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Evaluation of Insertion with the New Inserter of the Intra-Uterine Device of the Postpartum at the Referral Health Center of Commune II of Bamako, Mali

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Abstract

Background: In Mali, contraceptive prevalence is low, while the unmet need for family planning is very high. Postpartum contraception can help to significantly reduce these unsatisfied needs. The introduction of the intrauterine device (IUD) in the postpartum quickly encountered problems with the type of forceps used to make the insertions (Kelly or Heart forceps), and also their availability at the various health centers. Thus, in 2016, the Population Services International Mali (PSI-Mali) introduced the insertion of the IUD in the postpartum with the new inserter in order to counter this forceps problem and to contribute to guaranteeing the quality of postpartum IUD insertions. **Objectives:** They were to determine the frequency, the socio-demographic and clinical characteristics and to report the side effects and the complications. **Methods:** This was a descriptive and analytical cross-sectional study from September 1st 2016 to August 31st, 2018. All deliveries that met the eligibility criteria, having chosen and benefited the postpartum intra-uterine device with the new inserter were included. **Results:** During the 2 years, we recorded 73 cases of insertion of the postpartum intra-uterine device with the new inserter over 7797 clients meeting of the world health organization's criteria of medical admissibility for the use of an intra-uterine device with a frequency of 0.93%. They were married in 97% of cases, large multiparous in 48% of cases, aged between 30 and 39 years in 62% of cases. We didn't notice any complications in 96% of cases. Expulsion with 4% was the only complication. The clients didn't have any side effects in 98% of cases. **Conclusion:** The

insertion of a postpartum intra-uterine device with the new inserter has supplanted the insertion techniques using forceps in our center because of its ease and speed. Its use is worth being popularized to help reduce the unmet need for family planning.

Keywords

Family Planning, Intra-Uterine Device, New Inserter, Postpartum

1. Introduction

Contraception is all the means and techniques medical or not, available to individuals and couples permitting them to perform their sexuality with enough responsibility, so as to avoid unintended pregnancies, to space births and to have the desired number of childbirths at the desired time [1]. It is recognized as an essential means for the health and well-being of women and their families [2]. It plays a vital role in reducing maternal, neonatal and infant mortality. Despite these benefits, the Demographic and Health Survey (DHS) data from 27 countries indicate that the needs in contraception of 65% of women in postpartum were not met [3]. The reasons for these unmet needs are various [4]. Among other things, services and resources are not always available, choices are limited, fear of social disapproval or partner opposition, high cost of contraceptives for rural women, the burden of pressure family and unfounded rumors, lack of information from husbands or partners and inadequate health care providers, make the waiting time very long. The fear of side effects and the health concern retains some people. Thus, these unmet needs put women at risk of unplanned and unwanted pregnancies, with corollary unsafe abortions, too close births, maternal and neonatal mortality. For family planning, there is a wide range of contraceptive methods of which the intra-uterine device (IUD) is the most used worldwide with a frequency of 23% [5]. Intra-uterine device use varies among countries. In European countries, it is higher (3% - 30%), while it is only 1% in North America [6]. In Mali, according to the DHS-V [7], the IUD is the least used contraceptive method with a prevalence of 0.4% while the unmet needs for family planning remain high, at 26%. According to the DHS-VI [8], the unmet need is 24%. In Bamako, the rate of IUD use is 1.8% [7]. Mali, like other countries such as India, China, Mexico, Paraguay, Egypt and Kenya, has opted to scale up its postpartum IUD program (PPIUD). Since its introduction in Mali in July 2011, few studies have been devoted to this topic. Sidibé K [9] found in 2013 in the referral health centers of Bamako, 0.83% of PPIUD inserted with the heart's forceps. Fané B [10] found in 2014 in Sikasso city, 5.4% insertions of PPIUD with Kelly's forceps. Yalcouye B [11] in 2015 found at the referral health center of Commune I and the community health center of Banconi (ASACOBA) of Bamako, 0.074% case of PPIUD inserted with heart's forceps. Ordinary IUD inserters are too short to reach the uterine fundus after delivery and their leads

are not long enough to be visible after delivery. Their insertions forced providers to use forceps to reach the uterine fundus. The new device of the DIUPP is equipped with an inserter and long threads. It eliminates the need to use a forceps, making the PPIUD insertion technique easier and more similar to interval insertion. The new inserter is firm, but bends to adapt to the shape of the uterus after delivery and has a longer thread, visible after the insertion of the PPIUD. The lack of study since the introduction of insertions with the new inserter in the postpartum, led us to do this work. The objectives of this work were to determine the frequency, the socio-demographic and clinical characteristics and to report the side effects and the complications.

2. Methods

This was a descriptive and analytical cross-sectional study from September 1st, 2016 to August 31st, 2018 in the obstetrics and gynecology department of the referral health center of commune II of Bamako. Any mother who has met the eligibility criteria and who has chosen and received the postpartum intra-uterine device with the new inserter was included. Any patient who didn't meet the eligibility criteria and those who met the eligibility criteria but whose choice wasn't the IUD and postpartum intra-uterine insertions with forceps were not selected. This was an exhaustive sampling of all clients who met the inclusion criteria. After the insertions, the clients were reviewed 2 weeks later, then 4 to 6 weeks postpartum and the rest of the visits were done according to the needs of the woman. The variables studied were age, level of education, parity, inter-reproductive interval, living children, counseling period, insertion period, insertion's author, side effects and complications. These parameters were obtained through the interrogation and the use of supports (antenatal records, birth records, family planning records and operative reports). The statistical test used was Fisher's exact test with a significance level set at 5%.

3. Results

Frequency: From September 1st, 2016 to August 31st, 2018, out of 7797 clients meeting WHO medical eligibility criteria for IUD use in the postpartum, 73 benefited from insertion with the new IUD inserter with a frequency of 0.93%.

Sociodemographic and clinical characteristics: The age group from 30 to 39 years accounted for almost 62% of cases (**Table 1**). These were married women in 97% of cases, unschooled in 45% of cases, large multiparous in almost half of cases (49%), with inter-pregnancies intervals between 12 and 24 months in 47% cases and more than 24 months in 44% of cases. These clients had at least 6 live children in 40% of cases (**Table 2**). Counseling was performed during the prenatal period in 59% of cases, in the immediate postpartum period in 25% of cases and in the latency phase in 16% of cases (**Figure 1**). The majority of PPIUD were inserted during a trans-caesarean section with 41% of cases, followed by postplacental insertion with 32% of cases and immediate postpartum insertion in 27% of cases (**Table 3**). The insertions were performed by residents under the

supervision of gynecologists and midwives in 40% of cases, by obstetrician gynecologists in 28% of cases, by midwives in 18% of cases and by general practitioners in 14% of cases (Table 4).

Table 1. Clients distribution according to age group.

Age group	Number	Frequency (%)
≤19 years	4	5
20 - 29 years	18	25
30 - 39 years	**45**	**62**
≥40 years	6	8
Total	73	100

Table 2. Clients distribution according to number of living children.

Number of live children	Number	Frequency (%)
1 to 3 live children	24	33
4 to 5 live children	20	27
≥6 live children	**29**	**40**
Total	73	100

The average number of children was 3.07 with extremes of 1 and 10.

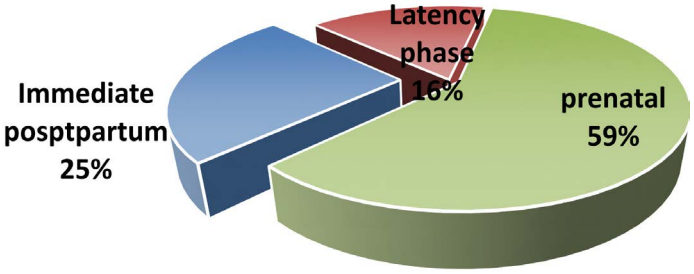

Figure 1. Clients distribution according to the counseling time.

Table 3. Clients distribution according to the insertion period.

Insertion period	Number	Frequency (%)
Postplacental	23	32
Immediate postpartum	20	27
Trans-caesarian section	30	41
Total	73	100

Table 4. Clients distribution according to the practitioner performing the insertion.

Practitioner	Number	Frequency (%)
Gynecologist-Obstetrician	21	28
General practitioner	10	14
Midwife	13	18
Resident	**29**	**40**
Total	73	100

Complications and side effects: We noted 1 case (2%) of hypermenorrhea (Table 5) and 3 cases (4%) of complications (Table 6). Expulsion was the only complication. It was exclusively about insertions performed by the residents in the immediate postpartum (Table 7). They were observed with the multiparous and the large multiparous in 3% and 1% of cases respectively (Table 8).

Table 5. Clients distribution according to side effects.

Side effect	Number	Frequency (%)
Yes	1	2
No	**72**	**98**
Total	73	100

Table 6. Clients distribution according to complications.

Complication	Number	Frequency (%)
Yes	3	4
No	**70**	**96**
Total	73	100

Table 7. Relation between the performer of insertion and the expulsion of the IUD.

Performer of insertion	Expulsion					
	Yes		No		Total	
	Number	Frequency (%)	Number	Frequency (%)	Number	Frequency (%)
Obstetrician	0	0	21	28	21	28
General practitioner	0	0	10	14	10	14
Midwife	0	0	13	18	13	18
Resident	3	4	26	36	29	40
Total	3	4	70	96	73	100

There was a statistically significant relation between expulsion and the performer of the insertion. P = 0.000 and Fisher's test = 2.868.

Table 8. Relation between parity and the expulsion of the IUD.

Parity	Expulsion					
	Yes		No		Total	
	Number	Frequency (%)	Number	Frequency (%)	Number	Frequency (%)
Primiparous	0	0	3	4	3	4
Pauciparous	0	0	20	27	20	20
Multiparous	2	3	12	17	14	20
Large multiparous	1	1	35	48	36	49
Total	3	4	70	96	73	100

There was no statistically significant relation between parity and the expulsion of the IUD. P = 0.269 and Fisher's test = 4.049.

4. Discussion

Frequency: The frequency of the postpartum IUD insertion with the new inserter was 0.93% in our study. In the literature, we didn't find any study carried out on insertions of the PPIUD with the new inserter. Sidibé K [9] found in 2013 in five referring health centers of Bamako, 0.83% insertion of PPIUD with the heart forceps and Fané B [10] found in 2014 in Sikasso, 5.4% of PPIUD inserted with Kelly's forceps.

Sociodemographic and clinical characteristics: The age group 30 to 39 years accounted for almost 62% of cases. These were married women in 97% of the cases, unschooled in 45% of the cases, large multiparous in almost half of cases (49%), with inter-pregnancies intervals between 12 and 24 months in 47% cases and more than 24 months in 44% of cases. These clients had at least 6 live children in 40% of cases. These data reflect the low contraceptive prevalence in Mali, which was 10% in 2012, and 16% in 2018 but 22% in Bamako; the fertility rate was 6.3 children per woman in Mali and 4.8 children per woman in Bamako and the majority of women are unschooled [8]. Concerning the education levels, these are contrary to those of the DHS-VI [7] according to which the clients who had opted for the IUD were all educated. This difference could be explained by intensified awareness campaigns in recent years in favor of long-acting methods, the integration of family planning counseling in prenatal consultation activities, but also by the free availability of kits of postpartum IUD in our center as well as in all health centers where there are providers trained in insertion techniques of PPIUD with the new inserter. In Yalcouye B's study [11], clients were aged 29 to 38 in 60% of cases, married in 95% and pauciparous in 50% of cases and in that of Sidibé K [9], clients were aged 35 to 39 years in 26.5% of cases, married in 87.8% of cases, unschooled in 55.3% of cases, large multiparous in 30.9% of cases, with intervals between births than 24 years in 63.9% of cases. The Family planning counseling was performed during the prenatal period in 59% of cases, in the immediate postpartum period in 25% of cases and in the latency phase in 16% of cases. Yalcouye B [11] has pointed out that 48.30% of counseling took place during antenatal care, 31.7% during the immediate postpartum period and 20% during latency phase. According to the literature, the prenatal period is the best time on counseling for postpartum contraception. If counseling has not been done during this time, it may be done during the latency phase and within 48 hours after delivery. It is not advised to do family planning counseling during the active phase [2]. The majority of PPIUDs were inserted in trans-caesarean section in 41% of cases, followed by postplacental insertion in 32% of cases and immediate postpartum insertion in 27% of cases. These rates differ from those found by Sidibé K [9] where immediate postpartum insertion was most strongly represented in 58.4% of cases, followed by the postplacental period in 36.1% of cases and trans-caesarean section in 5.5% of cases. The study of Sidibé K [9] was on the first PPIUD insertions in Mali, where the majority of insertions were made during the training periods. For example, clients who gave birth at night

had to wait until the next day to receive their IUDs hence the high frequency of insertions in immediate postpartum. Diata A *et al.* [12] in Senegal found that post-placental insertion was the most represented with 62.7% of cases. In our study, 40% of IUD insertions were performed by residents under the supervision of gynecologists and midwives, 28% by obstetrician gynecologists, 18% by midwives and 14% by general practitioners. These results differ from those of Sidibé K [9] and Yalcouye B [11] who found respectively that 56.8% and 71.70% of insertions were performed by midwives.

Complications and side effects: We noted complications in 4% of cases. This frequency is lower than that of Sidibé K [9] and Yalcouye B [11] who reported 7.20% and 6.67% of complications respectively. Expulsion with 4% was the only complication encountered in our study. It was exclusively about insertions performed by the residents in the immediate postpartum period. In our study, there was a correlation between the expulsion and the IUD insertion period (P = 0.018, Fisher Test = 5.548) and between expulsion and the quality of the service provider (P = 0.000, Fisher test = 2.868). This is conformed to literature data which states that the expulsion rate is a function of the insertion period and the experience of the service provider. Thus, the more the insertion is done long time after the delivery, the higher the expulsion rate [2] [13] [14] [15]. In our study, expulsions were observed with the multiparous and large multiparous with 3% and 1% respectively but statistically there was no relationship (P = 0.269, Fisher test = 4.049). Sidibé K [9] reported 2.3% and 4% expulsion rates with multiparous and large multiparous but there was not statistical relationship between the parity and expulsion. The predominance in these patients could be explained by the fact that these clients are the more common in the different studies. We noted 1 case or 2% of side effects (hypermenorrhea). Gueye M [16] in Senegal found a 5% expulsion rate and a 2.7% rate of side effects. Our results are significantly lower than the 4% of MCHIP [15].

5. Conclusion

The insertion of the PPIUD with the new inserter has substituted the techniques of insertion with the forceps in our health center for the reasons of comfort of the clients, the appropriate prevention of the infections, of its ease and speed. Its utilization should be popularized in order to reduce the unmet needs for family planning.

Conflicts of Interest

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

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