# Pregnancy Loss After Infertility Management Out of Art in Kinshasa DRC

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## Abstract

**Context and Objective**: To describe profile of couple with pregnancy loss after infertility management. Pregnancy loss is a dramatic situation for patients who get pregnant after infertility treatment. It has a negative psychological and social impact on the couple. In sub-Saharian area, characterized by less equipped medical facilities (No ART) and poverty, conception after infertility management is really a challenging achievement. To lose this kind of pregnancy a real drama.

**Methods:** This study took place at university clinic of Kinshasa and Medical Edith Center from January 1th, 2001 to June 31th, 2017. It concerned 305 patients who conceived after infertility Treatment.

**Results:** Age of patients ranged from 18 to 49 years, with a mean of 30,81 ± 4,21 years old and their husbands average age 37,31 ± 5,36 years old; The types of pregnancy loss were: Early spontaneous abortion (67,82%), missed abortion (27,5%) and ectopic pregnancy (4,60%).

**Conclusion:** The pregnancy loss is a frequent problem in the management of infertility.

**Keywords:** Pregnancy Loss; Infertility Treatment

## Introduction

Pregnancy loss after infertility management is a real drama, especially in our society known pronatalist and where those pregnancies are very precious.

Infertility concerns average 15 to 20% of couples worldwide 20 to 30% in sub-Saharan area versus 7 to 9% in developed countries [1]. It impacts negatively the life with social complications like: the stigmatization, the rejection, the depression for 72 to 89% of infertile couples [1-3].

Worldwide the best way to manage infertility is by ART. Those technics need not only trained personnel but also a relevant equipment, that make it less affordable for some categories. In developed countries, many ART centers are available and affordable for many people because of medical insurance policy. In sub-Saharan setting, medical insurance is not organized for many countries people have to support infertility care by their own. In the other hand ART are rarely available with a pronatalist population. So many patients are managed in facilities out- of- IVF in our area [3]. Pregnancies got in those conditions are so precious that losing them is really dramatic.

In DRC, Mboloko., *et al.* found that 9% of patient who sought care for infertility got pregnant [3]. Furthermore, It is reported that pregnancies achieved after infertility management have a high risk of losing [5,6], Delabaere., *et al.* and Maconochie et al. found pregnancies after tubal infertility management had high risk (OR$_a$ = 2,67; IC 95% = 1,45-4,9) to be lost [7,8]; Van Der Spuy., *et al.* Kaur., *et al.* observed the risk of pregnancy loss seems higher in PCOS infertile patients (40-82%) than in the general population (8-15%) also than other causes of infertility [9,10].

It is considered Infertility and pregnancy losses are 2 facets of reproduction failure with some common etiologies: PCOS, uterine malformation and myomas [11-13].

The impact of this problem and the lack of local studies in our area of those aspects motivate the current study.

## Material and Methods

This study was a cross sectional study conducted at University Clinic of KINSHASA and MEDICAL EDITH CENTER from January 2001 to June 2017. The two centers are run with the same protocols of infertility management and almost the same health care providers.

The Study involved 305 infertile women who conceived out-of-IVF infertility management. They were divided in two groups: a case group with 93 patients who lost their pregnancies and a control group, 212 patients who delivered at term.

Patients were systematically managed as follow: anamnesis, physical examination, a clinical diagnosis and para clinical investigations: Hence a diagnosis has been made, a treatment was applied: medical treatment (antibiotics, ovulation inductors,), surgical (myomectomy, adhesiolysis, fibrinolysis, salpingectomy, intra uterine Synechia lysis).

Data's are collected from patients file and the database of infertility unit of university clinic of Kinshasa and Medical Edith center. The variables of interest were socio demographic: the age of patients and their partners, marital status, the profession of the patients and their partners; clinical: parity, gestity, previous history of spontaneous abortions and illegal abortions, BMI, infertility duration (period from the desire of the maternity and

the first consultation), the pathologies found after the two first consultations; para clinical findings: endometrial biopsy findings (Novak canula), pelvic and endovaginal ultrasound findings, Age of pregnancy at ultrasound screening, type of pregnancy loss. Laparoscopy and hysteroscopy findings were not taken in account because they were rarely performed during that period. Endometrial biopsy was systematically performed at mi luteal phase to assess the endometrium modification according to the day of the cycle and some organic lesions (specific and no specific endometritis). We considered as pregnancy loss: all interruptions of the pregnancy whatever the term [14] and the types of pregnancy loss was defined according to CNGOF 2014; an ectopic pregnancy defined as pregnancy implanted out of the uterine cavity (cornual, cervical, on the C section scar, tubal, ovarian, abdominal), early pregnancy loss or early miscarriage defined as loss before 14 weeks, missed abortion or an arrested pregnancy is a stagnation on the development of the pregnancy (stagnation of gestational sac or CRL, absence of cardiac activity) [15], as pauciparous the patients who delivered two or three viable fetus (≥28 weeks of gestation) and multiparous ones who delivered above three, for BMI (Kg/m$^2$) patients were categorized according to WHO classification [16].

Data were collected from the database of UNIVERSITY clinic infertility unit and the Centre Medical Edith and recorded in an MS access database and analyzed by stata IC 15.1. Quantitative variables were summarized as mean and standard deviation, qualitative variables as proportions. The Pearson Khi2 test was used for proportions comparison; the t student test for means comparison. The significative difference level was set at p = 0,05.

## Results

### General characteristics of patients

Age of patients was ranged from 18 to 45 years with the mean age 30.8 ± 4.21 years old. Most of them (52.30%) were 31 to 35 years old; and were married (95%), the majority were household workers or unemployed (77, 6%).

Partners average age was 37,31 ± 5,36 years old with the extreme of 25 to 59 years.; partners between 36 and 45 years were the most represented (52,89%). the profession of most of the husbands were public servant (39,3%).

| Variables | Effective (n==) | Frequency (%) | Mean age |
|---|---|---|---|
| WOMEN AGE | N = 303 | | 30,81 ± 4,21 |
| 18-25 | 34 | 11,18 | |
| 26-30 | 110 | 36,18 | |
| 31-35 | 114 | 37,50 | |
| 36-40 | 43 | 14,14 | |
| 41-45 | 2 | 0,66 | |
| MARITAL STATUS | N = 301 | | |
| Married | 286 | 95,02 | |
| Single | 7 | 2,33 | |
| Common law couple | 8 | 2,66 | |
| WOMAN OCCUPATION | N = 250 | | |
| Unemployed | 194 | 77,60% | |
| Health professional | 23 | 9,20% | |
| Teaching professional | 16 | 6,4% | |
| Legal professional | 5 | 2,0% | |
| Saleswoman | 12 | 4,80% | |
| MEN AGE | N = 242 | | 37,31 ± 5,36 |
| 25-30 | 16 | 6,61% | |
| 31-35 | 82 | 33,88% | |
| 36-45 | 128 | 52,89% | |
| 46-59 | 16 | 6,61% | |
| MEN OCCUPATION | N = 115 | | |
| Public servant | 45 | 39,13% | |
| Health professional | 18 | 15,65% | |
| Teaching professional | 10 | 8,70% | |
| Legal professional | 12 | 10,43% | |
| Salesman | 30 | 26,09% | |

**Table 1:** Socio demographic characteristics of the couple.

Most patients were nulliparous (70,57%). Half of them had a history of spontaneous abortions (49,65%) and 34% had a story of illegal abortion. The majority of patients had one year of duration of infertility (32,5%), about thirty percent (28%) were above two years; Almost half of them (45.75%) were over weighted and obese.

| Variables | Effective (n) | Frequence (%) |
|---|---|---|
| PARITY | N = 269 | |
| nulliparous | 211 | 70,57 |
| Primiparous | 60 | 20,07 |
| Pauciparous | 25 | 8,36 |
| multiparous | 3 | 1,00 |
| GESTITY | N = 291 | |
| nulligravida | 110 | 37,8 |
| primigravida | 90 | 30,93 |

| multigravida | 91 | 31,27 |
| --- | --- | --- |
| HISTORY OF ABORTION | | |
| SPONTANOUS | N = 288 | |
| 0 | 143 | 49 |
| 1 | 84 | 29,17 |
| 2 | 42 | 14,58 |
| ≥3 | 19 | 6,60 |
| INDUCED | N = 251 | |
| 0 | 165 | 65,74 |
| 1 | 50 | 19,92 |
| 2 | 28 | 11,16 |
| ≥3 | 8 | 3,19 |
| BMI | N = 188 | |
| <18,5 | 5 | 2,66 |
| 18,5-24,9 | 96 | 51,06 |
| 25-29,9 | 56 | 29,79 |
| ≥30 | 30 | 15,96 |
| INFERTILITY DURATION (YEAR) | N = 240 | |
| 1 | 78 | 32,5 |
| 2 | 58 | 24,17 |
| 3-5 | 69 | 28,75 |
| >5 | 35 | 14,58 |

**Table 2:** Clinical characteristics of women.

46.67% of patients had normal tubes permeability at hysterosalpingography; 35% had bilateral blocked tubes.

At endometrial biopsy most of patients (65.2%) patients had functional anomalies; About 29% patients had myomas at ultrasound scan; oligoasthenozoospermia was the anomaly most found in men (60%).

### Pregnancies outcomes

Among 305 patients pregnant, 212(69,51%) brought their pregnancies to term and 93 (30,49%) lost before term:

| Variables | Effective | Frequency % |
| --- | --- | --- |
| HSG | N = 180 | |
| Normal | 84 | 46,67 |
| Unilateral tubal blockage | 18 | 10,00 |
| Bilateral tubal blockage | 63 | 35,00 |
| Pelvic adhesions | 5 | 2,78 |
| Uterine synechia | 10 | 5,56 |
| ENDOMETRIAL BIOPSY | N = 121 | |
| Normal | 30 | 24,79 |
| Functional abnormality | 79 | 65,20 |
| Organic abnormality | 12 | 9,84 |
| ULTRASOUND | N = 232 | |
| Normal | 98 | 42,24 |
| Fibroids | 67 | 28,88 |
| Ovarian cyst | 25 | 10,78 |
| PCOS | 42 | 18,10 |
| SPERMOGRAM | N = 115 | |
| Normozoospermia | 22 | 21,09 |
| Oligozoospermia | 17 | 14,86 |
| Asthenozoospermia | 60 | 52 |
| Leucospermia | 16 | 11,56 |

**Table 3:** Paraclinical characteristics of women and men.

| Variable | Effective=305 | Frequency |
| --- | --- | --- |
| AT TERM | 212 | 69,51 |
| LOSS | N = 93 | |
| Early miscarriage | 63 | 67,74 |
| Missed abortion | 26 | 27,95 |
| Ectopic pregnancy | 4 | 4,30 |

**Table 4**: Pregnancy outcomes.

- Early pregnancy loss or early miscarriage (67.82%),
- Missed abortion or arrested pregnancy (27.59%) and
- Ectopic pregnancy (4,60%).

### Discussion

### General characteristics

The mean age of patients was 30.81 ± 4, 21 and the majority of them (52.3%) were in 31-35 years old group. The partners

average age was 37,3 ± 5,36 years old; those findings were close to the Mboloko., *et al*. 2019 in the same area [3,4]. The patients were relatively aged and nulliparous (70.5%). It is known that advanced age is associated with some pathologies like obesity, myomas and endometriosis. Furthermore, it is, associated with the risk of non-desired pregnancies and illegal abortion. A third of Patients (34%) had a history of illegal abortion, most of the time, performed in non-secured conditions in our area, leading to many reproductive consequences: tubal blockage, intra uterine adhesions, endometritis [17,18]. At HSG, almost half (45%) of patients had tubal occlusion and nonspecific endometritis at endometrial biopsy; findings linked to genital sexually transmitted infection [19]. In the other hand, almost half (45.75%) were obese and about thirty percent (28.8%) had myomas and ten percent (9.84%) nonspecific endometritis. All of those conditions are among the risk factors of pregnancy loss. Metwally and lashen [20,21] have found an increasing risk of pregnancy loss for patients with overweight > 25 Kg/m$^2$, Maconochie found an increasing risk of pregnancy loss in thin women [8]. Tubal obstruction were found in 45% of cases, the functional endometrial anomalies were found in 65% of patients.

### Frequency of pregnancy loss

In the current study, almost a third of patients 30,49% (93 cases) had lost their pregnancies. That is more frequent than in general population where the incidence of miscarriage is estimated at 8 to 15% of population [23] and 2% [24] for ectopic pregnancy. Our frequency of pregnancy loss is less than hakim and coulam's (79%) among infertile patients. The difference is due to the methodology, we considered only patients of clinical pregnancy, COULAM and HAKIM included also the cases of biological pregnancy.

We have identified 3 types of pregnancy losses: early miscarriage (67,82%), missed abortion (27,59%), ectopic pregnancy (4,60%). The first two are mainly due to genetics or chromosomic origin [7,25-28]. This observation can be explained by the advanced age of patients and their partners. Ended, control the risk of pregnancy loss increased with the age of patients or his partner age [7,29], the increasing of age is associated with the high risk of aneuploidy leading to early pregnancy loss in term of early miscarriage and missed abortion [28-30].

The ectopic pregnancy are the consequence of high genital tract infection caused by chlamydia trachomatis more frequent in our area and which is the main causal factor of tubal et peritoneal blockage [19,24,31]. In the current study 47, 8% of patients had tubal obstruction at HSG and nonspecific endometritis, those lesions are generally associated with infertility and pregnancy loss [19,31].

## Conclusion

In conclusion, the pregnancy loss is a frequent problem in the management of infertility in our area.

## Conflicts of Interests

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

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