International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Théra T et al. Int J Reprod Contracept Obstet Gynecol. 2017 Nov;6(11):4786-4790
www.ijrcog.org

pISSN 2320-1770 | eISSN 2320-1789

DOI: http://dx.doi.org/10.18203/2320-1770.ijrcog20174988

Original Research Article

Epidemiology of placenta previa: 10 years analysis in Bamako's district

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Received: 24 August 2017
Accepted: 25 September 2017

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ABSTRACT

Background: The obstetrical haemorrhage constitutes the first cause of mother death, among the causes of these haemorrhages: the placenta previa. That is why we initiated this study for determine epidemiology of placenta previa in our service. The aim objective of this study was to determine the evolution and epidemiology of the placenta previa in our department.
Methods: It was a cross-sectional and comparative study of 10 consecutive years. We compared two groups: with and without placenta previa. We performed a multivariate analysis using the logistic regression model as well as the Odds Ratio and its 95% confidence interval.
Results: We recorded 504 cases of placenta previa among 30323 deliveries (1.7%). Age, parity and previous placenta praevia have been the recovered risk factors ($p < 0.001$). Among the studied pathologies only placental abruption was strongly associated with placenta previa ($p < 0.001$). However, there were no differences between the two groups according to rates of endometritis, postpartum haemorrhage and maternal death ($p > 0.05$). Indeed, there was a significantly higher incidence of stillbirths, Apgar score <7, transfer of new-borns and small birth weights in the placenta previa group ($p < 0.001$).
Conclusions: The most significant rick factors associated with placenta previa are high maternal age, high parity and previous placenta previa, caesarean section and abortion.

Keywords: Maternal outcome, Perinatal outcome, Placenta previa, Risk factors

INTRODUCTION

The placenta previa is the insertion of placenta partly or in totality on the lower uterine segment resulting with haemorrhagic complications at third quarter of the pregnancy. The placenta slips to the wall of uterus during the growth of lower segment.[1] Sometimes this ascent of placenta is not performed and the placenta stuck on the lower uterine segment. The frequency of placenta previa varies according to the criteria accepted, the term of the pregnancy and according to the mode of diagnosis clinic or ultrasound. So, there is variation of of 1% to 5% according to the literature.[1-3] If the aetiology of placenta previa is known, the factors of risk are however well identified. It is the antecedents of curettage, the uterus scar, the smoking, the age maternal, the multiparous and the multiple pregnancies.

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METHODS

It is about a transverse and comparative study at Gabriel TOURE's maternity at 1st January 2003 to 31st December 2012 (10 years). It is a hospital of 3rd reference and receives the references from all the country. We compared two groups. The 1st group was constituted of case of placenta previa and 2nd group was without it. This diagnosis was made on the following modalities: the elements of vaginal touch, the obstetric ultrasound or the measure of small side of membranes (a measure lower to 10 cm signing a placenta previa). Were included in the present study all the women admitted in the service among who the newborn has weighed at least 500 g or whose term of pregnancy was of at least 22 weeks of amenorrhea. For both groups we used Odds Ratio (OR) and its interval of confidence (IC).

Every time if effective was lower to 5, the test exact of Fisher was used. The threshold of significant statistics was fixed to 5%. The coefficient of correlation was calculated between the evolution of rate of placenta previa and that of rate of caesarean.

RESULTS

During the period of 1st January 2003 to 31st December 2012, we recorded 504 case of placenta previa among 30323 admissions in obstetrics (1.7%). The pregnancies without prenatal care were 15.7% in the group of case versus 10.2% in the group of controls (p >0.05). The frequency of placenta previa has oscillates between 1.3% in 2003 and 1.4% in 2012 with a peak of 2.9% in 2000. The placenta previa was associated to a significantly increased risk of hospitalization at course of third quarter of the pregnancy. However, we didn't had differences between both groups in what concerns the rate of endometritis, of haemorrhage of the deliverance and of death maternal (p >0.05) (Table 1).

Table 1: Maternal outcome of placenta previa in Bamako's district.

Maternal outcome	Placenta previa		Khi²	p	OR	IC
	Yes	No				
3rd Quarter hospitalization	8.2%	3.2%	37.95	<0.001	2.7	1.9-3.9
Deliveries						
Cesareans section	73.0%	27.0%	406.63	<0.001	6.2	5.1-7.5
Vaginal delivery	30.5%	69.5%				
Hemorrhage	2.0%	1.9%	0.047	>0.05	1.5	0.9-2.6
Atonia	0.4%	0.6%	0.21	>0.05	0.7	0.2-2.9
Coagulation disorder	0.6%	0.2%	a	>0.05	3.1	0.9-9.7
Placental retention	0.0%	0.2%	a	>0.05	1.01	1.01-1.03
Accreta placenta	0.0%	0.001%	a	>0.05	1.0	1.00-1.001
Late hemorrhage	0.0%	0.1%	a	>0.05	1.001	1.00-1.001
Endometritis	1.2%	1.0%	0.18	>0.05	1.2	0.5-2.7
Maternal death	2.2%	1.7%	0.56	>0.05	1.2	0.7-2.3

a = test exact of Fisher

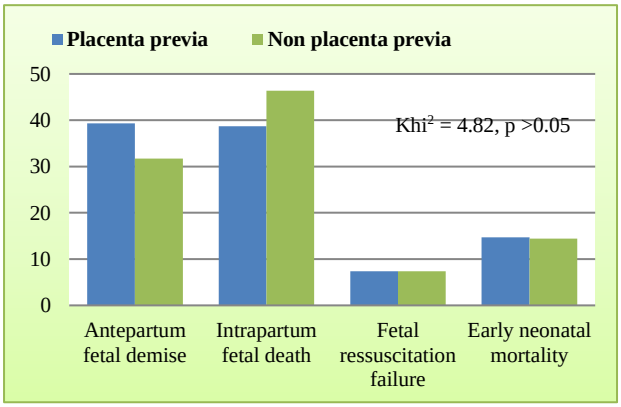

Figure 1: Distribution according to period of perinatal death and placental insertion.

Also, we recorded 73.1% of caesareans sections in the group placenta previa versus 57.4% in the group not having not placenta previa (p <0.001) (Table 1). These caesareans sections in the first group were more often made before or in beginning of labor under general anaesthesia (p <0.001). We have found a highest frequency of atypical hysterotomy and haemostasis hysterectomy in the group of cases although the rates of the mutilating treatment were not significantly different in both groups. All the slices of prematurity were more frequent in the group placenta previa (p <0.001) (Table 2). Overall 49.0% of placentas previa were childbirth prematurely versus 16.2% in the group of control. Indeed, it were more significantly high frequency of stillbirth, of Apgar score <7, of transfer new-born in service of neonatology and of small weight birth in the group

placenta previa (p <0.001) (Table 2). However, there was no significant difference according to the period of occurred of perinatal death and the type desertion placental in both groups (Figure 1). Additionally, there had not of significant difference according to the evolution of death perinatal in both groups during the period of the study (Figure 2).

Table 2: Perinatal outcome of placenta previa in Bamako's district.

Perinatal outcome	Placenta Previa Yes	No	Khi²	p	OR	IC
Apgar score 1st mn			406.49	<0.001		
0	26.3%	9.3%			6.4	5.1-8.1
1-3	6.8%	2.3%			6.7	4.6-9.9
4-7	34.9%	15.6%			5.1	4.1-6.4
≥8	32.0%	72.9%			Reference	
Apgar score 5 mn			[a]	<0.001	4.2	3.5-5.2
0	26.7%	9.4%			7.3	3.6-14.6
1-3	1.9%	0.4%			4.9	3.7-6.4
4-6	14.0%	4.2%			Reference	
≥8	57.5%	85.9%				
New-born weight			342.41	<0.001		
<1000 gm	8.6%	2.6%			509	4.2-8.4
1000-1499 gm	10.4%	3.5%			5.5	4.1-7.6
1500-2499 gm	39.4%	17.1%			4.2	3.5-5.2
2500-3999 gm	41.2%	74.3%			Reference >4000 g	
≥4000 gm	0.4%	2.5%				
With malformations	1.4%	1.2%	0.125	>0.05	1.1	0.5-2.4
Transfer to neonatology	33.1%	14.5%	132.62	<0.001	2.9	2.4-3.5
Perinatal death	34%	11.2%	238.31	<0.001	4.1	3.4-4.9
Stillbirth	10.8%	3.3%	82.77	<0.001	3.5	2.5-4.7
Peripartum death	10.7%	3.3%	82.05	<0.001	3.5	2.6-4.7
Death during resuscitation	2.6%	0.8%	18.42	<0.001	3.2	1.8-5.7
Death between J1 et J7	5.0%	1.5%	39.22	<0.001	3.4	2.3-5.2

a=Test exact of Fisher

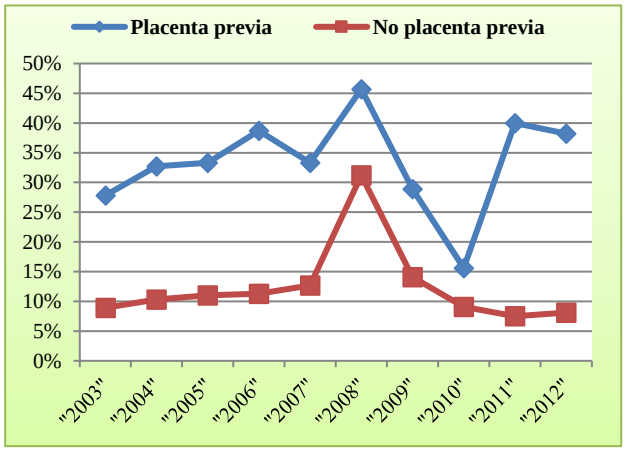

Figure 2: Evolution of perinatal death frequency in both groups.

DISCUSSION

In the present study the overall frequency of placenta previa during one decade was of 1.7%. In a recent meta-analysis who has included 58 studies, the prevalence of placenta previa was of 0.4%. She oscillates between 0, 28% and 1.97% according to the studies.[3] The results of this meta-analysis rhyme with those reported in the African studies (Table 3). In the present study, the frequency of placenta previa has oscillates between 1.3% in 2003 to 1.4% in 2012 with a peak of 2.9% in 2007. This trend realizes an aspect dysphasia, first crescendo then decrescendo with a correlation average at rate of caesarean that's the peaks were observed in 2006 and 2007 before it has a trend decrescendo. An evolution of rate of placenta previa was stackable to that of rate of caesarean was reported by other work.[4]

In the present study almost 1/2 (49.0%) of placenta previa was diagnosed during labor. Because of late of diagnosis we had to preform 45.4% of care at context of emergency. These high rate of emergency is because of a lot of gestates with the placenta previa had no prenatal care (15.7% of case versus 10.2% of controls). When those had been made the interval between the last consultation and the delivery was of at least 1 month (15.2% of cases versus 16.9% of controls). Also, the

trans-vaginal ultrasound, suggested by some authors for specify the position of placenta from the 20th week, is not a current practice in our context regardless of term of the pregnancy.[15] Also, in the present study, we found that 73.1% of cesarean sections of group of placenta previa versus 57.4% of controls were executed before labor or immediately at beginning of labor (p <0.001). These cesarean sections in the first group are more often made under general anesthesia (p <0.001); with more high frequency of atypical hysterotomy (to avoid placenta) and of hemostasis's hysterectomy although the rate of this mutilating treatment was not significantly different in both groups.

Table 3: Incidence of placenta previa in African studies (5.6-14).

Authors	Country	Period of study	Period of publication	Denominator	eff[a]	%[b]
Nyango DD	Nigeria	1999-2002	2010	-		0.89%
Ikechebelu JI	Nigeria	1997-2001	2007	3565 deliveries.	59	1.65%
Loto O	Nigeria	1996-2005	2008	7515 deliveries.	128	1.65%
Nayama M	Nigeria	2003	2007		98	3%
Lakhdar A	Maroc	1995-1999	2001		222	0.33-2.6%
Ezechi O C	Nigeria	2000-2003	2004			2.6%
Ghazli M	Maroc	1990-1995	1998		200	0.4%
Tebeu PM	Cameroun	2004-2008	2012	11197 deliveries.	126	1.1%
Buambo-Bamanga SF	Congo Brazza	1998-2002	2004	20234 deliveries	128	0.6%
N'guessan K	RCI	2002-2006	2009			1.6%
Present study	Mali	2003-2012	2015	30323 admissions	504	1.7%

a = effective, b= percentage

However, Okafori I et al has reported 85.71% of cesarean section without hysterectomy neither of maternal death and Nayama M et al at Niger has found 2.3% of hemostasis's hysterectomy.[8,16] In this study of Nayama M et al, the cesarean delivery was most performed (89.1%).[8] He didn't record any maternal death. In the present study we found 2.2% of maternal death in the group of placentas previa versus 1.7% in the group without placenta previa. The difference was not statistically significant. Among the studied pathologies, only the placental abruption was strongly associate at placenta previa (p <0.001). However, it had no differences between both groups in what concerns the rate of endometritis, of hemorrhage of the deliverance and of death maternal (p >0.05). However, the morbidity and the stillbirth neonatal death were significantly increased especially in antenatal period. Ikechebelu JI et al has found 4.5% of perinatal mortality associated at placenta previa at Nigeria and Nayama M has reported a perinatal mortality of 38.8% whose 22.5% of death antenatal to Niamey at Niger.[6,8]

Indeed, there had a statistically significant of stillbirth, of Apgar score <7 and of small birth weight in the group placenta previa (p <0.001). In the study of Lakhdar A et al at Morocco, the perinatal death was past of 40% in case of vaginal delivery to 11% in case of cesarean delivery whereas the prematurity was found in 36.45%, and the hypotrophy in 12.3%.[10] Always at Morocco Ghazli M et al has reported 6% of distress respiratory neonatal with of factors of bad prognostic fetal who were: the low gestational age, the small birth weight, the serious hemorrhage, the vicious presentation of unborn, the no monitoring of the pregnancy and the association of placenta previa with placental abruption.[11] In the present study the low rate of neonatal death is correlated to the improvement of technical support, including the expansion of service and the recruitment and of first doctors in specialization.

CONCLUSION

The most significant risk factors associated with placenta previa are high maternal age, high parity and previous placenta previa, caesarean section and abortion.

ACKNOWLEDGMENTS

The authors would like to thank all the staff of University Hospital of Gabriel Toure for the support of the study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Roussille M, Rudigoz RC. Reliability of ultrasound in the diagnosis of placenta. Rev Fr Gynécologie. 1980;75:83-6.
2. Rizos N, Doran TA, Miskin M, Benzie RJ, Ford JA. Natural history of placenta previa ascertened by

diagnostis ultrasound. Am J Obstet Gynecol. 1979;133:287-91.
3. Faiz AS, Ananth CV. Etiology and risk factors for placenta previa: an overview and meta-analysis of observational studies. J Matern Fetal Neonatal Med. 2003;13(3):175-90.
4. Kollmann M, Gaulhofer J, Lang U, Klaritsch P. Placenta praevia: incidence, risk factors and outcome. J Matern Fetal Neonatal Med. 2015;4:1-4.
5. Nyango DD, Mutihir JT, Kigbu JH. Risk factors for placenta praevia in Jos, north central Nigeria. Niger J Med. 2010;19(1):46-9.
6. Ikechebelu JI, Onwusulu DN. Placenta praevia: review of clinical presentation and management in a Nigerian teaching hospital. Niger J Med. 2007 Jan-Mar;16(1):61-4.
7. Loto O, Onile TG. Placenta praevia at the Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. A ten-year analysis. Niger J Clin Pract. 2008;11(2):130-3.
8. Nayama M, Sako-Moussa Y, Garba M, Idi N, Tahirou A, Kamaye M, et al. Management of placenta previa at the maternity of Issaka Gazobi's hospital: The prospective study about 98 cases at 1 year. Medecine of Black Africa. 2007;54(4):203-8.
9. Lakhdar A, Chaoui A. The placenta previa. In: First consencus conference: Obstetric haemorrhage, Marrakech. Association for training and research in Obstetric and Gynecology, Rabat. 2001:17-24.
10. Ezechi OC, Kalu BKE, Nwokoro CA, Njokanma FO, Loto OM, Okeke G. Placenta praevia: a study of risk factors, maternal and fetal outcome. Trop J Obstet Gynecol. 2004;21:131-4.
11. Ghazli M, Zinoun N, Salah-Eddine A, Aderdour M, Bekkay M. Placenta previa and fetal outcome: about 200 cases. French J Obstet Gynecol. 1998;93(6):457-63.
12. Tebeu PM, Fosso GK, Mbu RE, Nsangou I, Kouam L, Fomulu JN. Placenta previa at University Hospital, Yaoundé, Cameroon. Int J Gynecol Obstet. 2013;120(3):286-8.
13. Buambo-Bamanga SF, Oyere-Moke P, Makoumbou P, Ekoundzola JR, Mayanda HF. Hemorrhagic Placenta previa: Maternal and fetal outcome Placenta. J Health. 2004;14(3):177-81.
14. N'guessan K, Kouakou F, Loué V, Angoi V, Abauleth Y, Boni S. Placenta praevia: maternal and fetal prognosis in University Hospital of Cocody (Abidjan-Cote d'Ivoire). Mali Med. 2009;24(2):57-9.
15. RCOG. Placenta praevia, placenta praevia accreta and vasa praevia: diagnosis and management. Green-top Guideline. 2011;27:1-26.
16. Okafori I, Ugwu EO, Obis N, Nwogu-Ikojo EE. Uterine packing in the management of complete placenta praevia. Niger J Med. 2014;23(4):321-4.

Cite this article as: Théra T, Téguété I, Kouma A, Diallo B, Bocoum A, Moukoro N. Epidemiology of placenta previa: 10 years analysis in Bamako's district. Int J Reprod Contracept Obstet Gynecol 2017;6:4786-90.