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Née le 10 mars 1989 au Blanc-Mesnil (93)

**PROGNOSTIC FACTORS FOR PREDICTING PRETERM BIRTH AFTER A FIRST BLEEDING  
EPISODE FOR PATIENTS WITH PLACENTA PREVIA**

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- **SUMMARY**

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- **ABBREVIATIONS**

PP Placenta previa

WG Weeks of gestation

CNGOF Collège National des Gynécologues et Obstétriciens Français

BMI Body mass index

IO Internal orifice (of cervix)

OR Odds Ratios

CI Confidence interval

SD Standard deviation

mm millimeters

US ultrasound

- **INTRODUCTION**

The placenta previa (PP) is characterized by abnormal development of placental tissue overlying or in close proximity to the internal os of the cervix. Its prevalence is low at around 5 per 1000 pregnancies (1) and is associated with high rates of maternal and fetal morbidity. Maternal risks include antepartum and postpartum haemorrhage, maternal sepsis and need for blood transfusion and hysterectomy (2). The association of a PP and bleeding increases the risk for these adverse maternal and neonatal consequences. Neonatal complications of PP include preterm birth, congenital anomalies, respiratory distress syndrome, and anemia. The main neonatal risk in a PP with bleeding is the preterm birth due to spontaneous labor or an induced one for a maternal or fetal rescue (3).

As the main risk factors for PP – maternal age above 40 years and previous caesarean deliveries (4) – continue to rise, the rates of PP and linked complications will increase with them. Despite the improvement of obstetric care organization and neonatal management, preterm delivery remains one of the principal causes of perinatal mortality and morbidity.

The literature shows that perinatal morbidity in pregnancies with hemorrhagic PP decreased significantly with antenatal corticosteroid for maturation and tocolytic (5). Indeed, an antenatal administration of a single course of corticosteroid before 34 weeks of gestation (WG) - in situations that can lead to premature birth such as hemorrhagic PP – is associated, in the neonatal period, with a significant reduction of respiratory distress syndrome, intraventricular hemorrhage, necrotizing enterocolitis and death (6). In addition, the use of tocolytic in cases of symptomatic PP is associated with clinically significant prolongation of pregnancy and increased birth weight. (7)

The management of a woman who bleeds with a PP depends on degree of haemorrhage, and the foetal maturity at the time of haemorrhage. Since the mid-20th century and the work of Macafee, an expectant attitude is recommended (8). Most of the time, women require hospitalization, a martial supplement, or sometimes a blood transfusion (9). There is therefore oversight and treatments to be applied to reduce maternal and neonatal morbidity in the context of hemorrhagic PP. In France, recommendations have been written by the CNGOF to help manage these patients (5).

The aim of our study was to identify prognostic factors in order to predict the occurrence of preterm delivery within 7 days after a first episode of bleeding in women with PP complicated with an antepartum haemorrhage. Our secondary objective was to predict the occurrence of preterm delivery within 15 days after a first episode of bleeding.

- **MATERIAL AND METHODS :**

- **Study population**

This retrospective multicentre study analyzed records of women with PP beyond 22WG and who gave birth from 1 January 2007 to 31 December 2012 in 6 maternity departments (Angers, Brest, Caen, Nantes, Rennes and Tours).

Patient records were examined according to the diagnostic codes for the placenta previa (the International Statistical Classification of Diseases and Related Health Problems or CIM-10) (10). The records were searched with the following codes: O44.0 and O44.1 and O43.2. They correspond to low insertions of the placenta, with or without hemorrhage, and to insertion abnormalities (placenta accreta or percreta). The study included only the women for whom the distance between the lower edge of the placenta and the internal cervical os was 5 cm or less, as recommended by the CNGOF (5).

Data collection was done by two interns, from the central archives of each university hospital. Variables were manually assessed from pregnancy, birth and newborn records, as well as additional examinations and ultrasound reports. The following information were collected: gynecological and obstetrical antecedents, the evolution of the current pregnancy, details on birth and delivery, the status of the newborn, and postpartum evolution.

The inclusion criteria in the database were as follows:

- Patient having given birth in one of the aforementioned centers,
- Persistence of a PP during the last ultrasound before delivery,
- Ultrasound diagnosis of PP, abdominal or transvaginal,
- Term beyond 22 WG,
- Single or multiple pregnancy,
- Existence or not of a fetal malformation.

In our study, we included from this database the term beyond 24WG and before 36WG and existence of a first episode of vaginal antepartum bleeding before 24WG.

Women with a suspicion of placenta accreta or having a placenta accreta and percreta, and women with a medical termination of pregnancy for the current pregnancy were excluded for the study. Indeed, these are separate entities that have different management of placentas previa and their own complications.

- **Outcomes**

The primary outcome variable was delivery within 7 days after a first episode of bleeding. The secondary outcome variable was delivery within 15 days after a first episode of bleeding. These delays were taken to choose the moment to perform the antenatal corticosteroids. Indeed, the effect of antenatal corticosteroids is maximal between the 24th hour and the 7<sup>th</sup> day after the beginning of the treatment and this until 34WG. Their effect diminishes beyond the 7<sup>th</sup> day after the treatment (11) and is effectless beyond the 15<sup>th</sup> day.

- **Prognostic factors**

We selected in the literature clinically relevant candidate predictors associated with preterm delivery for potential inclusion in the model:

- Demographic characteristics: age, body mass index (BMI), nulliparity
- Medical and obstetrical history: antecedent caesarean section, antecedent preterm delivery (< 37WG), uterine malformation
- Characteristics of pregnancy: twins pregnancy
- Course of pregnancy: cigarette smoking, anterior/posterior PP, distance between lower edge of the placenta and the internal cervical orifice (0-10/11-20/>20mm), the cervical length ( $\leq 25$ / $> 25$ mm).

- **Statistical analysis**

Descriptive and comparative analyses were conducted using appropriate tests (t tests,  $\chi^2$  tests or Fisher exact tests). We have described the delay between the first bleeding after 24 WG and the ultrasound and delay between ultrasound and delivery.

For the analysis, the study started at the date of the first bleeding after 24 WG. Univariate and multivariate regression analyses were carried out with a logistic regression model. Odds ratios (OR) of preterm delivery within 7 and 15 days after the first bleeding episode and 95% confidence intervals (CIs) were estimated. Variables associated with preterm delivery with a p value < 0.25 in the univariate analysis were included in the multivariable regressions. The goal is to construct a prediction model from multiple variables. We assume here that the available data are sufficiently accurate for prognosis and adequately represent the population of interest. A nominal significance level of 5% was chosen in advance.

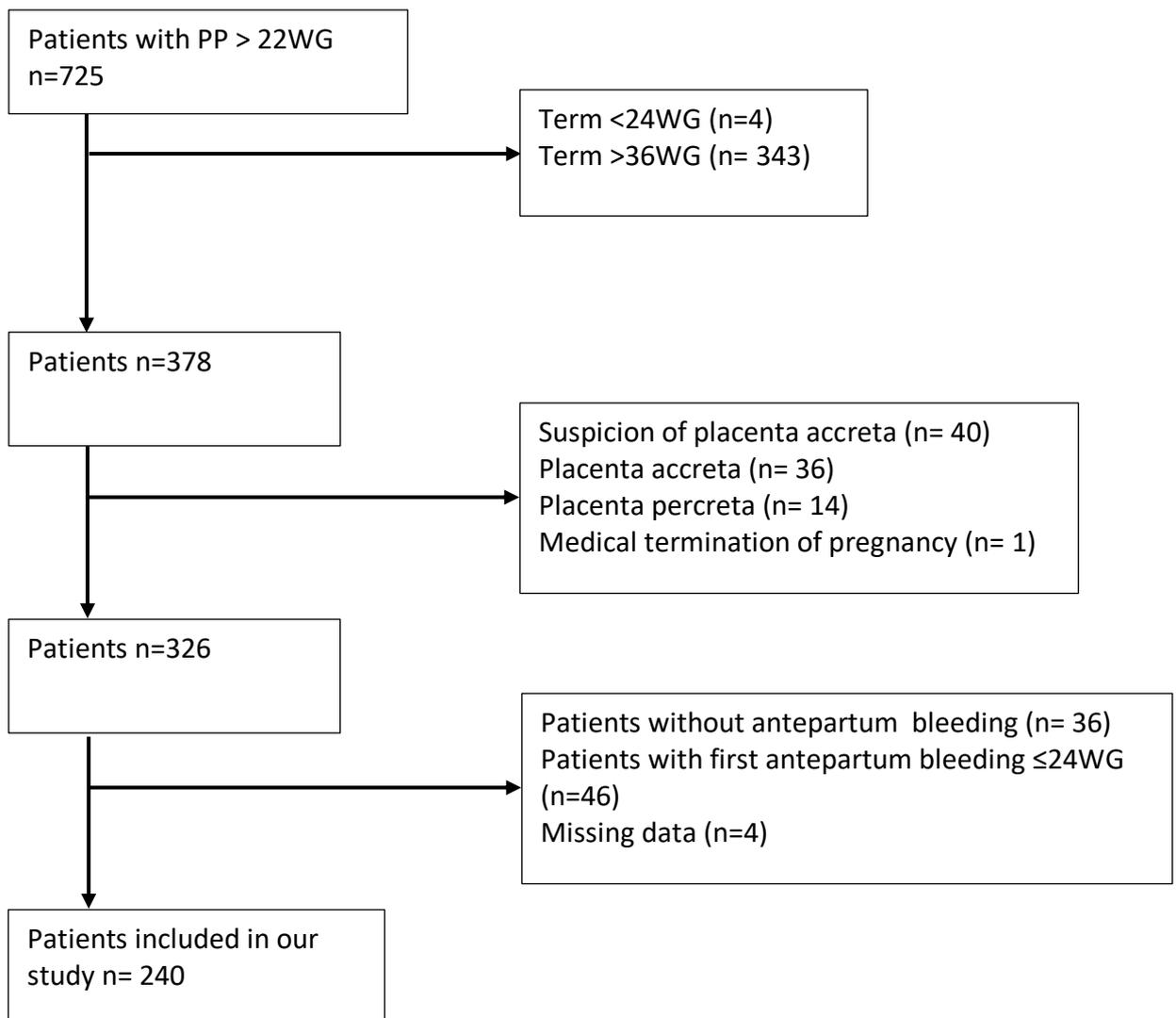
Statistical analyses were performed with SAS, version 9.1 (SAS Institute Inc., Cary, N.C., USA) and Stata statistical software, version 9.7.

- **RESULTS**

During the study period (between January 1, 2007 and December 31, 2012), there were 128.233 deliveries in the six studied university hospitals. One thousand eighty-nine files were identified using diagnostic codes O44.0, O44.1 and O43.2 (corresponding to low insertions of the placenta, with or without hemorrhage, and to insertion abnormalities - placenta accreta or percreta). From these 1.089 cases, we selected 725 patients for whom a diagnosis of PP was retained beyond 22 weeks of amenorrhea. The prevalence of PP in our serie was 0.56% (725/128.233).

Out of these 725 patients, we only included terms between 24 and 36 WG. We excluded patients with a suspicion of placenta accreta (n=40), patients having placenta accreta (n=36) or percreta (n=14), as well as the cases of medical termination of pregnancy (n=1). Then, we excluded patients who did not have bleeding during pregnancy (n=36) and patients who had first bleeding antepartum before 24WG (n=46). As a result, 240 patients were included in our study (Figure 1).

**FIGURE 1: Study flow diagram**



The general characteristics of all the patients in the study are shown in Table 1. The average maternal age of these patients was 31.5 years (minimum 18 and maximum 42 years). Their BMI was 22.9 kg/m<sup>2</sup> (minimum 15 and maximum 55 kg/m<sup>2</sup>). Seventy-one patients (29.6%) were nulliparous and among the multiparous women, 17 had already given birth prematurely (7.1%). Three-quarters of the patients were non-smokers (75.6%). In Table 1, the characteristics of the patients who gave birth within 7 days and for those who gave birth within 15 days are also summarized.

From the 240 patients in our study, 72 gave birth within 7 days after the first bleeding and 103 gave birth in 15 days.

**TABLE 1: General characteristics of the patients included in the study**

<b>FACTORS</b>	<b>All the patients studied n (%)</b>	<b>Delivery within 7days n (%)</b>	<b>Delivery within 15days n (%)</b>
Maternal age (years)	31.5 [18-42] ± 4.97*	30.9 [27-34] ± 4.95*	31.5 [28-35] ± 5.03*
BMI (kg/m <sup>2</sup> ) <sup>(1)</sup>	22.9 [15-55] ± 5.16*	22.9 [20-25] ± 5.6*	22.8 [19-25] ± 5.8*
Nulliparity			
No	169 (70.4)	48 (66.7)	76 (73.8)
Yes	71 (29.6)	24 (33.3)	27 (26.2)
Antecedent cesarean section			
No	207 (86.3)	63 (87.5)	91 (88.3)
Yes	33 (13.7)	9 (12.5)	12 (11.7)
Antecedent premature delivery			
No	223 (92.9)	67 (93.1)	95 (92.2)
Yes	17 (7.1)	5 (6.9)	8 (7.8)
Uterine malformation			
No	237 (98.8)	72 (100)	102 (99)
Yes	3 (1.2)	0	1 (1)
Twin pregnancy			
No	225 (93.8)	67 (93.1)	95 (92.2)
Yes	15 (6.2)	5 (6.9)	8 (7.8)
Smoking <sup>(2)</sup>			
No	174 (75.6)	55 (80.9)	72 (69.9)
Yes	56 (24.4)	13 (19.1)	26 (25.2)
Placental localization <sup>(3)</sup>			
Anterior	63 (26.3)	17 (23.6)	25 (24.3)
Anterior and posterior	15 (6.2)	4 (5.6)	7 (6.8)
Posterior	161 (67.5)	51 (70.8)	71 (68.9)
Distance to IO (mm) <sup>(4)</sup>			
0-10mm	50 (55.6)	13 (59.1)	18 (50)
11-20mm	26 (28.8)	5 (22.7)	14 (38.9)
>20mm	14 (15.6)	4 (18.2)	4 (11.1)
Length of cervical (mm) <sup>(5)</sup>			
≤25mm	30 (20.5)	11 (35.5)	13 (27.1)
>25mm	116 (79.5)	20 (64.5)	35 (72.9)
Delay between bleeding and US (days)	10 ± 19*	-4 ± 13*	-2 ± 11*
Delay between US and delivery (days)	17 ± 16*	5 ± 8*	7 ± 7*

<sup>(1)</sup> 28 missing data (n = 212/62/91); <sup>(2)</sup> 10 missing data (n = 230/68/98); <sup>(3)</sup> 1 missing data (n = 239/72/103); <sup>(4)</sup> 150 missing data (n = 90/22/36); <sup>(5)</sup> 94 missing data (n = 146/31/48); \*average [minimum-maximum] ± standard deviation

The ultrasound was not performed on the same day as the bleeding (in average, 4 days before for the group who gave birth within 7 days after the bleeding and 2 days before for the group who gave birth within 15 days after the bleeding). The average delay between ultrasound and delivery was 5 days (SD 8 days) for patients who gave birth within 7 days after the bleeding and it was 7 days (SD 7 days) for patients who gave birth within 15 days after the bleeding.

The results of the univariate and multivariate analyses for the patients who had a delivery within 7 days after a first episode of bleeding are shown in Table 2. Univariate analysis identified one prognostic factor that was significantly associated with preterm delivery. This one is the cervical length (OR = 2.78 (95% CI 1.15-6.73), p 0.02). No other factors are significant. The cervical length is also the only independent prognostic factors identified after multivariate logistic regression analysis (OR = 2.77 (95% CI 1.13-6.81), p 0.03).

The analysis could not be performed for uterine malformations because there were only 3 cases. We did not analyze the data for the distance between the placenta edge and the cervical IO because too many data were missing.

**TABLE 2 : Univariate and multivariate analyses of factors for predict preterm delivery within 7 days after a first episode of bleeding.**

Factors	Univariate analysis			Multivariate analysis		
	OR	95% CI	p	OR	95% CI	p
Maternal age	0.96	[0.91 - 1.02]	0.206	0.96	[0.88 - 1.04]	0.30
BMI for 1 unit	1	[0.94 - 1.06]	0.888	--	--	--
Nulliparity						
No	1			--	--	--
Yes	1.29	[0.70 - 2.32]	0.405			
Antecedent cesarean section						
No	1			--	--	--
Yes	0.85	[0.37 - 1.94]	0.713			
Antecedent premature delivery						
No	1			--	--	--
Yes	0.97	[0.32 - 2.86]	0.956			
Uterine malformation						
No	1			--	--	--
Yes	<0.001	[<0.001 - >999.9]	0.986	--	--	--
Twin pregnancy						
No	1			--	--	--
Yes	1.18	[0.38 - 3.58]	0.771			
Smoking						
No	1			1		
Yes	0.65	[0.32 - 1.31]	0.233	1.20	[0.46 - 3.10]	0.70
Placental localization						
Anterior	1			--	--	--
Anterior and posterior	0.98	[0.28 - 3.51]				
Posterior	1.26	[0.66 - 2.40]	0.754			
Length of cervical (mm)						
>25mm	1			1		
≤25mm	2.78	[1.15 - 6.73]	0.02	2.77	[1.13 - 6.81]	0.03

In the same way, the results of the analyses for delivery within 15 days are shown in Table 3. Univariate analysis identified no prognostic factor that was significantly associated with preterm delivery within 15 days. Alone length of cervical was associated with p-value < 0.25. We did not performed multivariate analysis.

The analysis could not be performed for uterine malformations because there were only 3 cases. We did not analyze the data for the distance between the placenta edge and the cervical internal orifice because there was too much missing data.

**TABLE 3 : Univariate analysis of factors for predict preterm delivery within 15 days after a first bleeding.**

Factors	Univariate analysis		
	OR	95% CI	p
Maternal age	1	[0.95 - 1.05]	0.986
BMI for 1 unit	0.99	[0.94 - 1.05]	0.939
Nulliparity			
No	1		
Yes	0.75	[0.42 - 1.32]	0.322
Antecedent cesarean section			
No	1		
Yes	0.72	[0.34 - 1.55]	0.414
Antecedent premature delivery			
No	1		
Yes	1.19	[0.44 - 3.21]	0.720
Uterine malformation			
No	1		
Yes	<0.001	[<0.001 - >999.9]	--
Twin pregnancy			
No	1		
Yes	1.56	[0.54 - 4.46]	0.403
Smoking			
No	1		
Yes	1.22	[0.67 - 2.25]	0.506
Placental localization			
Anterior	1		
Anterior and posterior	1.33	[0.43 - 4.13]	
Posterior	1.19	[0.66 - 2.17]	0.801
Length of cervical (mm)			
>25mm	1		
≤25mm	0.49	[0.21 - 1.16]	0.10

The associated power varies between 0.13 and 1 depending on the variables considered.

- **DISCUSSION :**

In our study we looked for prognostic factors to predict premature delivery after a first episode of bleeding for patients with placenta previa.

Within 7 days, we found only one prognostic factor from univariate and multivariate analyses: the cervical length  $\leq 25$ mm. Within 15 days, we found no prognostic factors for preterm delivery.

The prevalence of PP in our study was 0.56% (725/128.233), which is comparable to that is found in the literature (1).

Within 7 days, only cervical length  $\leq 25$ mm was identified as a prognosis factor in our study. Cervical length is an established predictor of preterm delivery for patients with preterm labor. Since the introduction of transvaginal sonographic measurement of cervical length and dilatation of the internal orifice of cervix, several studies (12-14) have shown the outstanding predictive value of this method for patients with preterm contractions as well as in asymptomatic patients. In another context than the PP, for example for the premature rupture of the membranes, a decrease of the cervical length seems to be also a good prognostic factor of preterm delivery. Rizzo and al. (15) reviewed data from 92 patients with premature membrane rupture between 24WG and 32WG. The median interval from admission to delivery was 4.5 days (range 0-36). An abnormal uterine cervix was associated with a short time interval (cervical length  $\leq 20$  mm, median 2 days, range 0-14 vs. median 6 days, range 0-36;  $p \leq 0.0001$ ). Transvaginal ultrasonography of the uterine cervix is routinely available in all obstetric units (16). For placenta previa, a transvaginal ultrasound should be performed systematically for a first episode of bleeding in order to locate precisely the placenta. A measurement of the cervical length during this ultrasound could be then performed to predict delivery. Of course, in this context of cervix shortening, it is difficult to differentiate a cause-and-effect relationship. Indeed, in France, the threat of preterm birth is defined by the combination of uterine contractions and a cervical measurement of less than 25 mm (17).

Moreover, measurement of the cervix seems interesting to perform because in the literature, a decrease in cervical length in a PP context is associated with a higher risk of bleeding, preterm birth and cesarean section. Sekiguchi et al. (18) showed that the risk of preterm cesarean section for cervix measured at less than 35mm and complete placenta previa is 4 to 5 times higher (OR = 4.67, 95% CI 1.66 - 13.10,  $p 0.006$ ). Similarly, Stafford et al. (19) studied hemorrhagic risk as a function of cervical length from a cohort of 89 patients with placenta previa covering after 24WG. They showed that a cervix measuring less than 30 mm was more often associated with a contractile uterus and an increased risk of delivery for hemorrhage (79 compared with 28%,  $p < 0.001$ ) and premature birth (69% compared with 21%,  $p < 0.001$ ).

We found no other prognostic factors for preterm delivery in our study, while there are others in the literature. For example, Lam et al. (9) compared a group of patients with PP and antepartum bleeding who gave birth before 36WG and a group who gave birth after 36WG. They showed that uterine contractions and hemorrhage in the second trimester were risk factors for preterm delivery before 36WG. For our part, we did not have the variable uterine contractions in our data. Like cervical shortening, uterine contractions belong to the natural

history of preterm birth and so it is difficult to differentiate a cause-and-effect relationship. Maybe there are other significant prognostic factors for which we did not have the data.

The timing of antenatal corticosteroid in the context of PP with first bleeding is difficult because its effectiveness is maximal within 15 days after its injection, that repeated treatments or rescue cure are not recommended (20). When the threat of premature delivery is present, i.e. associated with cervical shortening or uterine contractions, it seems that antenatal corticosteroids should be performed. As well as when bleeding is abundant but it remains difficult to evaluate for a study and remains at the discretion of practitioners.

We chose not to analyze the missing data of the patients. This leads to a reduction in our numbers and a lack of power. For cervical length, we had 40% missing data (94/240 patients) which can lead to selection bias if we consider that they are not completely random. For some variables, our study lacked power because it ranged between 0.13 and 1. It would require a larger number of patients to obtain an acceptable statistical power of 0.8 for all variables.

This is a multicenter study, which is strength since it decreases selection bias. But this can lead to a difference in the protocol of the management of these patients. In prognostic study, an important methodological point is the date of entry in the study. All variables for all patients have to be measured in the same point. This is not the case in our retrospective study. Indeed, the average delay between bleeding and ultrasound and between ultrasound and delivery were different for each patients.

This is a population based study that includes a large cohort over a 5 years period that gives a real representation of events. However, this delay is both an advantage and a disadvantage. The advantage of the size of our sample is that it gives us the opportunity to study such a rare event. Nevertheless, during this long period of study, some aspects of medical practice may have changed.

- **CONCLUSION**

In our study, cervical length measured at less than 25 mm is a prognostic factor predicting preterm delivery within 7 days after a first bleeding for patients with placenta previa. This measurement is easily achievable during a transvaginal ultrasound to locate the placenta.

It is therefore difficult to predict premature delivery for these patients and the time to perform corticosteroids after a first episode of bleeding remains at the discretion of each practitioner.

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- **SERMENT D'HIPPOCRATE**

Au moment d'être admise à exercer la médecine, je promets et je jure d'être fidèle aux lois de l'honneur et de la probité.

Mon premier souci sera de rétablir, de préserver ou de promouvoir la santé dans tous ses éléments, physiques et mentaux, individuels et sociaux.

Je respecterai toutes les personnes, leur autonomie et leur volonté, sans aucune discrimination selon leur état ou leurs convictions. J'interviendrai pour les protéger si elles sont affaiblies, vulnérables ou menacées dans leur intégrité ou leur dignité. Même sous la contrainte, je ne ferai pas usage de mes connaissances contre les lois de l'humanité.

J'informerai les patients des décisions envisagées, de leurs raisons et de leurs conséquences.

Je ne tromperai jamais leur confiance et n'exploiterai pas le pouvoir hérité des circonstances pour forcer les consciences.

Je donnerai mes soins à l'indigent et à quiconque me les demandera. Je ne me laisserai pas influencer par la soif du gain ou la recherche de la gloire.

Admise dans l'intimité des personnes, je tairai les secrets qui me seront confiés. Reçue à l'intérieur des maisons, je respecterai les secrets des foyers et ma conduite ne servira pas à corrompre les mœurs.

Je ferai tout pour soulager les souffrances. Je ne prolongerai pas abusivement les agonies. Je ne provoquerai jamais la mort délibérément.

Je préserverai l'indépendance nécessaire à l'accomplissement de ma mission.

Je n'entreprendrai rien qui dépasse mes compétences. Je les entretiendrai et les perfectionnerai pour assurer au mieux les services qui me seront demandés.

J'apporterai mon aide à mes confrères ainsi qu'à leurs familles dans l'adversité.

Que les hommes et mes confrères m'accordent leur estime si je suis fidèle à mes promesses que je sois déshonorée et méprisée si j'y manque.

## PROGNOSTIC FACTORS FOR PREDICTING PRETERM BIRTH AFTER A FIRST BLEEDING EPISODE FOR PATIENTS WITH PLACENTA PREVIA

**Introduction :** Placenta previa, found in 0.5% of pregnancies, is responsible for maternal and neonatal morbidity. The main maternal complication is antepartum genital bleeding. It increases the risk of preterm birth. Our objective was to identify prognostic factors of preterm delivery after a first episode of bleeding in placenta previa. This, in order to help the therapeutic management of these patients, especially to define when to do the antenatal corticosteroid because their effect diminishes beyond the 7<sup>th</sup> day after the treatment and is effectless beyond the 15<sup>th</sup> day.

**Study design :** This was a multicenter retrospective study. Our population was women with placenta previa between 24 and 36 weeks of gestation, who had a first episode of bleeding. We selected 11 variables that could be associated with preterm birth. The primary outcome was delivery within 7 days after a first episode of bleeding and the secondary outcome was delivery within 15 days.

**Results :** Two hundred forty patients were included between January 1, 2007 and December 31, 2012. We found only one prognostic factor from univariate analysis of preterm delivery within 7 days after a first bleeding episode: the cervical length  $\leq 25$ mm (OR = 2.78 (95% CI 1.15-6.73), p 0.02). This factor is also found after a multivariate analysis (OR = 2.77 (95% CI 1.13-6.81), p 0.03). However, we found no prognostic factors for preterm delivery within 15 days.

**Conclusion :** Only a decrease in cervical length  $\leq 25$ mm is associated with preterm delivery after a bleeding episode for patients with placenta previa. Preterm birth is therefore difficult to predict and the right time for corticosteroids remains at the discretion of practitioners.

**Key-words :** placenta previa; preterm delivery; genital bleeding; prognostic factors.

## FACTEURS PRONOSTIQUES D'ACCOUCHEMENT PREMATURE APRES UN PREMIER EPISODE D'HEMORRAGIE GENITALE CHEZ LES PATIENTES AVEC UN PLACENTA PRAEVIA

**Introduction :** Le placenta praevia, retrouvé dans 0,5% des grossesses, est responsable de morbidités maternelle et néonatale. L'hémorragie génitale anténatale est la principale complication maternelle. Elle augmente le risque d'accouchement prématuré. Notre objectif était d'identifier des facteurs pronostiques d'accouchement prématuré après un premier épisode de saignement chez les patientes ayant un placenta praevia. Cela, afin de guider leur prise en charge thérapeutique et notamment définir le moment optimal de réalisation de la cure de corticoïdes car son effet diminue au-delà du 7<sup>ème</sup> jour après le traitement et semble disparaître au-delà du 15<sup>ème</sup> jour.

**Matériel et méthodes :** Il s'agit d'une étude rétrospective multicentrique. Notre population était composée des femmes avec un placenta praevia entre 24 et 36 semaines d'aménorrhée ayant eu un premier épisode de saignement. Nous avons sélectionné 11 variables qui pouvaient être associées à un accouchement prématuré. Le critère de jugement principal était l'accouchement dans les 7 jours après le saignement et le critère de jugement secondaire était l'accouchement dans les 15 jours.

**Résultats :** Deux cent quarante patientes ont été incluses entre le 1<sup>er</sup> janvier 2007 et le 31 décembre 2012. Nous n'avons trouvé qu'un seul facteur pronostique de l'accouchement prématuré dans les 7 jours après un premier épisode hémorragique, à partir de l'analyse univariée: la longueur cervicale  $\leq 25$ mm (OR = 2.78 (IC95% 1.15-6.73), p 0.02). Ce facteur est également retrouvé après l'analyse multivariée (OR = 2.77 (IC95% 1.13-6.81), p 0.03). Nous n'avons retrouvé aucun facteur pronostique pour l'accouchement prématuré dans les 15 jours.

**Conclusion:** Seule une diminution de la longueur cervicale  $\leq 25$  mm est associée à un accouchement prématuré dans les 7 jours après un premier épisode hémorragique chez les patientes avec un placenta praevia. L'accouchement prématuré est donc difficile à prédire et le bon moment pour réaliser les corticoïdes reste à la discrétion des praticiens.

**Mots clés :** placenta praevia; accouchement prématuré; hémorragie génitale; facteurs pronostiques.