Original Research Article

Practices and Outcomes of Aboriginal Plant used by Parturients

ABSTRACT

Introduction: The conduct of this study led us to the objectives of measuring the hospital frequency of use of aboriginal plants by parturients and recording maternal-fetal outcomes among aboriginal plant users at Bengamisa General Referral Hospital during the period 28 July to 25 November 2018.

Method: The design is descriptive of the type of cohort that allowed us to select as cases 206 parturients who used aboriginal plants and 201 parturients who did not use them (control). Data were obtained through a literature review and a semi-structured interview. All statistical analyses were performed using the Chi-2 test at a significance level of p = < 0.05.

Results: The frequency of use of aboriginal plants by parturients was 50.6%. Factors associated with plant use during parturition were low education [7.8, (95% CI; 0.256-0.785), p-value=0.000], low income [RR=4.521; 95% CI (1.132-20.942), p-value=0.033], irregularity at antenatal visits [RR=11.1; 95% CI (0.229-0.681), p-value=0.001]. The plants involved were: okra, wild broom leaves and roots, sweet potato leaves, green tea and Sida cordifolia. Maternal-fetal outcomes were associated with shorter duration of labour [RR=119;95%; CI (14.889-48.427), p-value=0. 000], maternal [RR=12.268; 95% CI (0.210-0.644, p-value=0.000)], fetal [RR=27.620; 95% CI (0.104-0.357, p-value=0.000] and maternal death [(RR=5.042; 95% CI=0.034-0.795, p-value=0.025)] complications

Conclusion: The use of herbs during pregnancy is a topic that needs to be addressed by health professionals, as its frequency is high in women during labour.

KEYWORDS: Aboriginal plants, Parturients, Maternal-fetal outcomes

1. INTRODUCTION

It is currently estimated that up to 75% of the African population relies solely on the plants around them for their health and does not have access to so-called "modern" medicines [1].

The increase in the use of natural health products (NHPs), particularly medicinal plants, is observed worldwide. Due to the belief in the harmlessness of herbal medicines because of their natural origin, their use is increasingly seen as a reasonable and safer alternative to conventional therapy [2,3].

In the United States of America, studies indicate an increase in the use of herbs from 14% before 1999 to 19% in 2002 among adults. And in Canada, the number of Canadians who used at least one herbal product in 2001 was 38% [4]. This

frequency of herbal use is even higher in places where herbal medicine is a standard therapy, such as in Africa, compared to other countries, especially industrialised countries, where natural health products co-exist with conventional pharmacological therapy [5].

The use of herbal medicines is becoming more widespread and women are the biggest consumers and leaders of this trend. Many pregnant women are aware of this therapy before their pregnancy and continue to use it during motherhood.

Various studies have been carried out to assess the proportion of pregnant women who use therapeutic plants. One of them was carried out in Canada in 2009 on Canadian pregnant women using traditional plants in combination with modern pharmaceuticals. The prevalence of use was 9% [2].

In Australia, on the other hand, in 2010, on a cohort of pregnant women who had recently given birth, the results showed a prevalence of use of 34.4% during their pregnancies, and 77.9% of them self-prescribed. Another multinational study was conducted in October 2011 and February 2012, of 9,459 women surveyed who were pregnant or had given birth in the previous years in Eastern Europe, Northern Europe, North America, South America and Australia, the prevalence of herbal use was 28.9% of cases. The highest rate of use was in Russia with 69% of cases [6, 7].

In Ethiopia in 2011, at Nekante Hospital, a study conducted on the use of medicinal plants in pregnant women showed a significant prevalence of 50.4% of cases. It should also be noted that this consumption was initiated by the pregnant women themselves, after advice from family (23.8% of cases), friends and transmitted by "word of mouth" [8].

In the Democratic Republic of Congo, there are few studies on the use of aboriginal plants among pregnant women reported in the literature. A report by the National Reproductive Health Programme on the causes of death during childbirth is quite worrying in this respect. In 2009, out of 122 maternal deaths recorded in the former province of Bas-Congo, 60% were related to the use of Sida cordifolia [9].

The use of aboriginal plants in the world, in Africa and particularly in DR Congo is frequent during pregnancy. A large number of maternal and neonatal deaths are attributable to the use of aboriginal plants. The safety of these plants and their impact on pregnancy outcomes are poorly known.

Despite the belief in the safety of these plants by traditional users, fewer studies have been conducted to assess the impact of these products on maternal-fetal outcomes.

Our concern with the use of aboriginal plants is that these practices seem to be taking on a significant role in the midwifery environment without sufficient analysis of the active ingredients and their effects. On the other hand, the fact that these practices are always carried out clandestinely without the health system being

informed, could this not also be one of the causes of the high maternal mortality rate in our environment?

On this point, the following fundamental questions are the subject of our concerns and require answers: What is the hospital incidence of parturients using aboriginal plants during labour at the Bengamisa General Referral Hospital? What are the maternal-fetal outcomes observed during labour among aboriginal plant users?

Two research hypotheses arise from these research questions: the hospital frequency of use of aboriginal plants by parturients at the Bengamisa General Referral Hospital is quantitatively high, and maternal-fetal complications and deaths are more common outcomes among aboriginal plant users than among non-users.

The main aim of this study is to determine the hospital frequency and fetal-maternal prognosis of women who use aboriginal plants, with a view to improving management and reducing the risk of maternal-fetal morbidity and mortality.

Specifically, we aim to measure the hospital frequency of parturient use of aboriginal plants and record maternal-fetal outcomes in aboriginal plant users at the Bengamisa General Referral Hospital during the period 28 July to 25 November 2018.

2. METHODOLOGY

2.1 Research field

The present study is hospital-based and was conducted in the maternity ward of the General Reference Hospital of the Bengamisa Health Zone in the Tshopo Province of the Democratic Republic of Congo.

The choice of the study site was motivated by two main reasons: the Bengamisa Health Zone being rural, we expect that traditional belief is more respected there than in urban health zones. In addition, it is made up of populations from several tribes, so this may help us to discover a variety of cultural practices.

2.2 Target population and sample

The target population for this study was 407 parturients who attended the maternity ward of Bengamisa General Referral Hospital during the above period.

2.3 Sampling technique

For this study, we used the convenience sampling technique for both groups.

Thus, the sample consisted of two groups of parturients: the first, made up of 206 parturients who were identified as having used aboriginal plants during labour and who characterised our study group; the second was made up of 201 parturients who did not use these products, considered as a control group.

To be selected, the following criteria were used: any parturient admitted for labour under partogram supervision with a dilation of 4 cm, any parturient who agreed to participate voluntarily in the study.

2.4 Type of study

We opted for a descriptive cohort study. The aim was to compare a group of parturients who used aboriginal plants during labour with a group who did not use these plants in order to determine whether or not there were any effects associated with the use of these plants.

2.5 Data collection techniques and instruments

For this study, we opted for triangulation, based on documentary analysis and individual face-to-face interviews. To this end, we used an interview guide and a recording grid to collect information.

2.6 Data processing and analysis

The processing consisted of reproducing the data in categories, coding them and reproducing summary sheets in order to facilitate the transcription of the data into SPSS 20 software for the analysis of the results. We used the statistical test for proportional differences, Pearson's Chi-2 test with the null hypothesis retained when the observed p-value is greater than 0.05 which is the set risk rate.

However, to arrive at reassuring conclusions, we also assessed its strength by measuring the hazard ratio (HR) and confidence intervals to express the degree of precision of this estimate.

2.7 Ethical considerations and consent form

Consent was also obtained from the parturients by means of a consent form submitted prior to the interview. Only when the form was signed, after free and informed consent, were the parturients selected for the study.

Anonymity was ensured by the anonymous collection of information and restriction of forms by persons not involved in the research, and confidentiality was guaranteed. Thus, the women in the study were identified only by an anonymous study number corresponding to each of them, and information on all participants was kept confidential and was only accessible to the research team. Finally, fairness was ensured by fair and appropriate treatment according to the specificities of each respondent.

3. RESULTS

3.1 Hospital frequency

Of a total population of 407 parturients who delivered at the Bengamisa General Referral Hospital, 206 had used aboriginal plants during labour. This gives a hospital frequency of 50.6%.

3.2 Age of parturients

Table 1: Distribution of parturients by age group

Age group (in years)	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
15-20	61	50.8	59	49.2	120	100.0
21-26	46	48.4	49	51.6	95	100.0
27-32	67	48.6	71	51.4	138	100.0
33-38	27	58.7	19	41.3	46	100.0
39-44	5	62.5	3	37.5	8	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

According to the survey results, the age groups 27-32 and 15-20 years were the most represented in both groups with 138 and 120 cases out of 407, respectively a mean age of 25.65 years in the study group and 25.34 years in the control group. The Pearson Chi-square = 2.074, ddl = 4 associates a p-value (= 0.722) greater than 0.05. We confirm the non-rejection of the null hypothesis, statistically the difference is not significant between the two groups.

3.3 Marital status of parturients

Table 2: Distribution of parturients by marital status

Marital status	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Married	151	49.8	152	50.2	303	100.0
Free union	46	56.1	36	43.9	82	100.0
Single	9	40.9	13	59.1	22	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Pearson's Chi-square=1.889; ddl=2; p-value=0.389. The analysis of the results in Table 2 above shows that a greater number of respondents (303 out of 407) in both groups are married, with a slight predominance in the control group. The chi-square test associated with the p-value is 0.389 greater than 0.05. The null hypothesis is maintained and the independence of marital status in relation to the consumption of plants by the parturient is confirmed.

3.4 Educational level of parturients

Table 3: Distribution of parturients according to educational level

Educational level	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Analphabetic	140	59.1	97	40.9	237	100.0
Primary	21	20.6	81	79.4	102	100.0
Secondary	42	65.6	22	34.4	64	100.0
Higher and University	3	75.0	1	25.0	4	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

In this study, the vast majority of aboriginal plant users during labour were illiterate, with 140 out of 237 cases, or 59.1%. There was a high rate in the study group. However, the Chi-square (28.480), ddl=4 associated with p-value =0.000 is less than 0.05, so the difference is significant.

3.5 Socio-economic level

Table 4: Distribution of parturients by socio-economic level

Socio-economic level	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Average	9	64.3	5	35.7	14	100.0
Low	197	50.1	196	49.9	393	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

The results of this study indicate that in all cases, the vast majority of Aboriginal plant users (393 out of 407 cases), or 96.6% of cases, had a low socio-economic level, compared to a small number of those who had a medium level (14 out of 407 cases), or 3.4% of cases. P-value = 0.033 greater than 0.05. The difference is not significant. Socio-economic level is not associated with the use of aboriginal plants.

3.6 Parity of parturients

Table 5: Distribution of parturients by parity

Parity	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Nulliparous	47	43.9	60	56.1	107	100.0
Primiparous	51	69.9	22	30.1	73	100.0
Multiparous	87	44.4	109	55.6	196	100.0
Great multiparous	21	67.7	10	32.3	31	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Pearson Chi-square=19.414; ddl=3; p-value=0.000. As shown in the table above in both cases, the samples are made up more of multiparous parturients with 196 cases out of 407 (109 cases, or 55.6% are from the control group versus 87 cases, or 44.4% from the study group). We can confirm the rejection of the null hypothesis.

3.7 Compliance with prenatal consultation follow-up of parturients

Table 6: Distribution of parturients according to prenatal consultation follow-up

NPC follow-up	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
No follow-up (0 times)	47	55.3	38	44.7	85	100.0
Irregular follow-up (1-3 times)	77	63.6	44	36.4	121	100.0
Regular follow-up (4 times and more)	82	40.8	119	59.2	201	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Pearson's Chi-square=145.993; ddl=2; p-value=0.000

From the above table, it appears that 201 parturients, or 49%, had regular follow-up (4 times or more) in both groups. About 6/10 were in the control group. Of the 85 cases of 407 parturients who had not attended antenatal care, more than half (55.3%) were users of aboriginal products. Hence the rejection of the null hypothesis is maintained.

3.8 Categories of uterine contractions observed

Table 7: Distribution of parturients according to the uterine categories contractions observed

Categories	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Regular	65	27.1	175	72.9	240	100.0
Irregular	141	84.4	26	15.6	167	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Chi-square 145.993; ddl=1; p-value=0.000. The results of this survey in Table 7 above show that more than half of the parturients who used the aboriginal plants had developed irregular uterine contractions with 141 cases out of 206, i.e. 68%, while in the control group the majority of parturients, i.e. 175 out of 201 cases, i.e. 87%, had a regular contraction (Legende: irregular: existence of abnormal frequency and intensity, i.e. the strength and duration of uterine contractions).

3.9 Delivery duration of the respondents

Table 8: Distribution of parturients according to delivery duration

Delivery duration	Study group		Control group		Total	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
3- 4 hours	136	87.7	19	12.3	155	100.0
5-14 hours	70	27.8	182	72.2	252	100.0

Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Chi-square =136.337; ddl=1; p-value=0.000. The results shown in Table 8 above indicate that more than three quarters (3/4) of the parturients who used the aboriginal plants had a duration of labour of 3 to 4 hours, with 136 women out of 206 compared to 19 cases out of 201 parturients in the control group.

3.10 Maternal outcomes

Table 9: Distribution of parturients by maternal outcomes

Issues	**Study group**		**Control group**		**Total**	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Normal	157	46.9	178	53.1	335	100.0
With complications	41	66.1	21	33.9	62	100.0
With death	8	80.0	2	20.0	10	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

From the analysis of the results presented in this table above, we find that complications and deaths are more observed in the study group (respectively 66.1% of complications and 80% of deaths) compared to the control group (respectively 33.6% of complications and 20% of deaths). However, the Chi-square is associated with a p-value of 0.004 less than 0.05% and confirms the dependence of complications and deaths in the aboriginal plant users.

3.11 Types of maternal complications

Table 10: Distribution of parturients according to the types of maternal complications observed

Type	**Study group**		**Control group**		**Total**	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Uterine rupture	7	63.7	4	36.4	11	100.0
PP haemorrhage	25	80.7	6	19.3	31	100.0
Prolonged delivery	6	42.8	9	57.2	14	100.0
Soft tissue tearing	14	87.5	2	12.5	16	100.0
Placenta praevia	**0**	**0.0**	**1**	**100.0**	**1**	**100.0**

Pearson Chi-square =26.221; ddl=5; p-value = 0.000. The results of this study show that women in the study group had 4 times more postpartum haemorrhage than those in the control group (80.7% versus 19.3%). Soft tissue tears show the same pattern of high predominance in the herbal users with 85.7% of cases and 12.3% of cases in the controls respectively, i.e. six times more.

3.12 Fetal outcomes

Table 11: Distribution of parturients by feto-neonatal outcome

Fetal outcomes	**Study group**		**Control group**		**Total**	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Normal	147	44.1	186	55.9	333	100.0
With complications	45	78.9	12	21.1	57	100.0
With death	14	82.4	3	17.6	17	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Pearson Chi-square = 31.101; ddl = 2; p-value = 0.000. This study shows that overall, 57 complications were found in the two groups, with a predominance of almost 4 times among the foetuses and newborns of parturients using aboriginal products, 45 cases out of 57 (78.9%). Similarly, deaths were about 5 times more common in the same study group.

3.13 Types of foetal complications

Table 12: Distribution of parturients according to the types of foetal complications observed

Type of fetal complications	**Study group**		**Control group**		**Total**	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Fetal asphyxia	7	77.7	2	22.1	9	100.0
Neonatal respiratory distress	44	80.0	11	20.0	55	100.0
Procidence of the cord	4	66.7	2	33.3	6	100.0
Pathological jaundice in the newborn	7	100.0	0	0.0	7	100.0

Pearson Chi-square=354.929, ddl=4, p-value=0.000. From this study, it appears that respiratory distress in newborns is the most common complication observed in newborns in both groups (55 cases), with a predominance in newborns from aboriginal plant users (44 cases out of 55). There were then 7 cases of pathological jaundice of the newborn, ex-aequo with foetal asphyxia, in the aboriginal users and zero cases in the control group.

3.14 Route of delivery of parturients

Table 13: Distribution of parturients by route of delivery

Route	**Study group**		**Control group**		**Total**	
	Effective	*%*	*Effective*	*%*	*Effective*	*%*
Natural	157	45.8	186	54.2	343	100.0
Caesarean section	49	76.6	15	23.4	64	100.0
Total	**206**	**50.6**	**201**	**49.4**	**407**	**100.0**

Pearson Chi-square=22.465; ddl=1; p value=0.000. Analysis of the results in Table 13 shows that overall 84.2% of parturients had given birth by the natural route. However, of the 64 cases of caesarean section observed, 76.6% were among users of aboriginal products, a proportion three times higher.

3.15 Type of plants and maternal complications observed

Table 14: Distribution of parturients according to the type of plants and maternal complications observed

Type of plants and maternal complications observed						
Plant types	**Normal**	**Postpartum haemorrhage**	**Tear of soft parts**	**Ruptured uterus**	**Extended work**	**Total**
Abelmoschus esculentus	31	5	5	1	0	42
Cytisus scoparius leaves and root	30	3	2	1	2	38
Ipomoea batatas leaves	24	1	1	0	0	26
Camellia sinensis	22	1	0	0	3	26
Dioscorea villosa	14	8	2	0	0	24
Sida cordifolia	10	4	3	4	0	21
Persea americana Mill	15	3	1	0	0	19
Ricinus Communis L.	7	0	2	0	1	10
Musanga cecropioides	2	0	0	0	1	3
Zingiber officinale	2	0	0	0	0	2
Total	**157**	**25**	**14**	**6**	**7**	**209**

Chi-square=50.826; ddl= 36; p-value =0.052. The results of this study show that in the majority of cases, the plants used by the parturients caused maternal complications, with a predominance among those who consumed *Sida cordifolia* 11 cases out of 21(52%), *Dioscorea villosa* 10 cases out of 24(41.6%%), *Abelmoschus esculentus* 11 cases out of 42(26.1%), and *Cytisus scoparius* leaves and root 8 cases out of 36(22.2%). However, the difference is not significant, as p-value = 0.052 > 0.05.

3.16 Type of plant and observed fetal and neonatal complications

Table 15: Distribution of parturients according to the type of plant and fetal and neonatal complications observed

Types of fetal complications						
Plant	**Normal**	**Neonatal icterus**	**Procidence of cord**	**Neonatal respiratory distress**	**Fetal asphyxia**	**Total**
Abelmoschus esculentus	33	1	0	8	0	42

Cytisus scoparius leaves and root	28	1	2	3	2	36
Ipomoea batatas leaves	23	0	1	0	1	25
Camellia sinensis	18	2	0	6	0	26
Dioscorea villosa	14	2	0	7	1	24
Sida cordifolia	11	0	1	8	2	22
Persea americana Mill	9	1	0	9	1	20
Ricinus Communis L.	8	0	0	0	0	8
Musanga cecropioides	1	0	0	2	0	3
Zingiber officinale	2	0	0	0	0	2
Total	**147**	**7**	**4**	**44**	**7**	**208**

Chi-square=39.861; ddl= 45; p-value =0.689 > 0.05. As shown in Table 15 above, the plants that caused the most feto-neonatal complications were: *Persea americana Mill* 11 out of 20 cases (55%), *Sida cordifolia* 11 out of 22 cases (50%) and *Dioscorea villosa* 10 out of 24 cases (41.6%). On the other hand, respiratory distress in newborns was the most common complication observed in newborns, with 42 cases out of 59 (71.1%).

4. DISCUSSION

4.1 Hospital frequency

In this series, the frequency of use of aboriginal plants by parturients obtained at the Bengamisa General Referral Hospital during the study period was equal to 50.6%.

The frequency of use of Aboriginal plants for childbirth preparation during pregnancy differs between countries. It is more common in countries where herbal medicine is a standard therapy, and less common in industrialised countries. The range of frequencies found in the literature is between 0.09 and 55% [2].

These different results show us how often women increasingly consume herbs during labour. However, the rate of consumption is high in our series and in Ethiopia in contrast to the low proportions in industrialised countries. This helps to understand the difference in plant consumption between countries at different levels of development. It can be seen that in developing countries it is easy to obtain indigenous plants and this therapy is still very much a part of everyday life; this is not the case for developed countries where this traditional medicine was abandoned but is now tending to develop.

4.2 Level of education

With regard to the level of education, the results obtained in this study show that overall, more than half, i.e. 58.2% of the women in labour were illiterate, with a strong predominance among the users of aboriginal plants (65.6% of cases) and a statistically significant difference. The statistical significance of this difference is [7.8, (95% CI; 0.256-0.785); p-value =0.000].

Similarly, Forster et al in 2006 [11] found in their Australian survey that women with a low level of education (p-value = 0.044), or those who did not graduate [OR=0.56; 95% CI (0.38-0.82)], were less likely to use herbs in pregnancy than those with a higher level of education. Another study showed that women with nine or fewer years of education used fewer herbs during pregnancy than those with 10-13 years of education [OR=0.69; 95% CI (0.50-0.96)], while those with 14-15 years of education used more [OR=1.59; 95% CI (1.17-2.09)] [12].

These results, which are contrary to our own, may be linked to the observation of our African traditions where women are hardly educated, but rather prepared from an early age for marriage. This is in contrast to rich countries where fewer women do not attend school. In addition, traditional medicine does not attract the attention of many educated people in developing countries, as it poses a number of problems related to medical ethics on the one hand and chemical, pharmacological and clinical considerations on the other [13].

4.3 Antenatal follow-up

With regard to prenatal follow-up, it is clear that users of aboriginal plants attend fewer prenatal consultations (60.4%) than non-users (40.8%). Thus, the statistical analysis shows that non-attendance at antenatal clinics exposes pregnant women to the use of aboriginal plants during labour eleven times more than those who attended regularly.

In 2009, in Canada, Krystel [2] found that the majority of herbal users (89.06%) and non-users (86.60%) of herbal medicines significantly adhered to antenatal visits (>5 visits), p-value = 0.003. This difference could be explained by distances to reach the hospital, low income to meet the cost of consultations and the low intellectual level of the population in our study, in contrast to rich countries where women have easy access to antenatal visits in all aspects and social security services reassure them.

4.4 Duration of labour

This study reported a high rate of reduced labour (3-4 hours) among women who used aboriginal plants (66%) compared to those who did not (9.4%). Statistical analysis showed that there was a significant difference (p-value = 0.000) and that the use of aboriginal plants puts the woman at risk 119 times of giving birth in less than 5 hours.

This observation is not consistent with the literature. According to Friedman, cited by Cabrol, Carbonne, et al in 1997, the average duration of labour is 13.55 hours for primiparous women and 7.74 hours for multiparous women. Similarly, Cabrol, Carbonne, et al, in 1997 observed an average duration of labour in primiparous women of 13 hours, while multiparous women had an average duration of labour of 8 hours [14].

The precipitous delivery observed in our study could be justified by the fact that some of the plants used by parturients have uterotonic effects, which are potent and can increase the intensity of uterine contractions and reduce the duration of labour.

4.5 Maternal-fetal outcomes

With regard to maternal-fetal outcomes, it is clear that the use of aboriginal plants in pregnant women during labour is associated with maternal-fetal complications. It exposes the woman twelve times to the risk of maternal complications, five times to the risk of maternal death and 27 times to the risk of fetal complications compared to those who had not used them.

As for the maternal outcome, the complications observed are post-partum haemorrhage, soft tissue tears, uterine rupture and prolonged labour. Overall, they represent 23.8%. It is also noted that almost the majority of these maternal complications were caused by wild yam, *Abelmoschus esculentus* and *Sida cordifolia*. On the other hand, the most observed fetal complications are respiratory distress of the newborn, neonatal jaundice and fetal asphyxia. Also, the plants responsible are *Sida cordifolia*, *Camellia sinensis*, *Abelmoschus esculentus* and *Dioscorea villosa*.

The results found in this study allow us to note that even if for several authors, traditional medicine is gentle, natural but not without toxicity, there is nevertheless a risk for patients if the plants are poorly advised, if the evaluation of consumption has not been carried out to avoid the risks. The risks are even higher for pregnant women who have undergone numerous changes in the major functions of the body. Thus, the active ingredients of these different plants could be responsible for the consequences observed in pregnant women and their foetuses after their passage through the placental barrier.

Sida cordifolia, for example, which is one of the most incriminated plants, by its very nature, plays the role of ephedrine as an active ingredient and can increase the intensity of uterine contractions and promote precipitous delivery, which can lead to serious complications such as haemorrhaging, soft tissue tears and uterine ruptures.

Unlike wild yam, which contains progesterone, capable of promoting the relaxation of blood vessels and neutralising the stimulating effects of oestrogen, resulting in

reduced uterine contractions and prolonged labour, which are the cause of post-partum haemorrhage, foetal asphyxia and neonatal distress.

This precipitated delivery could be justified by the uterotonic effects found in these plants. Consequently, the woman who gives birth can escape all control, especially if it is her first time. In addition, the process of management can be complicated, whereas the normal process allows health care providers to apply strategies that lead to the resolution of potential complications.

CONCLUSION

This study describes the practice and outcomes of using aboriginal plants in pregnant women during labour. The aim of this study was to measure the hospital frequency of aboriginal plant use by parturients and to record maternal-fetal outcomes among aboriginal plant users at Bengamisa General Referral Hospital during the period 28 July to 25 November 2018.

The results of this study showed that the frequency of use of aboriginal plants by parturients at the Bengamisa General Referral Hospital was 50.6% of cases. The study also found that the use of aboriginal plants by pregnant women was associated with a low level of education, which exposed a pregnant woman more than seven times to the risk of using aboriginal plants during labour. In addition, irregular attendance at antenatal clinics is also a factor in this association. In addition, it was observed that okra, wild broom leaves and roots, sweet potato leaves, green tea and Sida cordifolia were the plants most used by pregnant women.

The study also showed a clear association between the use of aboriginal plants, short duration of labour (3-4 hours) and fatal maternal-fetal outcomes (maternal complications, fetal complications and maternal death). Also, it should be noted that complications and deaths were more frequent in the study group (66.1% of complications and 80% of deaths respectively) compared to the control group (33.6% of complications and 20% of deaths respectively).

In view of the results obtained, we confirm the initial hypotheses, namely: the hospital frequency of the use of aboriginal plants by parturients at the Bengamisa General Referral Hospital was quantitatively high, and fetomaternal complications and deaths were more observed among users of aboriginal plants than among non-users.

At the end of this study, we propose a number of recommendations that we hope health professionals and pregnant women can use:

- To pregnant women: to avoid the consumption of aboriginal plants without a medical prescription; always inform the health professional if they consume the plants during labour.

- Health professionals to: Always seek a history of herbal use in all women in labour; strengthen strategies to sensitise pregnant women to respect prenatal consultation; raise awareness among pregnant women about the risk of using aboriginal plants during labour.

LIMITATION OF THE STUDY

We did not collect data related to the socio-economic level of the parturients. In addition, the use of the partogram was exclusively the domain of the midwives of the hospital under study.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

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