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Research Article

Evaluation of the Management of Spontaneous First Trimester Abortions at the Institute of Social Hygiene Hospital in Dakar (Senegal) in 2019

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Abstract

Introduction: Abortions represent an important part of obstetrical emergencies managed in Senegalese maternity hospitals. The complications that can arise from them are sometimes responsible for maternal mortality and morbidity. Therefore, the continuous improvement of Postabortion Care (PAC) remains a concern. It is in this sense that we conducted this study, the main objective of which was to evaluate the management of abortions at the Institut d'Hygiène Sociale de Dakar. The specific objectives were to describe the epidemiological profile of spontaneous first-trimester abortions, to report the practice of postabortion care, to compare the effectiveness of Misoprostol with that of manual intrauterine suction in the management of first-trimester abortion, to state the cost of care borne by patients, and to assess the use of family planning in the postabortion period.

Material and methods: This was an exhaustive, retrospective, descriptive and analytical study conducted over a period of 6 months (from June 1, 2019 to December 31, 2019 at the Maternity Hospital of the Institute of Social Hygiene of Dakar and concerning a cohort of pregnant women managed for a first trimester abortion. The data were collected from the patients' files and the abortion registry. Data entry was performed with EPI INFO 7 software and analysis with SPSS 21 software. The parameters studied were patient characteristics, clinical, paraclinical and therapeutic data, follow-up after uterine evacuation and postabortion contraception.

Results: The sample consisted of 50 patients. The epidemiological profile of the patients was that of a young woman, aged on average 30 years, primiparous (32%), married (96%), without professional activity (92%) and residing in the South district (60%). The main symptom was metrorrhagia (86%). The mean gestational age at admission was 9 weeks' gestation and 64% of the patients had not received prenatal consultation before the accident. Our multivariate analysis allowed us to compare the epidemiological, clinical and ultrasound data of the patients according to the treatment used. From this comparison, it appears that apart from parity, no other parameter really influences the choice of the method of uterine evacuation. However, success with medical treatment after two courses of treatment in nulliparous women was more frequent (71.4%) with a significant difference (p=0.01). This was related to the fact that all nulliparous patients, who had little or no bleeding, had benefited from the Misoprostol protocol. Regardless of the therapeutic method used, no complications were recorded. The use of Misoprostol reduced the length of hospital stay, which was on average 2 hours compared to 12 hours for MVA. The cost of treatment with Misoprostol (5620 CFA francs) was 4 times lower than that of MVA (21623 CFA francs), regardless of the number of treatments.

Conclusion: Evacuation methods by Manual Intra-Uterine Aspiration or by Misoprostol are effective if the management is early and adapted. Despite the favorable prognosis, the quality of postabortion care can still be improved by upgrading providers in this area and reducing the cost of manual intrauterine aspiration.

Keywords: Spontaneous abortion; Misoprostol; Manual intrauterine suction; Postabortion care; Institute of Social Hygiene of Dakar (Senegal)

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Introduction

Abortion is a public health problem. Indeed, 15-20% of all pregnancies end in spontaneous abortion [1,2]. Complications related to abortion, whether spontaneous or induced, represent a significant proportion of maternal morbidity and mortality and a major reason for visits to maternity hospitals' emergency departments. Worldwide, one woman dies every minute from complications related to pregnancy or childbirth - more than 500,000 women per year. Eighteen to fifty percent of these deaths are related to complications of abortion, one hundred and twenty thousand of these victims are from West and Central Africa [3]. In Senegal, abortion represents 40 to 50% of the reasons for admission to maternity emergency departments and complications of abortion are the cause of 8% of maternal deaths noted in health facilities offering emergency obstetric care [4]. Access to quality Postabortion Care (PAC) services is still very limited in our countries. In order to evaluate our practice in this area, we conducted this study whose objectives were to describe the epidemiological profile of patients, to compare the efficacy of Misoprostol with that of Manual Intra-Uterine Aspiration in the management of first trimester abortion, to specify the cost of care borne by patients and to assess the use of family planning in the post-abortion period.

Patients and Methods

Type, setting, and time period of study

This was a retrospective, descriptive and analytical study conducted over a period of 6 months on a cohort of pregnant women treated for first trimester abortion at the maternity ward of the Institut Hygiène Sociale hospital in Dakar.

Patient selection criteria

The study included all pregnant women with spontaneous first-trimester abortion with a gestational age less than or equal to 14 weeks of amenorrhea (SA) managed at the Institut d'Hygiène Sociale de Dakar. Free and informed consent was required.

Data collection and analysis

Data were collected from patient records and the abortion registry. Data entry was performed using EPI INFO Version 7 software. Data analysis was done using the Statistical Package for Social Sciences (SPSS) Version 21 software. It consisted of two parts:

- a descriptive analysis: the qualitative variables were described in number, percentage and the quantitative variables in average with the standard deviation, the extremes and the median. The parameters studied were socio-demographic data, history, clinical, paraclinical and therapeutic data as well as the care received after uterine evacuation;

- and a bi-variate analysis: this consisted of a comparison between the outcome of the labour test and the other variables. The Chi-square test was used for comparison of proportions. The difference was statistically significant when the p value was strictly less than 0.05.

Results

Descriptive results

Frequency: During the study period, we collected 50 cases of spontaneous first-trimester abortion among the 1520 obstetrical admissions, representing a frequency of 3.3.

Socio-demographic characteristics of patients: Patients ranged in age from 17 to 45 years, with an average age of 30 years. The age range of 30 to 39 years is the most represented. The majority of patients were primiparous (32%). Nulliparous, pauciparous, and multiparous women represented 30%, 24%, and 14% of our study population, respectively, with an average parity of 2. All patients were married. Three patients had a medical history (6%). These were two cases of hypertension (4%) and one case of diabetes (2%). A history of abortion was reported by 16 patients (32%) (Table 1).

Table 1: Socio-demographic characteristics of patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=50).

Patient characteristics	Number (n)	Frequency (%)
Age (years)		
Less than 20	83	12
20 à 29	351	50,9
30 à 39	228	33,1
40 et plus	27	3,9
Marital status		
Married	661	96
Single	21	3
Divorced	7	1
Parity		
Primipare	282	41
Paucipare	276	40
Multipare	131	19
Residence		
Outside the South District	407	59
South District	282	41

Patient characteristics Number (n) Frequency (%)

Clinical and paraclinical data at admission

In our series, most of the patients had consulted for metrorrhagia (86%). This was often minimal metrorrhagia (68%). Other reasons for consultation were abdomino-pelvic pain (8%) and prenatal follow-up (6%) (Table 2). Most patients (56%) had a gestational age between 6 and 12 weeks of amenorrhea. Pregnancies of less than 6 weeks of amenorrhea and those of more than 12 weeks of amenorrhea represented 10% and 30% of the sample, respectively (Figure 1). We recorded six cases of cardiovascular collapse (12%). The gynecological examination revealed an open or dehiscent cervix in 32% and 56% of cases, respectively.

Table 2: Distribution according to the reason for consultation of patients managed for spontaneous first-trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=50).

Reason for consultation	Number (n)	Frequency (%)
Bleeding	43	86
Abdominal and pelvic pain	4	8
Prenatal follow-up	3	6
Total	**50**	**100**

All patients had undergone pelvic ultrasound, which revealed a terminated pregnancy (56%), retained ovarian debris (24%) or complete abortion (20%) (Figure 2). Six patients had a pathology associated with the abortion (12%). These were four cases of uterine fibroids (8%) and two cases of ovarian cyst (4%). Blood counts were performed in 27 patients and revealed 11 cases of anemia (41%), including three severe anemias (11%).

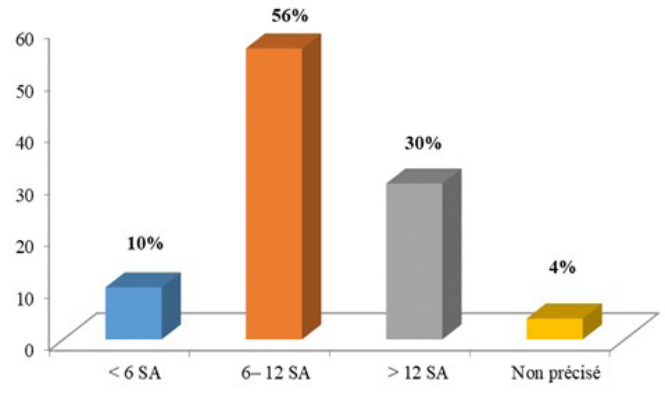

Figure 1: Distribution by pregnancy term of patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=50).

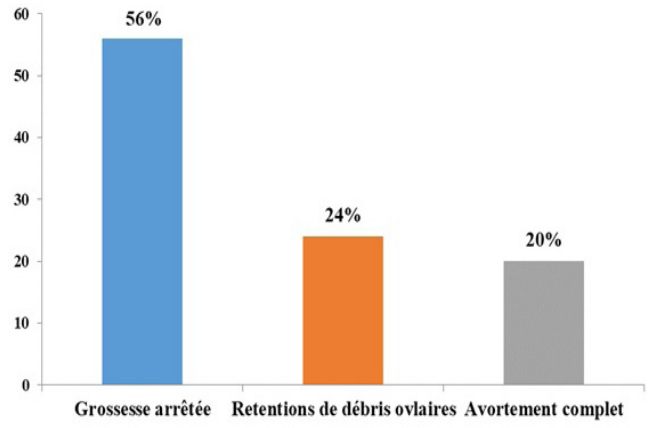

Figure 2: Distribution according to ultrasound findings among patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=50).

Therapeutic data

In our series, 21 patients (42%) had received medical treatment. Five patients (10%) had benefited from manual intrauterine aspiration after failure of medical treatment. Intrauterine manual and electrical aspiration were performed in 8 patients (16%) and 6 patients (12%) respectively. In 10 patients (20%) spontaneous abortion was complete (Table 3).

Follow-up after uterine evacuation

Most of the patients had been checked for uterine vacuity by ultrasound (92%). This revealed an empty uterus in 33 patients (66%). On the other hand, retention of ovarian debris of less than 15 mm or more than 15 mm was found in 6% and 20% of cases respectively (Figure 5). Twenty-six patients (52%) had received post-abortal contraception. The methods most frequently used were injectable progestins (18%) and progestogen pills (14%) (Figure 3).

Maternal Prognosis

Anemia was the most frequent complication (41%). We noted 6 cases of hemorrhagic shock (12%). No maternal deaths were recorded.

Cost of treatment

The cost of treatment with Misoprostol was 5,620 CFA francs. The cost was distributed as follows: 960 CFA francs for the three Misoprostol tablets, 1,537 CFA francs for the local antiseptic and 3,123 CFA francs for the uterotonic. A second course of treatment required the purchase of an additional 3 Misoprostol tablets, reducing the cost to 6,580 CFA francs. The cost of MVA treatment was 21,623 CFA francs. This amount included the surgical procedure (10,000 CFA francs), the MVA kit (7,500 CFA francs) and the antibiotics used post-abortally (1,000 CFA francs). A second aspiration required the purchase of a new kit, thus increasing the cost of MVA to 29123 CFA francs (Table 4).

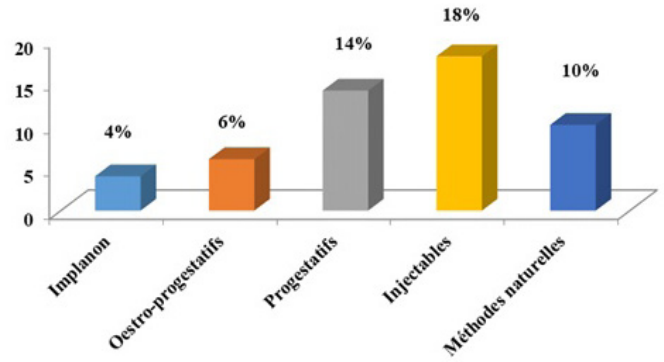

Figure 3: Distribution according to contraceptive method used by patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=26).

Table 3:

Uterine evacuation methods		Number (n)	Frequency (%)
Medical treatment	(one cure)	9	18
Medical treatment	(two cures)	12	24
Manual intrauterine suctioning (MVA) as 1st line		8	16
Electrical intrauterine suction (EIUS) in 1st line		6	12
MVA after failure of medical treatment		5	10
Complete abortion		10	20
Total		**50**	**100**

Table 4: Cost of treatment by therapeutic method and number of courses in patients managed for spontaneous first-trimester abortion at the IHS in Dakar between June 1 and December 31, 2019.

Number of cures	Cost of treatment (CFA Francs)	
	MVA	Misoprostol
1 cure	21 623	5 620
2 cures	29 123	6 580

Analytical results

Outcome of medical treatment and age of the patient: In our series, the most frequent failure rate of medical treatment was noted in patients aged between 30 and 34 years (33.3%). On the other hand, among those in whom medical treatment was successful after 2 courses, 66.6% were aged between 15 and 24 years. Thus, there was no statistically significant difference between the outcome of the medical treatment and the age of the patient. (p=0.93) (Table 5).

Outcome of medical treatment and parity: In our series, failure of medical treatment was more frequent in pauciparous women (66.6%) than in multiparous women (25%). In nulliparous and primiparous women the success rate was 100%. The use of 2 treatments was more frequent in nulliparous women (71.4%). After 1 treatment, the success rate was highest (66.6%) for primiparous women. Thus, there is a statistically significant relationship between the outcome of medical treatment and parity (p=0.01) (Table 6).

Table 5: Age and outcome of medical treatment in patients treated for first trimester spontaneous abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=26).

Age	Outcome of medical treatment			Total
	Success		Failure	
	1 cure	2 cures		
≤ 19	2 (22,2%)	6 (66,6%)	1 (11,1%)	9 (34,6%)
[20-29]	3 (60%)	1 (20%)	1 (20%)	5 (19,2%)
[30-39]	2 (53,3%)	4 (93,3%)	2 (53,3%)	8 (30,4%)
≥ 40	2 (50%)	1 (25%)	1 (25%)	4 (15,3 %)
Total	**9 (36,6%)**	**12 (46,1%)**	**5 (19,2%)**	**26 (100%)**

p=0,93

Table 6: Parity and outcome of medical treatment in patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=26).

Parity	Outcome of medical treatment			Total
	Success		Failure	
	1 cure	2 cures		
0	2 (28,5%)	5 (71,4%)	-	7 (26,9%)
[1-2]	6 (66,6%)	3 (33,3%)	-	9 (34,6%)
≥ 3	1 (80,6%)	4 (53,3%)	5 (91,6%)	10 (38,4%)
Total	**9 (34,6%)**	**12 (46,1%)**	**5 (19,2%)**	**26 (100%)**

p=0,01

Outcome of medical treatment and term of pregnancy

In our series, the failure of medical treatment was 19.2%. It was all the more frequent as the term of the pregnancy was advanced. Indeed, this rate was 25% between 6 and 12 SA, 11.1% beyond 12 SA and nil before 6 SA. Similarly, among cases of successful medical treatment, recourse to 2 treatments was more frequent for pregnancies between 6 and 12 weeks' gestation (66.7%). However, there was no statistically significant relationship between gestational age and outcome of medical treatment. (p=0.173) (Table 7).

Table 7: Gestational age and outcome of medical treatment in patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=26).

Degree of cervix opening	Outcome of medical treatment			Total
	Success		Failure	
	1 cure	2 cures		
Closed	1 (14,2%)	5 (71,4%)	1 (14,2%)	7 (26,9%)
Opened at the external orifice	7 (43,7%)	6 (37,5%)	3 (18,7%)	16 (61,5%)
Opened	1 (33,3%)	1 (33,3%)	1 (33.3%)	3 (34,6%)
Total	**9 (34,6%)**	**12 (46,1%)**	**5(19,2%)**	**26 (19,2%)**

p= 0,173

Outcome of medical treatment and degree of cervical opening

In our series, the more open the cervix, the better the outcome of medical treatment. Indeed, among the cases of successful medical treatment after a cure, 77% had an open cervix (open + dehiscent). However, there was no statistically significant relationship between treatment outcome and the degree of cervical openness (p=0.79) (Table 8).

Table 8: Degree of cervical opening and outcome of medical treatment in patients managed for spontaneous first trimester abortion at the IHS Dakar between June 1 and December 31, 2019 (N=26).

Degree of cervix opening	Outcome of medical treatment			Total
	Success		Failure	
	1 cure	2 cures		
Closed	1 (14,2%)	5 (71,4%)	1 (14,2%)	7 (26,9%)
Opened at the external orifice	7 (43,7%)	6 (37,5%)	3 (18,7%)	16 (61,5%)
Opened	1 (33,3%)	1 (33,3%)	1 (33.3%)	3 (34,6%)
Total	**9 (34,6%)**	**12 (46,1%)**	**5(19,2%)**	**26 (19,2%)**

p= 0,79

Outcome of medical treatment and ultrasound findings

In our series, failure of medical treatment was found in patients with retained ovarian debris on pelvic ultrasound (42%). On the other hand, among the cases of successful medical treatment, recourse to two courses of treatment was more frequent in patients with an arrested pregnancy on pelvic ultrasound (52.6%) without there being any statistically significant relationship between the outcome of the medical treatment and the ultrasound results (p=0.17) (Table 9).

Table 9: Ultrasound findings and outcome of medical treatment in patients managed for spontaneous first trimester abortion at the IHS in Dakar between June 1 and December 31, 2019 (N=26).

Ultrasound results	Outcome of medical treatment			Total
	Success		Failure	
	1 cure	2 cures		
Partial retention	2 (28%)	2 (28%)	3 (42%)	7 (26,9%)
Full retention	7 (36,8%)	10 (52,6%)	4 (10,5%)	2 (73%)
Total	**9 (34,6%)**	**12(46,1%)**	**5(192%)**	**26(100%)**

Discussion

Epidemiology

Frequency: The 3.3% abortion rate found in our series is lower than those reported in other studies conducted in Dakar health facilities such as the Centre Hospitalier Universitaire Aristide Le Dantec and the Roi Baudouin and Abass Ndao hospitals [5,6]. It is also below the average of 15% generally reported in the literature [6-9]. However, we noted that the incidence of spontaneous abortions was higher in our practice (100%) than in other studies conducted in Dakar which found an average of 90%. We did not find any reported induced abortions in our series [5,6]. This is probably due to a recruitment bias related to the fact that the patients concerned very rarely admit to having had an induced abortion. The increasing use of medicinal methods means that the symptomatology and complications leading to suspicion are less and less observed [5,7,10].

Epidemiological profile: The profile of patients who presented with a first trimester abortion at the Institut d'Hygiène Sociale de Dakar during the study period was that of a young woman, on average 30 years old, primiparous (32%), married (96%), without professional activity (92%) and residing in the Southern District (60%). This profile is comparable to those found in other studies conducted in Senegal. Indeed, Gueye [11], Faye [6] and Cissé [12] found an average age of 28.5 years in their respective series. Primiparous women represented 32% of our sample, while in the study by Cissé [12] primiparous women represented only 20% of the patients. Our high rate of patients coming from the Southern District, mainly from the Medina (60%), can be explained by the fact that the Institute of Social Hygiene of Dakar, in addition to its status as a referral center for the Southern District, is in fact a national referral center For Emergency Obstetric And Neonatal Care (EmONC).

Clinical and paraclinical aspects

In our series, the mean gestational age was 9 days after birth. It is comparable to that recorded by Gueye [13] and Cissé [12] which was respectively 9.5 and 10 days of gestation. The low prenatal consultation rate (6%) noted in our series is also found in the study by Cissé [12]. Indeed, in this study, only 5.7% of patients had a consultation during the first trimester. On the other hand, in 2010, a study conducted in rural Senegal showed that 28.3% of the women in the study had had an antenatal consultation in the first trimester [11]. A major effort remains to be made in our countries where the importance of prenatal surveillance is not well understood by many pregnant women. In Senegal, four prenatal consultations are recommended and the first prenatal consultation must take place before 14 weeks of amenorrhea (SA)[14].

This insufficiency noted in the follow-up of patients is also reflected by the fact that in the majority of cases (86%), the pregnancy was discovered only after metrorrhagia and/or abdomino-pelvic pain with an average gestational age of 9 SA. This was also the case in several studies of abortions [5,6,7,15]. This symptomatology was usually present several days before the consultation. This relatively long delay could be reduced by making consenting patients more aware of the practice of early consultation, which is an important prognostic factor.

Anamnestically, 32% of patients had a history of one or more abortions. These patients should have benefited from an etiological investigation and a particular follow-up, because it has been shown that a history of abortions increases the risk of recurrence. Indeed, this risk is increased by 10 to 15% after one episode of abortion, by 20 to 30% after two abortions and by 35 to 40% after three episodes [16].

On the paraclinical level, ultrasound, which is the complementary examination of reference, was performed in all patients (100%) thanks to the availability of two ultrasound machines, one of which was portable and located in the emergency room. This was not found in other studies done in our context [4, 6]. However, overall, access to ultrasound in the first trimester is still very inadequate compared to those found in developed countries [17]. Significant efforts have been made in recent years with the training of midwives and the equipping of health centers, but the cost remains relatively high, around 5,000 to 15,000 CFA francs.

Therapeutic aspects

In our series, medical treatment was the most commonly used method of uterine evacuation. Indeed, 42% of the patients benefited from medical treatment. This predominance of medical treatment over other therapeutic methods is not found in the majority of studies carried out in recent years in developing countries [5,7,18,19,20]. In addition, 13 patients had benefited from Manual Intra-Uterine Aspiration (26%), 5 of whom had failed medical treatment (10%). However, in recent years, alternatives to this method have been proposed in developed countries. These are medicinal methods represented by Misoprostol [21,22,23]. In addition to its effectiveness, medical treatment is a very simple method of use that does not require expensive equipment. Therefore, it is a technique particularly adapted to our context marked by insufficient means. Moreover, it is rarely fraught with complications and allows for a considerable reduction in the duration of hospitalization and the cost of treatment.

Our multivariate analysis allowed us to compare the epidemiological, clinical and ultrasound data of patients according to the treatment used. From this comparison, it appears that apart from parity, no other parameter really influences the choice of the method of uterine evacuation. However, the success of medical treatment after two courses in nulliparous women was the most frequent (71.4%) with a significant difference (p=0.01). This was related to the fact that all nulliparous patients, who had little or no bleeding, had benefited from the Misoprostol protocol. Regarding age and degree of cervical opening, there was no significant difference between the two groups. Similarly, the mean gestational age and the ultrasound result did not differ between the two groups.

Conclusion

Abortions in the first trimester of pregnancy are frequent in our practice with a generally favorable outcome. Medical treatment with misoprostol is as effective as manual vacuum aspiration at a lower cost.

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