996) Complications of Cesarean Section about 1470 Cases. Medical

Thesis, No. 49, Tunis.

- [19] Koné, A.I. (2005) Risk Factors for Post-Cesarean Maternal Complications at HGT. Medicine Thesis, Bamako, 2005-94p-224.