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Original Research Article

Results of the multicentric management of infertility couples in Abidjan (Cote d'Ivoire)

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ABSTRACT

Background: The management of infertile couples has seen many advances characterized today by the different techniques of medically assisted procreation (MAP) that are increasingly practiced in the developed countries. The objective of present study is to describe our experience of multicentric management of infertile couples in our ivorian context.

Methods: This is a retrospective and cohort study with descriptive purpose over 210 couples treated for infertility in the gynecology services of the University and Hospital Center of Treichville and a private clinic in Abidjan, from 1st February 2013 to 31st January 2017 (48 months).

Results: The frequency of infertility was 14%, and the average age was 34.3 years for women and 43.2 years for men. The etiologies were found in 199 couples (94.8%), particularly in 136 women and 113 men. The main causes were uterine (58.1%), and hormonal (26.5%) in women and of infectious origin in men (79.7%). The majority of the patients (113 women and 97 men) received an etiologic treatment, dominated by myomectomy in women (67 patients) and targeted antibiotherapy in men (84.5%). Moreover 113 couples (53.8%) received a medically assisted procreation. After the management 110 couples (52.4%) got pregnant.

Conclusions: The multicenter management has enabled infertile couples to have access to modern methods in their care.

Keywords: Etiologies, Infertility couple, Medically assisted procreation, Treatment

INTRODUCTION

The management of infertile couples has seen many advances characterized today by the different techniques of medically assisted procreation (MAP) that are increasingly practiced in the developed countries. But in our developing countries, where infertility affects 10 to 20% of couples, their management often raises problems related to the inadequacy of specialists and limited technical facilities.¹ In Côte d'Ivoire, the first MAP centers are less than ten (10) years old and are mostly

private establishments. Thus, couples followed for infertility in our public centers like the gynecology service of the University and Hospital Center of Treichville, are often oriented to private establishments to optimize their management. This work aims to describe our experience of the multicentric management of infertile couples in our ivorian context.

METHODS

This was a retrospective and cohort study with descriptive purpose conducted from 1st February 2013 to

31st January 2017 (48 months) on couples followed for infertility in the gynecology services of the University and Hospital Center of Treichville (CHUT) and a private clinic in our country (in Abidjan).

We included in the study all couples who, during the study period, were treated for infertility and monitored over the 2 years following the date of their authorization to contract a pregnancy. In the follow up of the patients, the pregnancy diagnosis was conducted on the basis of biological test or pelvic ultra sound.

The parameters studied were the epidemiological, etiological and therapeutic characteristics and the results of this management.

Data were collected on a survey sheet from patients records, follow-up sheets and telephone calls. The analyzes were carried out using the software EPI INFO version 2000, Word and Excel.

RESULTS

Epidemiological characteristics

Frequency

We recorded 2652 consultations during the study period including 372 cases of infertility an incidence of 14%. Out of these 372 infertile couples, 210 met our inclusion criteria and were therefore selected for this study.

Age of couples

The average age of women was 34.3 years (extreme: 19 to 43 years) and among these, 73.3% were between 25 and 35 years of age.

In males, the average age was 43.2 years (extreme: 25 to 63 years) and the age group from 40 to 60 years was 89%.

Etiologies

Origin of the couple's infertility

The cause of the infertility was found in 199 couples (94.8%) and was of female origin in 86 couples (41%), male in 63 couples (30%), mixed in 50 couples (23.8%) and unexplained in 11 couples (5.2%). Thus, individually the cause of infertility was found in 136 women (64.7% of women) and 113 men (53.8% of men).

Etiologies of female infertility

The abnormalities found were of uterine origin in 79 patients (58.1%), hormonal in 36 patients (26.5%), and tubal in 26 patients (19.1%).

Table 1: Distribution of women according to the causes of infertility.

Causes	Population	Frequency (%)
Tuboperitoneal	24	17.6
Uterines		
Fibroids	51	37.5
Synechiae	10	7.4
Polyps	3	2.2
Endometriosis	7	5.1
Hormonal		
Ovarian	21	15.4
Hyperprolactinemia	5	3.7
Mixed	5	3.7
Multiples causes		
Uterines+tubal	5	3.7
Uterines+Hormonal	3	2.2
Tubal+Hormonal	2	1.5
Total	136	100

Etiologies of men infertility

The main abnormalities found with spermograms were oligoasthenospermia (49.5%), severe oligospermia (18.3%) and azoospermia (8.8%). The causes of these abnormalities were: infection in 90 patients (79.7%), varicoceles in 14 patients (12.4%), cryptorchidia in 5 patients (4.4%), and hormonal disorders in 4 patients (3.5%). Concerning the infectious causes, the main germs identified were Chlamydiae Trachomatis (41.6%) and Ureoplasma (20.4%).

Treatment

Treatment of women having an identified cause of infertility

Table 2: Distribution of women having an identified cause of infertility according to the type of treatment performed.

Type of treatment	Population	Frequency
Etiological treatment		
Surgery	83	61%
Drug treatment	26	19.1%
Surgery+drug treatment	4	2.9%
MAP in 1st intention	23	17%
Total	136	100%

Type of treatment performed.

- Among 136 women having an identified cause of infertility, 113 patients (83%) had an etiological treatment, and 23 patients had MAP in first intention (17%). The etiological drug treatments were conducted in isolated or associated ways. Thus Bromocriptin was used in 42% of women, and Progesteron in 58%, Clomifen citrate in 28% and Gonadotrophin in 12%.

- As for the other types of treatment undertaken (Surgery and MAP), their modality was multiple according to the affection

Type of surgery performed in cause.

- Among the 113 patients who had an etiological treatment, surgery was performed in 87 patients (77%), by endoscopy in 25 patients (28.7%) and by laparotomy in 59 patients. During the surgery, myomectomy was performed in 67 patients (87%).

Table 3: Distribution of patients according to the type of surgical treatment.

Tracts	Type of surgery	Population	Frequency
Laparoscopy	Tubal Plastics	5	5.7%
	Myomectomy	11	12.7%
	Adhesiolysis	2	2.3%
Laparotomy	Myomectomy	56	64.5%
	Cystectomy	3	3.4%
Hysteroscopy	Cure of synechia	4	4.6%
	Polyp ablation	3	3.4%
Classical curettage	Cure of synechiae	3	3.4%
Total		87	100%

Treatment of men having an identified cause of infertility

The drug treatments undertaken were: antibiotic therapy (82 patients), bromocriptine (2 patients), and testosterone (2 patients). As for surgical treatments, they consisted of 11 varicocele cures.

Table 4: Distribution of men according to the type of treatment.

Type of Treatment	Population	Frequency
Etiological treatment		
Surgical	11	9.7%
Drug treatment	86	76.1%
MAP in 1st intention	16	14.2%
Total	113	100%

Treatment of couples with unexplained infertility

All the 11 couples who had an unexplained infertility received an ovarian stimulation in 1st Intention. Secondly 7 couples had a MAP in 2nd intention.

The different types of MAP practiced in the couples

Finally, out of 210 couples treated, the MAP was practiced in 113 couples (53.8%), and 97 couples had a classical treatment without MAP (46.2%).

Table 5: Distribution of couples according to the type of MAP carried out.

Type of MAP in the couple	Population	Frequency (%)
In 1st intention		
Stimulation of ovulation	12	29.3
Insemination	9	22.0
IVF	20	48.7
Total	41	100
In 2nd intention		
Stimulation of ovulation	4	4.5
Insemination	6	6.8
IVF	78	88.7
Total	88	100

Concerning the MAP, the insemination was practiced in 15 couples (13.3%) and IVF in 98 couples (86.7%). These IVF were performed classically in 66 couples (67.3%) and with ICSI in 32 patients (32.7%). Furthermore, during the MAP, 49 couples (43.4%) benefited from donation of gamete.

Outcome of treatment

After different treatments of the 210 couples, 110 couples got pregnant (52.4%) including 67 after classical treatment and 43 after a MAP (38.1% of the couples who had a MAP).

DISCUSSION

Epidemiological characteristics

Frequency of infertility

The frequency of infertility in our series was 14%. It was close to those found by various authors in Africa and in developed countries 10 to 20%.¹⁻³ This finding reflects the extent of infertility in our developing countries often masked by rapid population growth.

The age of the women

The average age was 34.3 years (extreme 19-43 years) closer to those found by Boudhraa in Tunisia (33.3 years) and Bang in Gabon (34.9 years).^{4,5} Furthermore, the majority of our patients were aged between 25 and 35 years (73.3%), being thus in the ideal time to resolve their infertility problem because beyond this time we enter periods of pregnancy in older women. Indeed, pregnancy after 35 years become scarce and more exposed to complications.^{2,6,7}

The age of men

Men can be fertile from puberty until 90 years, even 100 years.⁸ The age of men in our population was not a real obstacle to their fertility because 89% of the spouses

were between 40 and 60 years of age (extreme 25-63 years). Nevertheless, it was important to solve the infertility problems of these patients at an age when they still have all their vigor to properly care for their offspring.

Causes of infertility

Causes of infertility in women

Etiologies of infertility in our population was dominated by uterine abnormalities (58.1%), mainly fibroids. Gandji also found uterine factors as the leading cause of infertility in women in his study.⁹ In addition, fibroids are known for their high frequency among black women.^{9,10} They become a source of infertility depending on their location and size. In our poor countries without social security, it is still common to encounter patients with voluminous fibroids known as historical.

Finally, in our series, hormonal abnormalities (26.5%) and tubal (19.1%) were also major causes of infertility after the fibroids.

Causes of infertility in men

The abnormalities of the spermogram were dominated by oligoasthenospermia in our population (49.5%), with the main causes being infections (79.7%) to Chlamydia trachomatis (41.6%).

Several authors have also observed the predominance of oligoasthenospermia in spermogram disorders, and infection in the causes of male infertility.¹¹⁻¹⁴ Chlamydia trachomatis infection in particular have the distinction of being asymptomatic with consequences on fertility, even in a frozen sperm.¹⁴

Also in our study, many non-infectious causes of infertility were found (20.3%). They were mainly due to varicocele (12.4%), cryptorchidism (4.4%) and hormonal disorders (3.5%). These non-infectious causes are often described in the literature and Audebert reported in his series a high rate of varicocele (29%) in the causes of male infertility.^{15,16} These pathologies occur mostly in the childhood of patients, justifying a prenuptial assessment before any life of couple where the partners intend to make a child.

Treatment characteristics

Etiological treatment in women

The etiological management of female infertility in our population was essentially surgical (77%). And myomectomies were the most frequently used (77%), mostly by laparotomy (64.5%). The predominance of laparotomy in myomectomies in our context can be explained for two reasons: patients often consult late in

stages where laparoscopy no longer has a place, and the scarcity of structures with laparoscopic columns.

Nevertheless, endoscopic surgery was performed in some of our patients (28.7%). These endoscopic surgeries were all carried out in the private structure of our study, since the CHUT does not have an endoscopic column. This collaboration between the public and private sectors allows our patients to benefit from modern methods in their care. As for drug treatments, we used hormone therapy in the majority of cases, conducted in isolation or association according to the objectives.

Etiological treatment in men

The majority of men in our series were treated with medication (76.1%), particularly targeted antibiotic therapy (82 patients). However, surgery was performed in 11 men for varicocele cures. The surgical treatment of mechanical obstacles in the treatment of male infertility has often been reported in Africa.^{12,17}

Treatment of couples by MAP

In our series, the majority of couples (53.8%) received a MAP either in 1st intention (29 couples), or in 2nd intention after failure of a first etiological treatment (84 patients). The different MAP techniques were used in the private structure: inseminations (15 couples), IVF (98 couples), gametes donations (49 couples). In our country, the practice of the MAP is recent, dating less than 10 years, and is done in private institutions. Similarly, in Africa, various publications have reported the recent practice of MAP in some countries, which also takes place in private centers in general.^{12,17}

Outcome of treatment

After the various treatments, a pregnancy occurred in the majority of the couples of our series (52.4%). The success rates after MAP were 38.1% overall. Several infertility specialists from the third world have reported encouraging rates of pregnancy after infertility treatment of the couple. N'Doye in Senegal and Bouchra in Morocco, reported 20 to 24% of pregnancy after management of the infertility of the couple by MAP.^{18,19} In developed countries with much more experience in MAP practice, success rates are relatively higher: 46% to 48%.⁸

CONCLUSION

This study showed that couple infertility was common in our context. The multicentric approach allowed a modern and optimal management of our couples. Thus, the MAP techniques were performed in the majority of patients leading to satisfactory success rates.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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