Determining the Frequent Causes of Infertility in Infertile Couples

**Abstract:** The research aims to determine the frequent causes of infertility in infertile couples. Where 500 patients were collected from Alhusaina Hospital, Karbala, Iraq, and all causes leading to infertility were studied, and by relying on statistical analysis to analyze data and demographic information on patients, it was found that the most common causes leading to infertility in women were menstrual problems and ovarian cysts, a condition that leads to infertility in women as for men, it is the presence of disorders in the semen.

**Keywords:** Infertility, semen, ART, anovulation.

**INTRODUCTION**

As defined by the World Health Organization (1993), a marriage is considered sterile if a woman of childbearing age does not become pregnant within a year of regular sexual activity without the use of contraceptives. From a clinical point of view, the classification of female infertility is of paramount importance, taking into account the pathogenesis of infertility, on the basis of which general methods of managing patients in order to achieve pregnancy are determined. According to this classification, the following variants of female infertility are distinguished (Sarkar, S., & Gupta, P. 2016):

- Tubal factor infertility - organic or functional disorders of the patency of the fallopian tubes in combination with the adhesive process in the small pelvis or without it;
- Endocrine infertility - ovulatory disorders with abnormalities in the hormonal regulation of the reproductive system.
- Forms of uterine infertility - with endometrial pathologies (hyperplasia, polyps, adhesion), adenomyosis, myoma, uterine abnormalities, as well as in the presence of cervical factors (Sharma, J. B. et al., 2016).

Peritoneal factor and intrauterine forms of infertility make up a significant share in the structure of the causes of female infertility (30-40 and 15%, respectively) (Boivin, J. et al., 2007; & Mascarenhas, M. N. et al., 2012). That is why the improvement of methods for diagnosing the condition of the uterus and the opening of the fallopian tubes is an urgent task of modern medicine, which is necessary to identify additional treatment methods aimed at eliminating the cause of infertility. The recent development of imaging technologies for multicyclic computed tomography, as well as the improvement of post-processing data processing methods, allows for wider use of virtual hysterosalpingography (Ganguly, S., & Unisa, S. 2010; & Mittal, A. et al., 2015).

In a detailed assessment of the condition of the uterus and fallopian tubes. It should be noted that the description of this technique in the world literature is very rare and is limited to the publication of articles and one study by several foreign and domestic teams of authors (Boivin, J. et al., 2007; Mascarenhas, M. N. et al., 2012; Ganguly, S., & Unisa, S. 2010; & Mittal, A. et al., 2015). Virtual hysterosalpingography is a synthetic method that combines the latest technical advances in computed tomography and many years of experience in conventional hysterosalpingography (Patel, A. et al., 2016; & Rajashekar, L. et al., 2008).
According to the results of the epidemiological studies of MALERM KB, the incidence of infertility in marriage ranges from 8 to 29% (Sarkar, S., & Gupta, P. 2016). The development and improvement of new methods for diagnosing the causes of infertility is the most important problem of radiological diagnosis, the solution of which will significantly reduce the rate of infertility marriage. The article describes the possibilities of hysterosalpingography and virtual tubal imaging in diagnosing the causes of infertility. With the help of computed tomography of the uterus, 185 infertile women were examined. During the study, 39% of women revealed various pathologies of the uterus and fallopian tubes, which were verified using MRI, hysteroscopy, or laparoscopy (Swan, M. 2013).

One of the most important challenges facing modern gynecology in general and reproductive medicine in particular. Despite the tremendous advances in assisted reproductive technologies (ART), the number of infertile couples in Iraq is not decreasing (France, J. T. et al., 1992; & Fiordelli, M. et al., 2013).

As endometriosis is an important factor in female infertility (Free, C. et al., 2013). Pathophysiology, endometriosis is a chronic aseptic inflammatory condition often associated with reduced fertility (Boulos, M. N. K. et al., 2011). The prevalence of endometriosis in infertile patients, according to several researchers, is estimated from 25 to 40% (Swan, M. 2009). Meanwhile, endometriosis remains a “mysterious” disease. The study of its etiology and mechanisms leading to the development of infertility continues to be actively studied all over the world. The literature covers issues related to the etiology and pathogenesis of endometriosis, classification, diagnosis, and choice of tactics for managing patients with various forms of endometriosis (Mozaffarian, D. et al., 2015).

**MATERIAL AND METHOD**

**Patient Sample**

A cross-sectional study was conducted, where patients were collected from Alhusaina Hospital, Karbala, Iraq. Where 500 people were examined, Infertile patient.

**Study Design**

Statistical analysis program spss soft 22 was relied upon to analyze data and demographic information, where a cross-sectional study was conducted for 500 infertile patients, and information and data for patients of age, gender, inguinal hernia, viral orchitis, and sexually transmitted diseases were collected through interrogation.

Based on the data of a clinical examination, the preservation of ovarian reserve, the factors contributing to the onset of spontaneous and induced pregnancy in patients with endometriosis-associated infertility were clarified. It was found that chance of spontaneous pregnancy decreased with the age of women over 32 years.

**Study Period**

The study period extended for a full year in collecting patients and their information in addition to demographic information from 1-2-2019 to 22-10-2020

**AIM OF RESEARCH**

The study aims to determine the frequent causes of infertility in infertile couples

**Ethics Statement**

The study was approved by the institutional ethics committee, the identity of the participants was kept in reserve, and the results were individually delivered electronically.

**RESULTS**

### Table 1: Characteristics of Patients

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-33</td>
<td>140</td>
<td>28.1</td>
<td>28.1</td>
<td>28.1</td>
</tr>
<tr>
<td>34-37</td>
<td>104</td>
<td>20.8</td>
<td>20.8</td>
<td>48.9</td>
</tr>
<tr>
<td>38-42</td>
<td>256</td>
<td>51.1</td>
<td>51.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>500</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>infertility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>primary infertility</td>
<td>350</td>
<td>70</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>secondary infertility</td>
<td>150</td>
<td>30</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 2: Causes of Infertility (Female)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Frequency</th>
<th>%</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>diabetes</td>
<td>50</td>
<td>20</td>
<td>20</td>
<td>44</td>
</tr>
<tr>
<td>Thyroid diseases</td>
<td>40</td>
<td>16</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>Ovulation</td>
<td>59</td>
<td>23.6</td>
<td>23.6</td>
<td>23.6</td>
</tr>
<tr>
<td>anovulation</td>
<td>44</td>
<td>17.6</td>
<td>17.6</td>
<td>41.2</td>
</tr>
<tr>
<td>hormonal disorders</td>
<td>21</td>
<td>8.4</td>
<td>8.4</td>
<td>49.6</td>
</tr>
<tr>
<td>Other causes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uterine</td>
<td>36</td>
<td>14.4</td>
<td>14.4</td>
<td>14.4</td>
</tr>
<tr>
<td>Tubal</td>
<td>19</td>
<td>7.6</td>
<td>7.6</td>
<td>22</td>
</tr>
<tr>
<td>Cervical</td>
<td>18</td>
<td>7.7</td>
<td>7.7</td>
<td>29.7</td>
</tr>
<tr>
<td>Menstrual problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30-33</td>
<td>30</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>34-37</td>
<td>40</td>
<td>16</td>
<td>16</td>
<td>28</td>
</tr>
<tr>
<td>38-42</td>
<td>100</td>
<td>40</td>
<td>40</td>
<td>68</td>
</tr>
</tbody>
</table>

Figure 1: P-Value of Female Results

Figure 2: Results Causes of Male Infertility
DISCUSSION

In this study, 500 patients were collected; information and demographic data for patients were collected from Alhusaina Hospital, Karbala, Iraq. Through the statistical analysis, the true value and the arithmetic mean were found to the patients’ ages of 37.5 ± 3.6, and the average age to infertile patients ranged from 38-42 with 256 patients, and infertility was classified into two types: primary and secondary.

The percentage of primary infertility was 70%, and secondary infertility was 30%, as shown in Table 1.

By identifying the causes of infertility in women, it was found that there were many causes, including the existing diseases, which were divided into three types, namely obesity, diabetes, and thyroid diseases, and the percentage of obese women was the largest (24 %), and the total percentage of diseases was 60% and this referred to Estrogen is secreted inside the body from two sources: the ovaries and the adrenal gland; Where the ovaries secrete estrogen in specific amounts depending on the stage of the menstrual cycle, and the adrenal glands secrete a substance called "androstenedione."

Fat cells convert androstenedione into a type of estrogen called estrone. Therefore, in the event of excessive weight gain or obesity, the increase in estrogen secretion inside the body as a result of the conversion process of androstenedione affects the function of the ovaries primarily; causing disruption of the natural ovulation cycle, and this may lead to infertility.

As for the other causes, it was found that there were influencing factors that were one of the causes of infertility, including uterine with a percentage of 14.4, tubal 7.6, and cervical 7.7.

Where the fallopian tubes play the role of the mediator between the ovaries that produce the eggs and the uterus that is supposed to receive the fertilized egg, and the blockage can occur following exposure to infection, or an ectopic pregnancy in the tube itself, or surgeries that were performed there and caused some adhesions.

It is also possible that the blockage in the cervix may occur as a result of a mechanical blockage resulting from an improper appearance of the cervix or a chemical blockage represented by the lack of secretion of the mucous substance that is supposed to help the sperm move properly.

As for the male patients, the most common reason was the presence of disorders in the semen, as the decrease in the number of sperms in the semen leads to a decrease in the chance of fertilization of the Egg cell in the woman and the occurrence of pregnancy.

In general, it can be said that male infertility occurs due to health problems that lead to poor sperm production, affect their work or movement, or impede sperm exit, or in some rare cases as a result of disorders in the pituitary gland.

It is worth noting that having a varicocele does not necessarily mean that the male suffers from infertility, as many men with varicocele do not face reproductive problems, but the varicocele may affect the production and normal growth of sperm because of preventing the normal drainage of blood from the testicles.

CONCLUSION

Infertility can be primary or secondary, and it is primary in cases where pregnancy was never achieved in a person, while it is secondary in cases where it has been achieved at least once in the past.
Disorders affecting the ovaries, such as polycystic ovary syndrome and other follicular disorders, in addition to the presence of diseases, were a major cause of female infertility.

Availability, availability, and affordability of infertility interventions remains a challenge for most countries. Diagnosis and treatment of infertility is often not a priority in national policies related to population, development, and reproductive health strategies, and its diagnosis and treatment is rarely covered by public health budget funding. Moreover, the lack of trained personnel, equipment, and infrastructure and the current high costs of treatment drugs are major obstacles even in countries that are seriously working to meet the needs of infertile people.

**Recommendation**

- Stop smoking.
- Avoid consuming large amounts of caffeine and alcohol.
- Refrain from falling under the influence of psychological pressure.
- Maintain a reasonable weight within the normal limits.

**REFERENCES**