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Research Article

Epidemiology and Treatment of Marital Infertility in the Gynecology and Obstetrics Department of Point G BAMAKO / MALI About 535

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Abstract

Purpose: To study the marital infertility in the obstetrics and gynecology service of the C.H.U of Point "G" Bamako / Mali.

Patients and Methods: It was a cross-sectional study that took place in the gynecology department of CHU Point G from June 1, 2013 to May 31, 2016.On one hand were included in our study, all women in union or in couples received for consultations at least 2 times in which primary or secondary infertility has been diagnosed. On the other hand, were excluded all couples who carried out only a single gynecological consultation with or without a check-up, those who did not follow-up and couples whose treatments were not completed. The data were entered and analyzed using SPSS 12.0 software. The statistical test used was that of Chi2, the statistical significance threshold was fixed at 5%.

Results: During the study period, we recorded 8,295 outpatient consultations including 1,050 cases of marital infertility among which 535 cases of infertility were retained for this study making an overall frequency of 12.7%.The female infertility was the most common with 62.8% followed by the male infertility 13.5%; the mixed infertility represented 12.9% of couples. At the end, for 10.8% of infertility cases no cause has been found. The risk factors for marital infertility were represented by the age, the pregnancy rate decreased from 35 years old with Chi-square: 16.08; P: 0.00; the type of infertility, the pregnancy rate was lower in the case of primary infertility with Chi-square: 9.72; P: 0.02; the duration of infertility, the longer the duration of infertility was, the less pregnancy was obtained with Chi-square: 24.04; P: 0.00. The causes of female infertility found in this work were: tubal abnormalities in 216 cases (40.4%), hormonal disorders, 122 cases (22.8%), uterine abnormalities in 69 cases (12.9%). No cause could be identified for 128 patients (23.9%). The causes of male infertility were sperm abnormalities, 26.35% (141 cases), the aftermaths of STIs, 11.8%. (63 cases) and testicular and penis abnormalities, 11.40% (61 cases). However in more than 50% of the cases (270 cases) no cause of male infertility has been found. The treatment was purely medical in 75.5% (383/535), a combination of surgery and medical treatment in 3.7% (20/535) and surgery alone in 24.6% (132/535). The pregnancy rate for these different treatment options was 19.32% (74/383) respectively; 10% (2/20) and 19.69% (26/132).

Conclusion: Marital infertility is a public health problem with the rise of sexually transmitted infections.

Keywords: Marital Infertility; TPC

Introduction

An infertile couple is the one which has not conceived a birth after 1 year of regular sexual intercourse using no method of control [1]. The prevalence of marital infertility is estimated between 12.5 to 32.5% of couples in worldwide according to international statistics [1]. The female responsibility is estimated at 34%, and

male responsibility is: 20% while in 38% of the cases it is a mixed cause. At the end, 8% of infertility cases are unexplained (idiopathic). The causes of female infertility in western countries are ovulation disorders (32%), tubal obstruction (26%), endometriosis (4%), and abnormality of the cervical mucus (4%), hyperprolactinemia (4%). As far as men are concerned, they are represented by: oligo-astheno-teratospermia OATS (21%), asthenospermia (17%), teratospermia (10%), azoospermia (9%) including 6% of secretory azoospermia, theoligospermiarepresents (2%) [2,3,4]. In contrast, 19.32% of couples in Africa are affected by infertility and 65 to 85% have infectious origins [3]. The risk factors for these infections are multiple and can be socio-cultural, economic and related to health [5,6]. These are mainly: unassisted deliveries, abortions performed in precarious conditions, sexually transmitted infections, early sexual intercourse, multiplicity of sexual partners, prostitution, polygamy, promiscuity and poor lifestyles [5,6]. This different epidemiological aspect calls for different treatments strategies. No work has been published up to now on marital infertility in Mali. We are issuing this work at CHU Point G in order to improve this insufficiency. Our objectives were to determine the frequency of marital infertility, to specify the causes and to report our therapeutic strategies.

Patients and Methods

Our study took place in the obstetrics and gynecology department of the CHU Point "G". This was a cross-sectional study, from 01 June 2013 to 31 May 2016. The study focused on a population of couples who consulted the department for infertility. Our study included all the couples that were received for consultations at least 2 times and whose primary or secondary infertility diagnosis was retained and have benefited a complete treatment. The age of these women was included between 18 and 42 years old. We excluded: the couples who carried out only a single gynecological consultation with or without a check-up, women whose age is under 18 or over 42, those whose treatments have not been completed. That being so, during the four years, the recruitment has focused on 1050 infertility cases among which 535 were selected and 515 excluded because they did not meet the inclusion criteria. As far as women are concerned, the additional examinations were directed after the clinical examination on the presumed diagnostic basis. Among the additional examinations requested, we have the HSG which was performed after menstruations in the absence of genital infections. The hormonal dosages if indicated, were made on the 3rd day of menstruations (FSH, LH, ESTRADIOL) and on the 22nd day of menstruations (Progesterone) [7]. The ultrasound scans were done on the 3rd day of menstruations on behalf of the antral follicles and depending on the result of the treatment. They make it possible to study the utero-annexory status. The Huhner's Test (Post Coital Test) was done according to the rules set by the W.H.O. [1] Then after that, men were called to consultations for a clinical examination and the male infertility check-ups were issued according to the result of the clinical examination. Among others the spermogram and the spermocytogram were almost systematic and their sampling respected the rules defined by the W.H.O manual [1]. The following parameters were analyzed: volume, PH, concentration, consistency, total count, vitality, cytology, mobility, round cells, polymorphonuclear cells and the spermocytogram according to Kruger; other additional examinations were requested depending on the diagnostic orientation: hormonal dosages, the ultrasound scans of the male genital organs. At the end of the clinical examination and the complementary examinations we decided either the medical treatment only or the surgical treatment alone or both in the couple. The variables we studied were : the frequency, the age, the marital status, the antecedents, the type of infertility, the duration of infertility, the additional examinations, the causes, the treatments, the result of the treatment, with as source of collecting information: an individual form of investigation addressed to the couples, the registers of external consultations, operating reports, gynecological consultation files. The data were entered and analyzed using SPSS 12.0 software. The statistical test used was that of Chi-square, the threshold of statistical significance was set at 5%.

Ethical aspects

Data confidentiality has been guaranteed. The names of patients do not appear in any document relating to the results of this study. This work is intended to be operational research. Thus, the results obtained will be made available to all stakeholders in the field of infertility health and this in the interest of patients. After explanation, a consent form was sent to the couples asking them if they agreed to sign.

Resultats

Frequencies

During the study period 8,295 gynecological consultations were carried out in our department including 1,050 cases of marital infertility. In total, based on the inclusion criteria, 535 (6.4%) couples

were selected; 515 (6.2%) couples were excluded either for incomplete file or for unfound file. The female infertility was the most common with 62.8% followed by male infertility 13.5%; and the mixed infertility affected 12.9% of couples. At the end, for 10.8% of infertility cases no cause has been found.

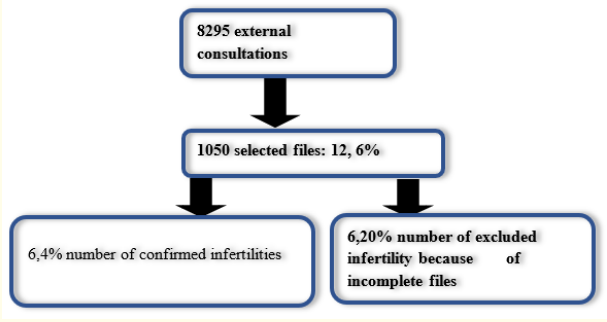

Figure 1: The frequency of marital infertility.

Risk factors for infertility

For women

In our sampling, we found 135/535 cases of STIs antecedents making 25.23%. 29.7% (159/535) had had an antecedent of abortion among which 12.0% (64/535) is clandestine, 95/535 cases of spontaneous abortions with MVA, making 17.75%. We found in our study 20.9% (112/535 cases) of women who had hada surgical antecedent divided as follows: caesarean:19/535 making 3.55%, GEU: 14/535 making2.61%; polymyomectomy: 14/535 making 2.61%; tubal plastic surgery:10/535 making 1.86%, cystectomy: 10/535 making 1.86%, vaginal plastic surgery 2/535 making 0.37%, thyroidectomy 1/535 making 0.18%, laparoscopic surgery 2/535 making 0.37% and Laparoscopy 6/535 making 1.12%, laparotomy 17/535 making 3.17%, Appendectomy 12/535 making 2.24%.

For men

In our study, 11.8% (63/535) of the men presented a medical antecedent of infection divided as follows: bilharzias is 32/535 making 5.9%; Mumps: 13/535 making 2.42%; Gonococcal disease: 11/535 making 2.05%. We found that 1.9% (13/535) of men had hadan antecedent of surgery consisting of: inguinal hernia repair: 3/535 making 0.56%. Cure of post infectious urethral stenosis 1/535 making 0.18%; hydrocele: 5/535, making 0.93%; varicocele cure: 1/535 making 0.18%. In our study, we found that 42.24% (226/535) of men used tobacco.

Causes

The causes of female infertility found in this work were

Tubal abnormalities

216 cases (40.4%) divided as follows: distal bilateral tubal obstructions associated with hydrosalpinx 122/535, making 22.80%; proximal bilateral tubal obstructions: 70 cases, making 13.08%; endometriosis: 2/535, making 0.37% and inflammatory pelvic disease: 16 cases making 2.99%.

Hormonal disorders: 122 cases (22.8%)

luteal insufficiencies (30/535 cases) making 5.60%; psychogenic amenorrhea 10/535 cases making 1.86%; premature ovarian failure 49/535 cases making 9.15%; the Sheehan syndrome (1/535) making 0.18%; the morbid obesity (11/535) making 2.05%; the hyperthyroidism (1/535) making 0.18%; the PCOS (13/535) making 2.42%; the hyperprolactinemia (7/535) making 1.30%.

The uterine abnormalities in 69 cases (12.9%)

Uterine fibroids: 65/535 cases making 12.41%; the uterine synechia: 1/535 cases making 0.18%; the uterine hypotrophy: 2/535 cases making 0.37%; the adenomyosis: 1/535 cases making 0.18%. The unidentified causes for women represented 128/535 cases making 23.9%.

The causes of male infertility were the abnormalities of the sperm consisted as follows 26.35% (141 cases): the azoospermia 51/535 cases making 9.53%; the severe OATS 27/535 cases making 5.04%; the moderate oligoasthenospermia 63/535 making 11.77%.Testicular and penis abnormalities: 61/535 cases making 11.40%: testicular agenesis 10/535 cases making 1.86%; the bilateral cryptorchidism: 12/535 cases making 2.24%; testicular ectopy 2/535 making 0.37%; the testicular tumors: 5/535 casesmaking0.93%; testicular hypotrophies: 12/535 cases making 2.24%; testicular asymmetry: 15/535 cases making 2.80% and hypospadias: 5/535 cases making 0.93% and the aftermaths of STIs 63/535 making 11.8%. However, in more than 50% of the cases (270 cases) no cause of male infertility has been found.

Treatments

Options of treatment

For women

The treatment was purely medical in 75.5% (383/535), a combination of surgery and medical treatment in 3.7% (20/535) and surgery alone in 24.6% (132/535).

For men

The treatment consisted of hormone therapy (79/535) making 14.76%; vitamin therapy: (7/535) making 1.30%; lifestyle: (9/535) making1.68%.

Result of the treatment

For all the combined causes, we obtained 19.1% (102/535) of pregnancy cases. The frequency of pregnancy according to the treatment options appears in figure 2.

Figure 2: The frequency of pregnancies by treatment option.

Factors influencing the result of treatment

The factors influencing the result of treatment in our work were the patient's age, the type of infertility and the cause of infertility. In fact, after 35 years old, the pregnancy rate was significantly lower compared to younger patients 0.9% making 5 / 42 vs 18.2% making 97/493; Chi-square: 16.08; P < 0.001). The pregnancy rate also was significantly lower in primary infertility than in the secondary infertility 5.2% vs 13.8%; Chi-square: 9.72; P < 0.05). The longer the duration of infertility was, the lower the pregnancy rate was (Chi-square: 24.04; P < 0.001). In fact, for a period of infertility ≤ 5 years, the pregnancy rate was 14.6% (78/294); between 6 and 9 years of female infertility, the pregnancy rate was 3.4% (18/161) while after at least 10 years of female infertility, it was 1.1% (6/80). The causes of female infertility found in this work were: tubal abnormalities in 40.4% (216 cases), hormonal disorders, 122 cases (22.8%), uterine abnormalities in 12.9% (69 cases). For 23.9% (128 patients), no cause could be identified. The causes of male infertility were sperm abnormalities, 26.35% (141 cases), the aftermaths of STIs, 11.8% (63 cases) and testicular and penis abnormalities, 11.40% (61 cases). However, in more than 50% of the cases (270 cases) no cause of male infertility has been found. The treatment was purely medical in 75.5% (383/535), a combination of surgery and medical treatment in 3.7% (20/535) and surgery alone in 24.6% (132/535). The pregnancy rate for these different treatment options was 19.32% (74/383) respectively; 10% (2/20) and 19.69% (26/132).

Discussion

In our series the prevalence of marital infertility was 12.7%. This rate was similar to that of the worldwide frequency, which is between 12.5 - 32.5%. In Europe, the frequency varies from countries to countries: in Italy it is 13%, in Germany it is 22%, in Denmark it is 24% and in Poland it is 32% [1]. Lower than that of Hodounou A. and coll [8] in Togo (14.6%).

In our study, we found that the female responsibility represented 62.8% that of males is 13.5%; the mixed infertility concerned 12.9% of couples and finally the unidentified infertility represents 10.8%. Kamini and all have found the female responsibility in 34%, the male responsibility in 20%, the mixed responsibility is 38%, and the unidentified responsibility represented 8% [2]. This difference between the frequencies of responsibilities for infertility in a couple can be explained by African customs and the reluctance of men in Africa to clinical and complementary examinations. In Africa there is no difference between virility and reproduction. In our sample, the risk factors for the female infertility were the antecedents of STI 135/535 making 25.23%, the antecedent of abortion 29.7% (159/535) among which 12.0% (64/535)were clandestine, 95/535 cases of spontaneous abortions with MVA making 17.75%. In Africa, 65 to 85% of infertility has infectious origins [6]. The sexually transmitted infections are increasing and abortions are not legalized in many countries, which push women to practice clandestine abortion. In our study, we found 20.9% (112/535 cases) of women who had hada pelvic surgical antecedent. According to CNGOF, the pelvic surgery impairs spontaneous fertility [9].

In our study, 11.8% (63/535) of the men had hada medical antecedent of genital infection; this has been confirmed by African studies [6]. We found that 1.9% (13/535) of the men had hadan antecedent of genital surgery. In our study, we found that 42.24% (226/535) of men used tobacco. According to Human reproduction, [10] tobacco consumption decreases testicular volume and sperm count. The surgery of the male genital organs reduces the

chances of procreation if the origin of infertility is male and tobacco impairs the quality of sperm [10].

In our study, tubal abnormalities were the most common cause of female infertility 216 cases (40.4%); endometriosis: 2/535 making 0.37% and the inflammatory pelvic disease: 16 cases making 2.99%, the hormonal disorders: 122 cases (22.8%), the uterine abnormalities in 69 cases (12.9%) and the unidentified causes for women represented 128/535 cases making 23.9%. African theses confirm this result with a frequency of 65 to 85% of tubal infertility [5,11]. In Western countries, the hormonal disorders rank first, 32% of the causes [2-4].

The causes of the male infertility were represented in our sample by sperm abnormalities with 26.35% (141 cases) with azoospermia at the head 51/535 cases making 9.53%; testicular abnormalities: 61/535 cases making 11.40%: bilateral cryptorchidism: 12/535 cases making 2.24%; and the aftermaths of IST 63/535 making 11.8%. However, in more than 50% of the cases (270 cases) no cause of male infertility has been found. These results are confirmed by the Western series [2-4] but the high number of unidentified male infertility causes around 50% is explained by the insufficient technical platform and lack of qualified personnel.

For women

The treatment was purely medical in 75.5% (383/535), a combination of surgery and medical treatment in 3.7% (20/535) and surgery alone in 24.6% (132/535).

For men

The treatment consisted of hormone therapy (79/535) making 14.76%; vitamin therapy: (7/535) making 1.30%; the lifestyle: (9/535) making 1.68%. For all the combined causes we obtained 102/535 cases of pregnancy making 19.1%. The frequency of pregnancy according to the treatment option appears in Graph No. 2. This treatment is dependent on the technical platform and qualified personnel [5,6,9]. The factors influencing the marital infertility were represented by the age, the pregnancy rate decreased from 35 years old with Chi-square: 16.08; P: 0.00; the type of infertility, the pregnancy rate was lower in the case of primary infertility than with the secondary infertility with Chi-square: 9.72; P: 0.02; the duration of infertility, the longer the duration of infertility was, the less pregnancy was obtained with Chi-square: 24.04; P: 0.00. This has been confirmed by Western studies [2-4].

Conclusion

The marital infertility is a public health problem with the increase in sexually transmitted infections. It should be considered in Africa, in Mali in particular, as a priority health problem, hence the need to set up LDC services in public structures.

Bibliography

1. WHO: WHO laboratory manual for the examination and the processing of human semen. Fifth edition.
2. Kamini R. All principles and practice of assisted reproductive technology (ART) (2014): 148-157.
3. Belaisch Allart Infertilité dite inexpliquée: quel bilan en 2009? Livre du CNGOF mise à jour en Gynécologie Médicale. Eds, Vigot, Paris (2009).
4. RPC prise en charge de l'infertilité CNGOF *Journal of Gynecology Obstetrics and Human Reproduction* (2010): 39.
5. Boivin J., *et al*. "International estimates of infertility prevalence and treatment-seeking: potential need and demand for infertility medical care". *Human Reproduction* 22.6 (2007): 1506-1512.
6. Wright KL. "Définir l'infertilité". FHI (network en Francais) (2004): 4-12.
7. Practical Guide in Infertility 23rd ISAR First Edition (2018): 407-413.
8. Hodonou A., *et al.* "La stérilité conjugale enmilieu africain au CHU de Lomé.Ses facteurs étiologiques (à propos de 976 cas)". *Médecine d'Afrique Noire* 30.12 (1983): 533-542.
9. CNGOF. Recommandations pour la pratique Clinique. Myoma management (2011).
10. Human reproduction 26 (2011):11.
11. Porcu G., *et al*. Prise en charge d'une infertilité du couple (Exploration Chez la femme) 42 (2001): 63-67.
12. World Health Organization. Infertility: a tabulation of available data on prevalence of primary and secondary infertility. Geneva (1991).
13. Brennan D., *et al*. Human reproduction 27 (2012): 5.
14. NICE clinical guideline. Guidance.nice.org.uk/org156. Assessment and treatment for people with 156 (2013).

15. ICMART (International Committee for Monitoring Assisted Reproductive Technology) and the World Health Organization (WHO) revised glossary of ART terminology (2009).

16. Human reproduction (2010).

17. Family Heath International: Préserver la fertilité (2004).

18. Demouzon J. Epidémiologie de l'infécondité du couple. Immunoanal biol. Spec (1990):11-12.

19. Guibert J. Suspicion d'infertilité du couple Revue du praticien, Médecine générale; CNRS, INIST diffusion (2007): 445- 448.

20. V Bigouroux., *et al*. "Utilisation du citrate de clomifène en médecine de ville dans la région Midi-Pyrénées: qualité du bilan explorant la stérilité, de la prescription et de surveillance du traitement. Gynécologie obstétrique and fertilité 32 (2004) 954-960.