Infertility in Young Women

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2023-2024

Conclusion: Age and weight play important role in the fertility outcomes.

Introduction

1.1. Background:

The failure to conceive after a year of consistent, unprotected sexual activity is known as infertility. About 15-20% of couples worldwide experience infertility, and the incidence of infertility is expected to rise yearly. [1]. Developed countries have a higher prevalence of primary infertility while developing countries have a higher rate of secondary infertility.

In the United States, approximately 16% of women of childbearing age are affected by infertility [2]. Infertility can have negative psychological and social effects on a partnership, especially on women. It can also raise the possibility of violence against infertile women. [3]. The internet is increasingly being used as a source of information and advice for individuals and couples dealing with infertility [4]. However, Health literacy concerning infertility varies among individuals and couples, with cognitive skills needed to appraise information and make informed decisions [5]. Women may find it difficult to follow recommended drug and lifestyle regimens for infertility therapy, which may affect treatment success rates.

Infertility in young women is a significant concern that can hurt mental health and quality of life, Studies have shown that infertility can lead to stress, anxiety, depression, and low self-esteem in women, Fertility preservation techniques, such

as oocyte/embryo cryopreservation and ovarian suppression with gonadotrophin-releasing hormone agonists (GnRHa), are recommended for young women with breast cancer who are interested in preserving their fertility.[3]

1.2. Types of Infertility in Females:

Infertility can be classified into two types: primary infertility and secondary infertility:

The primary infertility inability to conceive after a year of consistent, unprotected sexual activity without a previous pregnancy. [6] [7].

Secondary infertility, on the other hand, occurs when a woman has previously been pregnant but is incapable of conceiving again despite regular unprotected intercourse for one year [8].

As per systemic analysis and National health surveys conducted in the year 2010, approximately 2% of women suffered from primary infertility and approximately 10.5% from secondary infertility.[8]

1.3. Causes of Infertility in Females:

The causes of infertility in females include the following:

Uterine and tubal factors, Ovarian reserve, ovulatory dysfunction, obesity, and hormone-related disorders [1]

Ovarian and menstrual disorders, as well as chronic endometritis, are also common causes of female infertility [9].

Endocrine dysfunctions, which often have a genetic basis, can contribute to infertility in females [10].

Endocrine dysfunctions account for 25% of infertility problems. Hormonal and molecular events involved in folliculogenesis are crucial for acquiring oocyte competence, a key factor of fetal viability. In the present publication, we review a practical pathophysiological and therapeutic approach to the endocrine causes of female infertility. (10)

Other factors such as environmental conditions, past medical history, and lifestyle choices can also play a role in causing infertility in females. (11)

1.4. Treatment and Management of Female Infertility:

The chief treatments for female infertility contain hormone therapy, in vitro fertilization (IVF), embryo transfer, complementary and alternative medicine (CAM) such as acupuncture, moxibustion, oral Chinese herbal medicine, psychological intervention, biosimilar electrical stimulation, homeopathy, and hyperbaric oxygen therapy [12].

Other treatments include reproductive technologies such as IVF, surrogacy, and artificial insemination, as well as homeopathic medicines [13].

Additionally, methods for promoting egg maturation in assisted reproductive technologies and decreasing the rate of ovarian hyper-stimulation syndrome (OHSS) have been developed [14].

Efficient medical therapies are available for many female causes of infertility, and a thorough study of the underlying causes is necessary for individualized treatment [15].

Overall, a combination of conventional treatments, CAM, and reproductive technologies are used to address female infertility.

Aim of the study:

To explore infertility in young women and causes that affect fertility in females under 30 years and which type of infertility is more prevalent.

2. Patients and Methods

This is a cross cross-sectional descriptive study. A sample of 50 infertile women was collected from Al-Batool Teaching Hospital in the period from September 2023 to January 2024. The infertile young women are diagnosed by a gynecologist, with laboratory tests achieved by the physician.

We collected the information using a prepared written questionnaire and direct interviews with the patients.

The information was about:

1. Age (18-30 years)

2. Weight,

3. Type of infertility (Primary or secondary)

4. Hormone levels (follicular stimulating hormone (FSH), Luteinizing hormone (LH), and prolactin (PLH)) and

5. Any associated diseases if present

We preserved the privacy and we coded the patients for the reasons of confidentiality and risk of bias.

Statistical analysis

SPSS Version 25 was used for the description of the data. We expressed the quantitative data by arithmetic mean, standard deviation, and mode and the qualitative data by frequencies. Chi-square was used to identify the association between the variables when a P value less than 0.05 was considered significant.

3. Results

1. Comparison between Age and weight:

This study which included 50 infertile young women their age grouped into three ranges:

The first group aged between (18-20), the second group aged (20-25) and the last group aged (26-30).

The three aging groups show a significant association with the weight of infertile women as the p-value =0.01 , as shown in the table (3-1) and figure (3-1).

Table (3-1): Comparison between Age and Weight

Years	weight (50-59)Kg	Weight (60-69) kg	➢ 70 Weight	P value
18-20	4	0	1	0.01
20-25	6	9	5	0.01
26-30	3	8	14	0.01

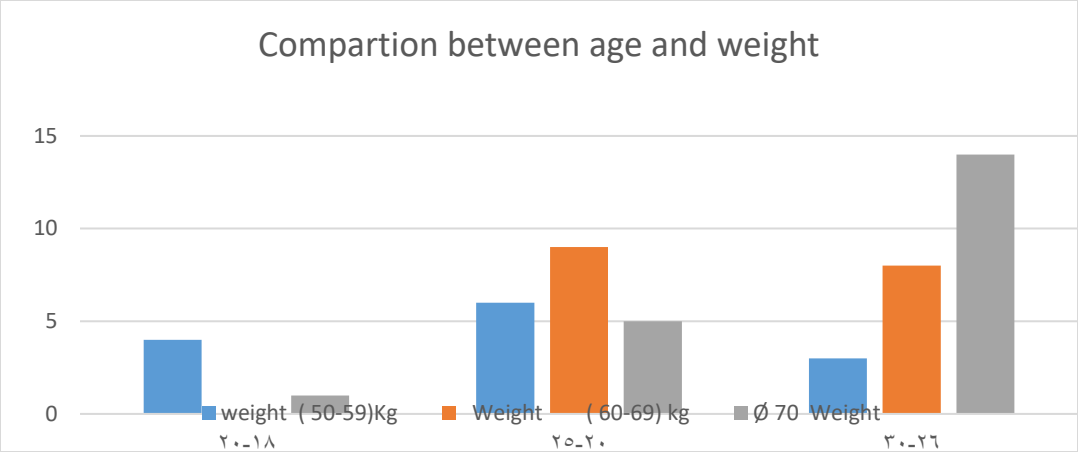

Figure (3-1): comparison between age and weight.

3.2. Percentage of Types of Infertility:

As shown in Table (3-2), showed that primary infertility was 86% in infertile young women which is more than secondary infertility recommended 14%.

3.2. Table of Percentage of Types of infertility:

Type of Infertility	Frequency	Percentage
Primary	**43**	**86 %**
Secondary	**7**	**14 %**

3.3. Comparison between types of Infertility and level of Hormones (FSH, LH, PLH)

In Table (3-3), the FSH showed a highly significant association with the mean of primary (6.12±2.76) and secondary (5.27±3) types of infertility as the p-value =0.009.

Also LH level showed a significant association between the mean of primary and secondary infertility (5.83±3.01 & 5.14±1.23) respectively as the p-value =0.02

While the PLH level shows there's no significant difference between the hormone level and types of infertility as the p-value = 0.61

Table (3-3): Comparison between Types of infertility and levels of hormones.

Hormone	Primary infertility	Secondary infertility	P-value
FSH	**6.12±2.76**	**5.27±3.1**	**0.009**
LH	**5.83±3.01**	**5.14±1.23**	**0.02**
Prolactin	**28.21±9.39**	**28.45±6.28**	**0.61**

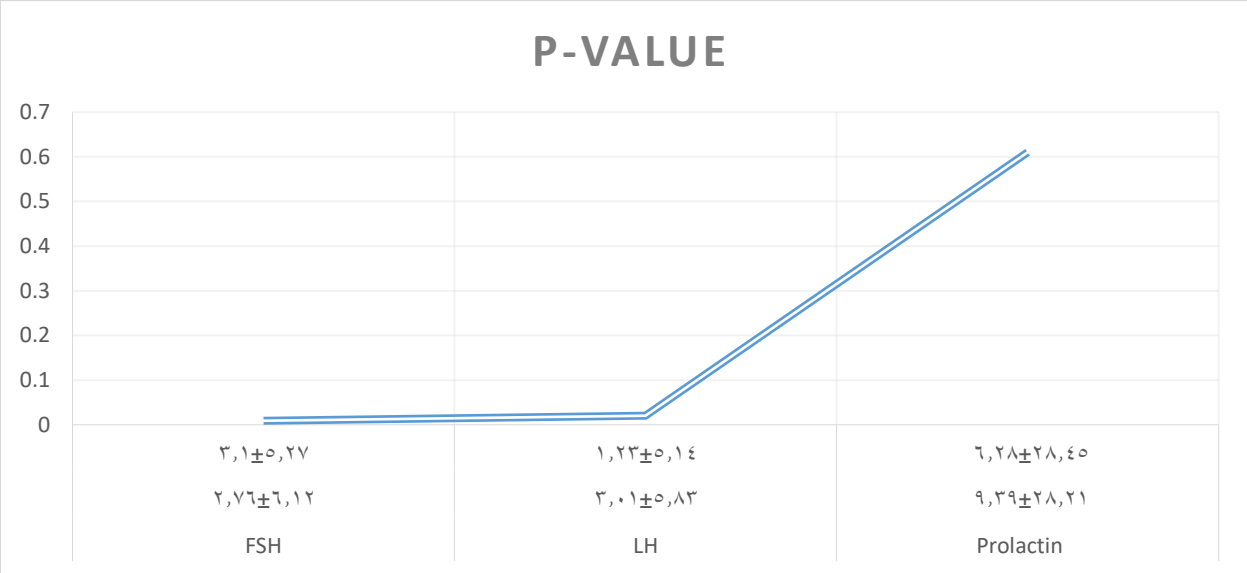

Figure (3-2): Comparison between Types of infertility and levels of hormones

4. Discussion

Infertility in young women has been studied, and several research has found that age can affect reproductive outcomes in females.(1)

According to one study, compared between the ages of 30-35, women under the age of 25 who had IVF-ET had lower rates of fertilization and fewer high-quality embryos [16] .

Another study showed that women aged ≤37 years with unexplained infertility had inferior ovarian reserve compared to age-matched controls, with lower follicle count and high basal serum FSH levels [17] . Additionally, a mathematical model demonstrated that the rate of false positive diagnoses of unexplained infertility increases rapidly after 35 years of age, suggesting that discerning between unexplained infertility and age-related infertility becomes more difficult with increasing age [18] .

Our result showed that there is a highly significant association between young women's age and infertility as these studies documented.

Infertility is influenced by several factors, including age. Researchers have indicated that the frequency of infertility increases with age in women. [19]

Also, our study showed that there is a high association between infertility in young women and their weight with increasing weight there's an increase in the rates of infertility in young women. So the obesity and overweight are significant factors contributing to infertility in young women.

Studies have shown that there is a correlation between body weight and hormonal imbalances, which can affect reproductive function and menstrual cycles [20] .

Women who are overweight or obese are more likely to experience ovulation disorders and difficulties in the implantation of fertilized eggs [21].

Central obesity, indicated by waist circumference and waist-hip ratio, has been positively correlated with serum follicle-stimulating hormone (FSH) levels, which can impact fertility [22].

Additionally, secondary infertility has been associated with higher body mass index (BMI), waist circumference, hip circumference, and waist-hip ratio compared to primary infertility [23] .

Primary infertility in young women is a complex issue with various contributing factors. Our study shows that primary infertility more prominent than secondary infertility

Adamson (2011) found a high prevalence of primary infertility in young women in Mysore, India, with HSV-2 seropositivity being a significant factor. [24]

In this study, the levels of hormones such as FSH and LH were with high related to primary infertility also, (Rashid, 2013) showed that hormonal imbalances,

particularly in luteinizing hormone, follicle-stimulating hormone, prolactin, and testosterone, were highlighted as potential contributors to primary infertility. [25]

5. Conclusions and Recommendations

Conclusions

1. Age and weight play an important role in infertility in young women

2. Primary infertility is more recommended in young infertile women

3. Hormone levels such as (FSH and LH) play a significant effect on the infertility of young women especially in women who their age between (25-30)

4. Prolactin hormone does not affect infertility especially who's with age under 30 years

Recommendations

1. Weight loss, is recommended as a first-line treatment for overweight women with infertility, as it can improve fertility outcomes.

3. Underscore the requirement for further research and targeted interventions to address primary infertility in young women.

4. Comprehensive assessment and management of primary infertility in young women.