Original Research Article

Epidemiology and clinical profile of male infertility at the Fertilization Centre IRIFIV in Casablanca, Morocco, around 295 Cases.

ABSTRACT

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Objective: Male infertility is a scourge of the 21st century, and its management remains a real headache. The objective of this descriptive study of the general profile of male infertility carried out at the IRIFIV In Vitro Fertilization Centre, Casablanca, Morocco, is to ensure better management of this rapidly growing scourge.

Material and methods: This is a retrospective, descriptive study of 295 patient records seen in consultation for conjugal infertility of the couple between 2017 and 2018.All the parameters studied covered clinical elements (type and duration of infertility, history, and examination data) and paraclinical explorations (Spermogram, Spermoculture, scrotal content ultrasound, infectious balance, testicular biopsy, FSH, LH and testosterone assay and deferensography).

Results: The average age of patients was 37.5 years and the average duration of infertility progression was 5.5 years. Infertility was primary in 70.9% of cases and secondary in 29.1% of cases. Clinically, varicocele was the most common abnormality found in 65.9% of patients. Sperm parameters were disrupted in 72% of cases. The main disturbances were oligospermia 40.20% and asthenozoospermia in 37% of cases.

Conclusion: The overall profile of infertility has been very varied. The causes of male infertility noted are multifactorial. Male infertility usually results in a quantitative and/or qualitative abnormality of the sperm. The lack of sufficient data hampered the very good exploration.

Keywords: male infertility, sperm, varicocele, in vitro fertilization

1. INTRODUCTION

For a long time, the difficulties in obtaining a pregnancy were systematically attributed to women. But today, this is no longer the case, because male infertility, as an isolated or non-isolated factor, is present in more than 50% of the infertility of the couple [1]. However, it affects 15% of couples in the world, approximately 80 million men and women are concerned [2] and is a real public health problem because of its prevalence, generalization, distribution and also the difficulties inherent in its care [3], particularly male infertility affects the Psycho-emotional balance of the couple and by that of society, especially in a country like Morocco where procreation is one of the main aims of marriage [4]. This is why non-procreation remains one of the main causes of divorce.

Through this study, it is proposed to identify a general profile of infertility based on the following parameters: clinical examinations, paraclinical examinations, etiologies of male infertility, the different risk factors that may weaken the sperm parameters as well as the frequency of the different spermogram anomalies.

2. PATIENTS AND METHODS

The study was conducted at the IRIFIV in vitro fertilization center, Casablanca, Morocco. This is a retrospective, descriptive study of 295 patient records followed for marital infertility between 2016 and 2018.

The parameters studied were:

Epidemiological: age, occupation, risk factors, marital status.

Clinical: type and duration of infertility, history, examination data

Paraclinics: Spermogram, Sperm culture, scrotal content ultrasound, infectious test (ECBU, serology, Chlamydia, Mycoplasma and Ureaplasma by PCR), testicular biopsy in some cases of severe oligospermia or azoospermia, FSH, LH and testosterone assay using an enzyme immunoassay method [5], defertility in some patients who had a strong suspicion of excretory azoospermia.

2.1 Collection of samples

Semen samples were collected in sterile containers by masturbation after 3 days of abstinence. For liquefaction, the samples were stored at 37°C under 5% CO_2 pending examination. The microscopic analysis was performed according to the CASA (Computer assisted sperm analysis) automated method described in the standards of the World Health Organisation (WHO) [6].

2.1.1 Normal spermogram values:

Sperm count (Millions/ml):

WHO-2010: ≥15 million/ml

Sperm vitality

WHO-2010: ≥58%/ml

Sperm mobility

Mobility at 1 hour: a+b ≥ 32%.

Mobility at 4am: a+b+c ≥ 40% mobility.

2.2Statistical test

The results obtained have been the subject of a statistical study, the comparison of the results is carried out by the student test (t test).

3. RESULTS

3.1 Age

Our study involved a cohort of 295 patients. The average age of the patients was 37.5 years with extremes from 25 to 65 years. The age group between 30 and 35 years was the most represented with 83 with a percentage of 28.13% (Figure 1).We have the age group between 40 and 45 with a percentage of 22.4% followed closely by the age group between 45 and 50 which represents 18.30% of the workforce. Then the age group between 50 and 55 years old constitutes 11.52%, nearly 11.52% were between 55 and 65 years old and 2.7% were between 60 and 65 years old. In contrast, the age group between 25 and 30 years of age recorded the lowest percentage at only 1.35 years of age.

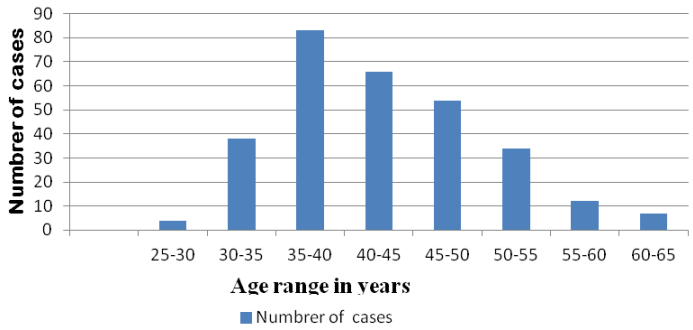

Fig.1. Distribution of patients by age group in years

3.2Type of infertility

The two most common types of infertility are primary male infertility with 209 cases out of 295 or 70.9% and secondary male infertility with 86 cases out of 295 or 29.1% (Table 1). Primary infertility is defined as a situation where no pregnancy has yet occurred in the couple [7] and secondary infertility resulting from a declared pregnancy, even if it has not been completed or if one of the spouses has already had descendants with another partner [8].

Tableau 1:Distribution of patients by type of infertility

Type of infertility	Effectif	Percentage (%)
Primary	209	70.9
Secondary	86	29,1
Total	295	100

3.3Duration of infertility evolution

The average duration of male infertility was 5 to 6 years with extremes of 1 to 8 years (Figure 2).

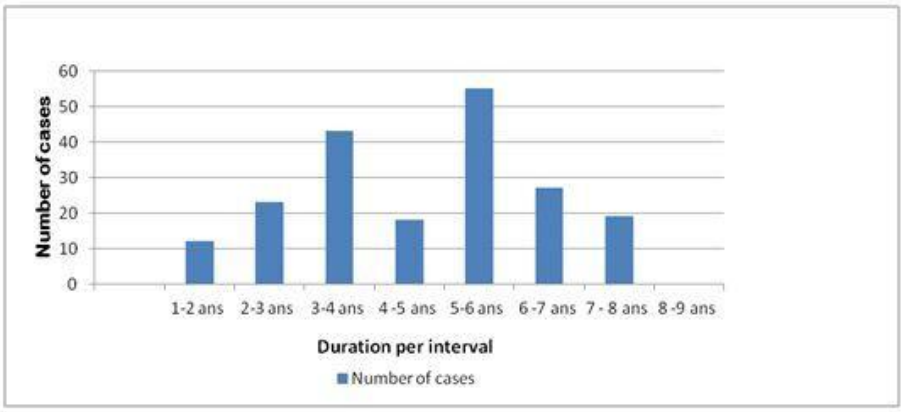

Figure 2:Distribution of patients by duration of infertility in years.

3.4Spermogram

According to WHO 2010 criteria, the anomalies noted were quantitative and qualitative. The quantitative anomalies were: oligospermia in 49.2% of cases, azoospermia in 37% of cases. While the qualitative anomalies noted were: asthenozoospermia in 50% of cases, necrozoospermia in 28% of cases and teratospermia in 34% of cases (Table 2).

Tableau 2: Distribution of patient history.

Background information	Effectif	Percentage (%)
Orchitis in Mumps	12	40,7
Traumatisme des bourses	6	2,03
Cryptorchidism	4	1,7
Inguinal hernia cure	3	1,02
Hydrocele cure	2	0,68
Pulmonary tuberculosis	1	0,34

3.5Counting in patients with varicocele

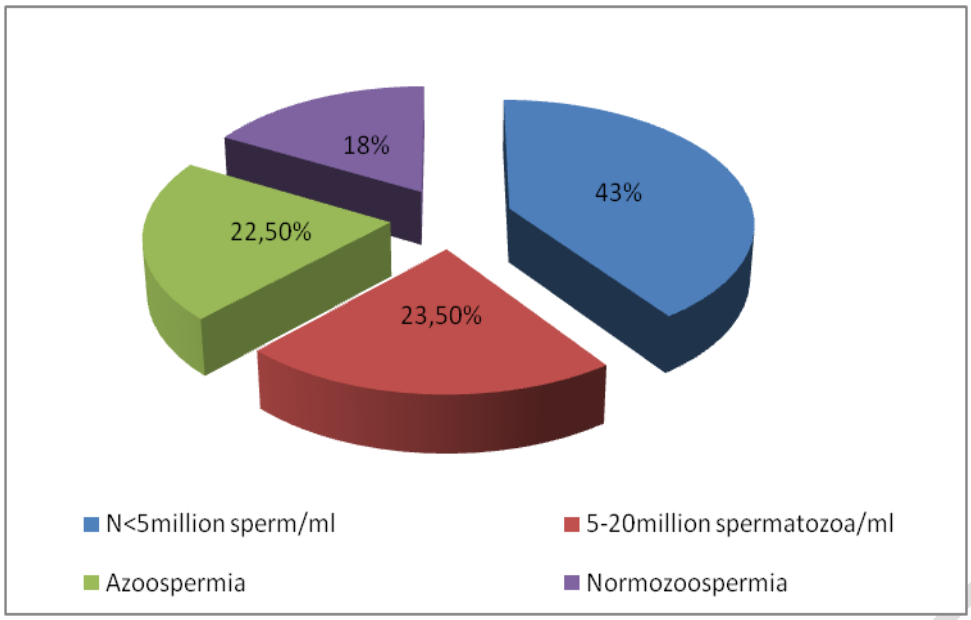

Fig 3. Graphical representation of % counting of patients with varicocele

4. DISCUSSION

The annual number of patients consulting for infertility continues to increase. This growth is due to the increased interest of populations in their reproductive health. Already in France, more than 60,000 couples consult each year for infertility [9], while in the United States, the number of couples concerned is 6 million [10], while the number of infertile couples worldwide is estimated at between 60 and 80 million; about 15% of couples of childbearing age consult for possible infertility. Although Africa has the highest birth rates in the world, infertility remains a very important socio-cultural problem and affects 25 to 40 of the population with serious social consequences: depression, extramarital sexuality, conflict. Especially in Morocco where the purpose of marriage is procreation, which brings joy and harmony to the family [11].

Age is a very important factor in determining the fertility of couples. In our study, the average age of our patients was 37.5 years with extremes ranging from 25 to 65 years. Our finding is in perfect agreement with the data found in the literature. Indeed, three studies, two of which were carried out in Senegal in 2008 [12], 2010 [4] and another in Morocco [12], reported an average age of 39.9, 39 and 37 respectively, with extremes from 25 to 50 years. These results are explained by late marriages due to certain realities socio-economic. Nowadays, these late marriages lead to biological ageing, which reduces the fertility potential of individuals, making it difficult to conceive couples [13].

Primary infertility is the primary cause of consultation. It represents 70.9 of the cases. It is followed by secondary infertility, which accounts for 29.1 of the cases. These results are similar to data from other studies carried out, in particular that of [12] in the regions of Fez (Morocco) and Annaba (Algeria), which indicate primary infertility rates of 75.6 and 73.48 respectively and secondary infertility rates of 24.4 and 26.53. According to Thonneau et al, the high rate of primary infertility over that of secondary infertility is explained by the social context as well as the frequent tendency to consult couples with no children on those who have them. one or more.

The average duration of male infertility is 5.5 years with extremes of 2 to 8 years. Our findings on the duration of male infertility are in perfect agreement with the data in the literature, particularly those of Houssein et al, and Niang et al, which indicate an average duration of 5.5 and 6 years with extremes of 2 and 10 years and 1 and 30 years respectively [3] [12].These results are explained by the delay in consulting patients, the frequent use of traditional practitioners before going to see doctors, and the indexation of women first.

The alteration of sperm parameters related to occupational exposures has been the subject of numerous studies. Occupational risk factors, including stress, heat and environmental pollution, would explain the particular representativeness of these professions [12] in our sample, the notion of occupational exposure was found in 12 of the patients. This differs slightly from the results of Houssein et al, conducted in Fes, which found 9.76.For the occupation of driver, metalworkers, bakers and cooks exposed to environmental toxins and heat in retrospective studies conducted by Thonneau et al, and Niang et al, respectively, have shown that the time required to complete a pregnancy is significantly increased by 4,5 months for a group of professional drivers (>3 hours/day) compared to 2.8 months for unexposed men [3] [11] and that the ambient temperature of the workstation and/or the scrotal temperature of some employees (welders, drivers) to the decrease in semen parameters.

The limitation of most of these studies is the lack of exposure characterization. However, this is necessary to identify the chemical classes and types of radiation involved.

5. CONCLUSION

The majority of infertility profiles are generally polymorphic. The causes of infertility are very varied and multiple. Male infertility, results in quantitative and/or qualitative sperm abnormalities. Its perfect exploration is seriously hampered by the absence and/or lack of information about the partner. This fact then requires coordination between the andrologist and the gynecologist for better care.

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ABBREVIATIONS

CASA: Computer assisted sperm analysis
WHO: World Health Organisation
ECBU: Cytobacteriological examination of urine
FSH: Follicle-stimulating hormone
LH: Luteinizing hormone