The Prevalence of Sperm Parameters for Infertile Males in Thi-Qar City

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Abstract

Objective Male infertility is a term in which the male is not capable to attain pregnancy in a female. It occurs due to a lack of semen and low-quality semen. Semen Quality is referred to as a surrogate measure of male fecundity. This study aims to assess the frequency of sperm factors in infertile men in Thi-Qar City. Materials and Methods: This study involved an infertile couple, seminal fluid analysis (SFA) was done to evaluate male factors. Males with normal seminal fluid parameters were excluded. Regarding male, SFA was examined according to WHO 2010. Information such as age, duration of infertility and type of infertility were taken Results Among the percentage of abnormal sperm parameters for infertile couples in which the largest percentage was for asthenozoospermia that represent 66.70% of all infertile males. The second sperm abnormality is 12.13% for oligoasthenozoospermia. Asthenoteratozoospermia and oligoasthenoteratozoospermia have the same percentage (4.4). Azoospermia represents 6.7% while the lower percentage for teratozoospermia. Conclusions largest percentage was for asthenozoospermia that represents 66.70% of all infertile males .

Keywords: *Seminal fluid analysis (SFA), sperm parameters*

Introduction

Infertility is a different type of medical care as it relies on both male and female. Infertility is a unique medical condition because it involves a couple, rather than a single individual. In this condition, a couple fails to conceive after 1 year of intercourse without the usage of contraception in females less than the age of 35 years; and after the duration of 6 months of intercourse without the usage of contraception in females less than the age of 35 years and older (clinical definition) [1]. This is a very disturbing medical condition as the couple cannot have children if they are suffering from infertility. This further causes depression, psychological distress, and low self-esteem in the couple [2,3].

Types of male infertility

1. Asthenozoospermia

This term is described as the total sperm motility (non-progressive and progressive), non-progressive morality is less than 40 percent and progressive motility is less than 32 percent. [4)]

2. Oligozoospermia

A few months ago, the World Health Organization reevaluated the sperm criteria and announced a lower reference point which is less than 15M sperm/Ml. (WHO 2010).[4]

3. Azoospermia

This term is described as the full absence of sperms from a minimum of 2 individual samples of centrifuged semen [4].

4. Teratozoospermia

Teratozoospermia; normal sperm morphology is <4% Kruger strict criteria [4]

Male infertility

There is a common misunderstanding that the female is responsible for infertility but, it has to be understood that male is equally responsible for this severe medical

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condition [5].

Materials and Method

The study was carried out at infertility unit in Thi Qar city patient. From February 2015 to July 2017. This study involved an infertile couple, SFA was done to evaluate malefactors. Males with normal seminal fluid parameters were excluded. Regarding male, SFA was examined according to WHO 2010. Information such as age, duration of infertility and type of infertility were taken

Seminal fluid analysis

The seminal fluid sample was taken in a clean, sterile, and dry disposable Petri-dish after three to five days of sexual absence. This was done by masturbation in a quiet room near the laboratory of semen analysis. The dish was a label with the name of the male, his age, sexual intercourse absence period, and the exact time of sperms collection. The sample was liquified using an incubator at the temperature of 37 ºC for half an hour. It was then mixed and analyzed by microscopic and macroscopic tests. To note the results of seminal fluid analysis, the standard form of (WHO 2010) was used (Table 1).

Table 1: Normal values of semen variables [4]

Sperm parameters		**WHO Criteria**
Sperm concentration millions/mL		15x106 spermatozoa/mL or more
Total sperm motility (%)		>40%
Sperm Grade Activity	Progressive motility (%)	>32%
	Non Progressive motility (%)	
	Immotile sperm(%)	
Normal sperm morphology (%)		>30%*

Results

Figure 1 shows the percentage of abnormal sperm parameters for infertile couples in which the largest percentage was for asthenozoospermia that represent 66.70% of all infertile males. The second sperm abnormality is 12.13% for oligoasthenozoospermia Asthenoteratozoospermia and oligoasthenoteratozoospermia have a same percentage (4.4). Azoospermia represents 6.7% while the lower percentage for teratozoospermia.

In our study table, 2 show the effect of male infertility duration on sperm parameters. Regarding sperm concentration there is a significant decline at 5-10years, also there is a significant decline in sperm morphology when duration more than 10 years.

Table 3 discuss the effect of male infertility type in sperm parameters whether primary or secondary. There is no significant difference between primary and secondary types for all sperm parameters (sperm concentration, motility, and morphology).

Table 4 shows the distribution into primary and secondary fertility among infertile couples, 60% of them with primary infertility and 40% with secondary infertility.

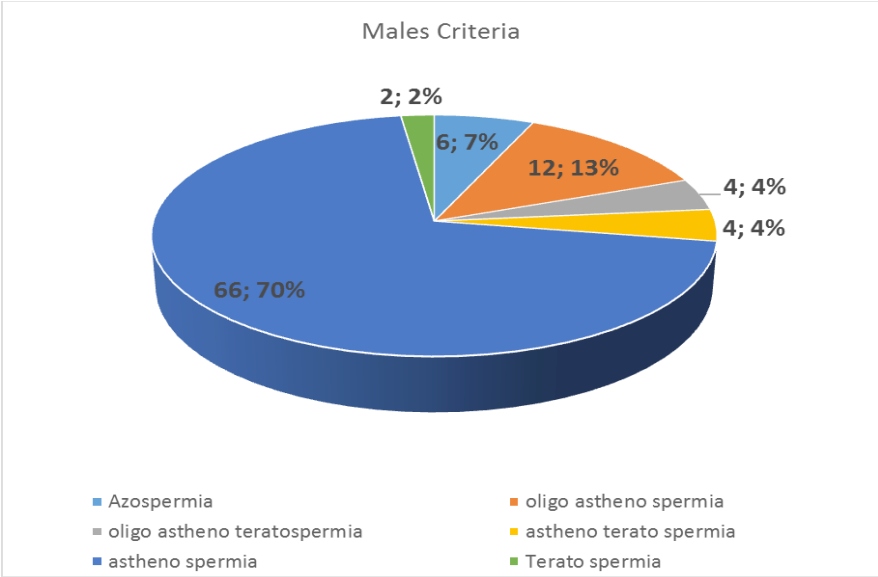

Figure 1. sperm parameters

Table2: Effect of male infertility duration on sperm parameters.

Infertility duration Parameters	**1-5 years**	**5-10 years**	**≥10 years**
Sperm concentration	44.417±4.10a	38.375±4.92b	46.944±5.74a
Progressive motility %	11.763±2.21a	8.081±2.58a	12.300±3.42a
Non-progressive motility %	28.383±2.69a	29.425±3.23a	32.178±4.17a
Immotile sperm	43.615±2.79b	44.813±4.38b	52.439±5.34a
sperm morphology %	52.944±3.67a	43.188±3.64b	45.468±2.47b

- Means with similar letters are nonsignificant different (P>0.05).

Means with different letters are significant deferments (P≤0.05).

Table3: Effect of male infertility type in sperm parameters.

Age groups Parameters	**Primary**	**Secondary**
Sperm concentration	42.459±3.59a	43.649±4.41a
Progressive motility %	10.298±1.80a	11.254±2.69a
Non progressive motility %	28.984±2.38a	30.141±2.93a
Immotile sperm	44.633±3.11a	47.265±2.84a
sperm morphology %	44.567±2.30a	48.595±3.05a

- Means with similar letters are non-significant different (P>0.05).

Means with different letters are significant deferments (P≤0.05).

Table 4: Distribution into primary and secondary fertility among infertile couples.

Infertility	Frequency	Percentage (%)
Primary	60	60%
Secondary	40	40%
Total	100	100%

Discussion

Moreover, the sperm parameters correlate negatively with increased period of infertility [7]. These findings are in agreement with the results of the present study that the male patients with duration of infertility (1-5) years were with the lowest percentage of sperm motility.

The results of this study showed that primary infertility (60%) was more than secondary infertility (40%) as it is obvious from table 4. But, in men having primary infertility, genetic and chromosomal factors have a vital role in the presence of primary infertility than secondary infertility [8].

A retrospective study, conducted between 1992 to 1999 highlights the occurrence of asthenozoospermia as 18.71% and for asthenozoospermia, it was 63.13%, linked with oligo- or teratozoospermia. So, 81.84 percent of the investigated samples indicated altered motility. [9]

In research conducted in Nepal, 20% of the couples indicated semen abnormality. 47% indicated oligospermia while 39% indicated azoospermia. Moreover, 14% of males had asthenormia.[10].

Socioeconomic, environmental, and nutritional aspects are responsible for compromising the health of the male reproductive system [11]. Chemotherapy, radiation, and surgery may have an impact on spermatogenesis [12]. A research conducted in Senegal to check this abnormality, oligoasthenoteratonecrozoospermia showed the highest percentage that is 20.2 percent while azoospermia showed 14.5 percent and asthenonecrozoospermia and astheno-necrozoospermia both showed the occurrence as 10.3% [13]. However, Pontonnier indicates that oligoasthenoteratozoospermia is the chief abnormality that is usually found in the general population and particularly in varicocele [14].

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