

Assessment of Relationship between Ectopic Pregnancy and Assisted Reproductive Technology in Baghdad City

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Abstract

Objectives: To find out the relationship between assisted reproductive technology,

Some demographics characteristic and ectopic pregnancy among women with ectopic pregnancy

Methodology: A descriptive study was applied to assess the relationship between ectopic pregnancy and Assisted Reproductive Technology among purposive sample of (60) women aged between (20-43) years old attended the hospitals in Baghdad city. **Results:** The study show that the most woman in the age group (32-37) years old, was primary school graduate, most of them have no gravidity, were treated with assisted reproductive technology previously for (5-12) month, Clomiphene citrate (clomid) is used in the rate (50%), suffering from lower abdominal pain and Darker or brown vaginal spotting. **Conclusions:** The study concluded that there is significant relationship between the use of Clomiphene citrate (clomid) and ectopic pregnancy and the most benefit treatment for ectopic pregnancy is methotrexate. **Recommendations:** The study recommended a furthers study on ovulation induction, training program about the effect of ovulation induction especially (clomid) on women health

Keywords: Assessment, ectopic pregnancy, assisted reproductive technology

Introduction

Ectopic pregnancy is a pregnancy in which the fertilize ovum not implanted in the endometrial of the uterine cavity, meaning outside the uterine cavity, most commonly in fallopian tube, the important of management as pharmacologic treatment with methotrexate, or surgery especially with tubal rupture⁽¹⁾.

The incidence rate of ectopic pregnancy is 1–2 percent in the general population, and ART lead to increase this rate in pregnancies than in spontaneous pregnancies about 2–5 %. Although the overall mortality has decreased over time and about 6% of cases suffer from ruptured EPs of all maternal deaths, the fallopian tube EP is the most common ectopic implantation site,

others 10 % of it occur in the cervix, ovary, myometrium, interstitial portion of the fallopian tube, abdominal cavity or within a cesarean section scar⁽²⁾.

Nowadays, by increase infertility rate in the world, the demand to use ART had increase which a common technique for infertility treatment. However, with the time the complications that come from this technology appear widely, such as ovarian hyperstimulation syndrome, Ectopic Pregnancy, and multiple pregnancy, have drawn more and more attention. Even though the incidence of EP is rare during IVF (approximately 2%–11%)⁽³⁾.

Ovulation induction agents is one of the most drugs used for infertility treatment, in the United States there are more than 2 million women within age group (15–44 years) have taken fertility medications. On the other hand, Janee and David reported that the possible complications associated with ovulation induction become more than

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before, like ovarian hyperstimulation syndrome, multi fatal gestations, preterm delivery, heterotopic/ectopic pregnancy, spontaneous abortion, and the theoretic risk of a possible increase in the incidence of ovarian cancer so we deal more with these complication of ART in this study ⁽⁴⁾.

Methodology

A descriptive study was applied to assess the relationship between ectopic pregnancy and Assisted Reproductive Technology among purposive sample of (60) women aged between (20-43) years old attended the hospitals in Baghdad city. Data is collected through using the questionnaire format which consisted of five parts, including demographic, reproductive history, Diagnosis of Ectopic Pregnancy, Assisted Reproductive Technology, Management Treatment, and complications of PCOS included short, the items of questionnaire are rated by (yes) scored as (2) and (no) scored as (1).

Data are collected through using study instrument and the interview technique in purpose of data collection after agreement of woman which suffering from ectopic pregnancy which implemented for the period of (20th October 2019 through 25th February 2020). The reliability and Content validity of the questionnaire are determined through a pilot study of (10) women with ectopic pregnancy which was excluded from the study sample, a panel of (6) experts reviewed the study tool for its validity, and internal consistency reliability 'split-half technique' is employed for the determination of the study instrument internal consistency. The correlation coefficient is ($r=0.89$) which indicates that the questionnaire is an adequately reliable measure. Descriptive and inferential statistical analyses were used to analyze the data by using frequency (F), percentage (%), mean of score (MS), assessment (ASS), and Bivariate Pearson correlation, through SPSS program the statistical procedures tested at $p \leq 0.05$.

Results

Table (1) Distribution of the Reproductive Information in the study sample

List	Reproductive History	Yes		NO		M.S	ASS
		F	%	F	%		
1	Gravidity	27	45	33	55	1.45	M
2	Treatment with ART	44	73.3	16	26.7	1.73	M
3	Years of Treatment with ART						
3.1	Not Use	16	26.7	0	0	2.33	M
3.2	5-12 month	20	33.3	0	0		
3.3	13-36 month	12	20	0	0		
3.4	37-60 month	12	20	0	0		

F: Frequency, %: Percentage, M.S: Mean of scores, Ass: Assessment, L: Low, M: Moderate, H: High

Table (2): Assisted Reproductive Technology

List	Assisted Reproductive Technology	Yes		NO		M.S	ASS
		F	%	F	%		
	Assisted Reproductive Technology					2.1	M
1	Not Use	16	26.7	0	0		
2	Ovulation induction					1	L
2.1	Clomiphene citrate (clomid).	30	50	0	0		
2.2	(HMG) (Pregonal).	6	10	0	0		
3	Artificial Insemination	8	13.3	0	0		

Table (3): Relationships between Studied Variables and Ectopic Pregnancy

Studied Variables	Pearson Correlation	P-value (2-tailed)	Significance
Age (Years)	0.0946	0.000	S
Education	-0.191	0.144	NS
Gravidity	-0.077	0.559	NS
Treatment with ART	0.005	0.972	NS
Years of Treatment with ART	0.017	0.899	NS
Use Clomiphene citrate (clomid)	-0.223	0.056	S
Use (HMG) (Pregonal)	0.029	0.825	NS
Use Artificial Insemination	0.167	0.261	NS
Management treatment	-0.069	0.899	NS

P-value: Probability level, S: Significant, NS: Not significant

Discussion

The study shows that the most woman in the age group (32-37) years old, was primary school graduate, most of them have no gravidity, were treated with assisted reproductive technology previously for (5-12)

month, the most of them were used Clomiphene citrate (clomid) (50%), suffering from lower abdominal pain and Darker or brown vaginal spotting.

The most site of presence the ectopic pregnancy in

Ampullary of fallopian tube, more management used to treat EP is Methotrexate IM.

Also, there is no significant relationship between the studied variables in table (5) and ectopic pregnancy except use Clomiphene citrate (clomid) and used of artificial insemination had significant relationship.

The age is consider one factor that increase the incidence of ectopic pregnancy as the study done by Shayestehm et al 2014, reported highly improbable an increase in chromosomal abnormalities in the trophoblastic tissue be caused by advanced maternal age (19, 20yrs). In addition, the fallopian tube function decreased in effectively transport the ovum to the uterus during increase maternal age. However, these hypotheses remain to be tested ⁽⁵⁾.

In this study the educational level is important to women for knowing and following their health condition like the study that indicated the social and demographic factors determining the level of awareness of the signs and symptoms of ectopic pregnancy ⁽⁶⁾.

The study shows that more patient with ectopic pregnancy is treated with ART in the past and Use the ART put the woman at risk for development ectopic pregnancy as the study done by Cihan K. & Eray Ç. Mentioned that ART and ectopic pregnancy and associated risk factors have increased the incidence of an ectopic pregnancy, so the exact method that bind the ectopic pregnancy and ART still between ectopic pregnancy and ART still ambiguous. After the IVF the most common risk factors are ectopic pregnancy which include (Day of transfer, fresh or frozen-thawed cycle single or double transfer). also mentioned that ectopic pregnancy will happened at day 5 blastocyst transfer that the day 3 blastocyst transfer, and frozen-thawed cycle has lower risk of ectopic implantation than fresh cycle ⁽⁷⁾.

Table (2) shows that most women with ectopic pregnancy in Baghdad city had significance relationship with the use of Clomiphene citrate (clomid). In the summary of product characteristics of clomid (January

2020) mention that clomid increase the chance of ectopic pregnancy in women use it for treat fertility, Clomid uses lead to Ovarian Hyperstimulation Syndrome (OHSS) which is most common causes of EP. Clomiphene has direct effect on pituitary gland to release more amount of FSH and LH therefore the estrogen receptors are blocked this pose to increase the rate of EP in future confirm by ⁽⁸⁾.

In the study performed at Arash Women Hospital, Tehran, shows that long duration of treated with ovarian hyper stimulation (clomid) lead to increase the level of estrogen which consider as a direct cause of ectopic pregnancy (EP) ⁽⁹⁾.

In this study it was observed that there is a relationship between used of artificial insemination and ectopic pregnancy, as in the study conducted in Arak Taleghani Hospital, Iran. which showed that women's who undergo artificial insemination, that used to treat some cases of infertility especially tubal factor infertility, after 30 days of this treatment suffer from ectopic pregnancy which was diagnosed by ultrasound ⁽¹⁰⁾.

The diagnosis of ectopic pregnancy associated with some signs and symptoms like miss one or two menstrual period and Darker or brown vaginal spotting which appear high in this study while the study in Nigeria showed that 80 % of study sample have abdominal pain when come to hospital, Also the study show that the most types of ectopic pregnancy was in the ampullary and isthmus site of fallopian tube (66.7%,18.3%) respectively, this result corresponding with result of the study of done in south-east Nigeria that showed (n:52/82) of women have ampullary ectopic pregnancy ⁽¹¹⁾.

The study shows that 50% of women are treated by methotrexate IM and 35% of them treated by mixed of surgical and use of methotrexate drug methotrexate drug is a folic acid antagonist that inactivates dihydrofolate reductase and de novo synthesis of purines and pyrimidines, and therefore, cellular DNA. The most common action of methotrexate is increasing the trophoblastic cell division and not allow these cells to

become multiplying ⁽¹²⁾.

American society for Reproductive Medicine 2013, mention that the dose of MTX depended on the level of hCG in blood, so the dose may be single or double. Thia mentioned that 84.5% of women with ectopic pregnancy are receiving treatment by MTX and it was benefit to remove ectopic pregnancy ⁽¹³⁾. The most management of EP is Methotrexate IM this result is disagreement with another study done by Togas Tulandi which fined that the surgical treatment is the best solution to EP ⁽¹⁴⁾.

Ectopic pregnancy is a potentially life-threatening condition. While surgical method is better way to treat the ectopic pregnancy. In the 1980's discover that the early diagnosis is eased the initiation of methotrexate as a medical therapy for EP , With the routine use of early ultrasound, diagnosis of ectopic pregnancy can be established early, and medical treatment can be administered in most cases ⁽¹⁴⁾.

Conclusions

The study concluded that there is significant relationship between the use of Clomiphene citrate (clomid) and ectopic pregnancy and the most benefit treatment for ectopic pregnancy is methotrexate.

Recommendation:

The study recommended a future study on ovulation induction, training program about the effect of ovulation induction especially (clomid) on women health

Conflict of Interest: Nil

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