

**PROBLEMS OF MANAGEMENT OF INFERTILITY IN SUB SAHARAN AFRICA: THE
EXAMPLE OF SENEGAL**

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Article Received on 27/03/2017

Article Revised on 18/04/2017

Article Accepted on 08/05/2017

ABSTRACT

Objectives: to determine the problem of the management of infertility of the couple in Senegal. **Materials and methods:** retrospective study carried out in the department of Gynecology and Obstetrics of the National Hospital Center of Pikine. All cases of infertility of the couple during the period from January to December 2014 had been collected 146 cases. The data was collected from the medical records of the patients seen on an outpatient basis by completing a data collection form for each patient. **Results:** the prevalence of infertility in our structure was 14%; The mean age was 32 ± 1 years (18 and 46 years). Primary infertility accounted for 56.2% of cases. The duration of infertility greater than or equal to 5 years concerned 51.3% of women. The female pathologies found were dominated by uterine abnormalities that were in the foreground (41.8), followed by tubal and ovarian abnormalities in 26.7% each. The spermogram was only performed in 24 cases. Medical treatment was dominated by antibiotic therapy (49.3%); Surgical treatment was dominated by laparoscopy (13%) and myomectomy in 6.8% of cases. There were 15 cases of post-treatment pregnancy (10.3%); 119 treatment and / or sight loss (81.5%) and 12 patients who were still receiving treatment (8.2%). **Conclusion:** There is a real information problem about infertility and a lack of participation and involvement of men in the diagnostic procedure. The etiologies are dominated by uterine abnormalities and treatment must be based on the prevention of infections.

KEYWORDS: Infertility, assisted reproductive technology, Leiomyomas.

INTRODUCTION

Globally speaking, infertility is still a real plague that triggers huge interest in the medical community. Its prevalence is higher in Africa than in the countries of the North because on top of classical etiologies, the infectious causes are more frequent. Infertility rates in sub-Saharan Africa are among the highest in the world; 15 to 30% of couples are reported being affected by this problem, compared to 5 to 10% of couples in developed countries.^[1]

Despite the relevance of the issue, a current public health problem, infertility is hardly studied in Senegal. Bearing this fact in mind, we have decided to focus on its etiological and therapeutic aspects. Our main purpose in this study was to determine how to manage infertile couples in Dakar, and more especially at the National Hospital of Pikine in 2014. The specific objectives were to determine the prevalence of infertility, study the diagnostic approach and identify the obstacles to its management.

PATIENTS AND METHODOLOGY

This is a retrospective study carried out in the department of Gynecology and Obstetrics of the National Hospital Center (CHN) of Pikine. All data relating to infertility of the couple, from January to December 2014, were collated. The diagnosis of infertility relied on the following criteria: regular shared life, complete and regular sexual intercourse (3 times a week), no contraception and absence of pregnancy for at least one year. The patient or the couple were excluded from the study if one of these criteria were missing or in case of refusal to participate. Data collection was based on the medical records of the patients concerned. The parameters studied were the following: socio-cultural characteristics, clinical profile, results of paraclinical explorations, treatment provided, and whether or not pregnancy occurred. Sometimes a phone call was needed to complete the information. The data were entered and analyzed using the SPSS17.0 software. The descriptive analysis was used for the various parameters by determining the percentages or the mean scores. The Student's t-test was performed for averages and percentages, and the χ^2 or Fischer test for categorical

variable comparisons. Fischer's exact test was used when the number in some groups was less than 5. The significance level was $P = 0.05$.

OUTCOMES

Out of a total of 1062 incoming patients, 212 wanted to become pregnant. 146 patients met the criteria for inclusion. Sixty-six patients were not involved in the study due to irregular cohabitation. Thus, the prevalence of infertility was 14% in our structure. The mean age was 32 ± 1 years with extremes of 18 and 46 years. Infertility was primary in 56.2% and secondary in 43.8% of cases. Duration of infertility greater than or equal to 5 years was more represented in our study (51.3%), with extremes of 1 and 20 years. 64.4% of couples were monogamous. A history of pelvic surgery was observed in 20% of cases (Table 1). Physical examination helped us find a pelvic mass in 17.8% of the cases. Pelvic ultrasound and vaginal specimen for the purpose of finding an infection were systematically prescribed to the patients. These were conducted in 77.4% and 61.6% respectively. A hysterosalpingography was prescribed in 41.7% of cases, and semen analysis in 16.4% of the cases. Several patients disappeared after surgery; 68.5% of the patients did not undergo the spermogram test prescribed, and 37% had hysterosalpingography. The hormonal examination (FSH, LH and steroid hormones) was not really required to our patients.

These first-line investigations evidenced vaginal candidiasis (22.6%), positive chlamydial serology (15.1%), uterine myomatosis (31.5%), and ovarian disease (26.1%). Tubal obstruction was mostly found in 26.7% of 61 patients who took HSG. Other disorders were also observed (19.2%), i.e. hydrosalpinx (7.5%), uterine myomatosis (3.4%) and synechia (2.1%). For financial reasons, 21% of the patients had not taken a hysterosalpingography, while 37.3% of them were nowhere to be found after the prescription. As for the semen analysis, it was taken only by 16.4% (14 cases) of the spouses, and were deemed to have recovered in 6 cases. Reduced sperm motility was the most common abnormality (2.7%). All these additional examinations revealed impairments in the uterine cavity mostly (41.8% of cases); tubal abnormalities in 26.7% of cases; and the ovulatory types in 26.7% (Table 2). Medical treatment was mainly used with a predominance of antibiotic therapy (49.3%); laparoscopy (13%) was the most common surgical treatment, followed by myomectomy in 6.8% of cases. In the first six-month follow-up, 15 patients got pregnant, accounting for 10.3% of the cases. The treatment was much more successful with young women (28.6% in the under 25 compared to 4.2% in those aged over 35). The length of infertility, and the primary or secondary type of infertility, did not contribute significantly to the successful treatment outcome. Discontinuation of therapy and/or patients being lost to follow-up were noted in 119 cases or 81.5% (Table 3).

Table 1: General characteristics.

Characteristics	Number N=146	Percentage
Age		
< 25 ans	13	8.9
[25 - 34 ans]	76	52.1
≥ 35 ans	57	39
Anterior pregnancy		
Yes	64	43.8
No	82	56.2
Infertility duration		
≤ 5 years	71	48.7
≥ 5 years	75	51.3
Marital status		
Monogamy	94	64.4
Polygamy	52	35.6
Paternity of spouse		
Yes	110	75.3
No	36	24.7
History of pelvic surgery		
Yes	29	20
No	117	80

Table 2: Etiology of infertility.

	Number	Percentage
Anomalies of the uterine cavity	61	41.8%
Uterine myomas	46	31.5%
Synechia	3	2.1%
Adenomyosis	3	2.1%
Hypoplasia of the uterus	3	2.1%
Endometrial atrophy	3	2.1%
Endocavitary polyp	2	1.4%
Endometrial hypertrophy	1	0.7%
Tubal anomalies	39	26.7%
Tubal obstruction	28	19.2%
Hydrosalpinx	11	7.5%
Ovulation disorders	39	26.7%
Ovarian dystrophy	22	15.1%
Ovarian cysts	16	11%
Ovarian insufficiency	1	0.7%
No anomalie	42	28.8%

Table 3: Treatment of infertility.

	Number	Percentage
Surgical treatment		
Tubal plasty / laparoscopy	20	13.7
Myomectomy / laparotomy	10	6.8
Resection polyp / hysteroscopy	5	3.4
Cystectomy / laparotomy	2	1.4
Ovarian Drilling	1	0.7
Medical treatment		
Antibiotic therapy	86	58.9
Hormonal treatment	56	38.3
Results of treatment		
Pregnancy after treatment	15	10.3%
Stop processing / Lost view	119	81.5%
Ongoing treatment	12	8.2%

DISCUSSION

The prevalence of infertility is very high in the world; about 80 million people are affected. The prevalence range in our structure, 10 - 15%, is similar to the figures generally reported in the population.^[2] In 2007, it was estimated between 10% and 15% in the United States according to Alaina.^[3] A study by Nana [55] in Cameroon found a higher rate (20% to 30%); this was associated with increased upper genital tract infections. The mean age of the patients in our series is also close to the statistics in the studies by Gandji in Cotonou and by Faye-Diémé in Senegal. They reported an average age of 33.7 years and 34 years, respectively.^[4,1]

Most authors found that there were many more cases of secondary than primary infertility,^[5,6] which is not the case in our study. The average duration of infertility (10.5 years) proved that consultations were often late, as claimed by some African authors^[7,8] Beyond 5 years, the prognosis of infertility is often poor. Regarding the etiological aspects, uterine abnormalities were more accessible, easily diagnosed because of the availability of ultrasounds in our structures. We should bear in mind that the etiologies found in our series were uterine in 41.8%, tubal and ovarian in 26.7% respectively. These causes of infertility in our study are identical to those described in the literature^[9,10,11] sometimes in different proportions however. Thus, according to Imaoka in Japan^[10] the causes of infertility are firstly ovarian (30-40%), tubal (30-40%), then uterine (10-15%) and finally peritoneal (<5%). According to Jose-Miller, the causes are ovarian (40%), tubal (30%) and uterine (18%) in the United States.^[11] Several factors interfered with the adequate management of the couple's infertility in our study:

- A misconception about the couple's fertility: women came to consult for infertility while their conjugal life was about one month in a year. Male migration to Europe is the main cause of this situation.
- The tendency in feminizing infertility in our areas is another obstacle to the treatment: the woman most

often comes alone for consultation, unlike in the western countries where she is always accompanied by her husband. In our structure, only 10% of women came to consultation with their husbands; the latter often refused to be submitted to a semen analysis. This can be explained by the myth of woman's responsibility for infertility that is still prevailing in Africa; infertility is seen as a real tragedy where the ongoing culprit, though not always justified, happens to be the woman. This generally urges the husband to be polygamous. There are also constraints related to the spermogram test that some men hardly accept.

- The cost of treatment is not affordable for many couples, especially since the care is generally at their own expense. This is the main cause of treatment cessation and patient defaulting after paraclinical exploration or medically assisted procreation (MAP) has been prescribed. It should also be remembered that the MAP technical platform is not yet available in our public facilities.

CONCLUSION

The low commitment of men and high cost of the diagnostic and the therapeutic methods are key factors in dealing with infertility of the couple. Solutions to these requirements are a matter of health policy and should foster men's involvement in the monitoring, establish a straightforward and affordable protocol for infertility exploration which is suitable for the socio-economic conditions of our country, and finally, facilitate public and private partnership for the MAP method.

CONFLICTS OF INTEREST

The authors have not declared any conflict of interest.

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