

# Effectiveness of follow up Infertile Women's Commitment to Implement in Vitro Fertilization Protocols

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**Abstract- Background:** Infertility is the inability of a person to reproduce by natural means. Infertility may describe a woman who is unable to conceive as well as being unable to carry a pregnancy to full term. There are many biological and other causes of infertility, including some that medical intervention can treat. Infertility rates have increased by 4% since the 1980s, mostly from problems with fecundity due to an increase in age. About 40% of the issues involved with infertility are due to the man, another 40% due to the woman, and 20% result from complications with both partners <sup>(1)</sup> In vitro fertilization and embryo transfer (IVF-ET) was first successfully used in humans over 25 years ago; since then, more than one million children have been conceived using this technology. IVF is a procedure designed to enhance the likelihood of conception in couples for whom other fertility therapies have been unsuccessful or are not possible. It is a complex process and involves multiple steps resulting in the insemination and fertilization of oocytes (eggs) in a laboratory. The embryos created in this process are then placed into the uterus for potential implantation. Each stage of the procedure is associated with specific risks, IVF may provide a couple who has been otherwise unable to conceive with a chance to establish a pregnancy <sup>(2)</sup>.

**Objective:** 1. To assess women's commitment to implementation of In Vitro Fertilization 2. To find out the outcome of In Vitro Fertilization

**Methodology:** Non-probability (purposive sample), the study sample consists of (60) infertile women who were selected from Kamal Al-Samarae Hospital. The study group consists of (30) infertile women was exposed to follow up and (30) women is control group the criteria of this sample was infertile women in reproductive age, with different educational levels in the public department were involved in IVF program.

**Results:** In the study group: there are (20) of women using short protocol and (10) using long protocol. The total number of study group was (30), (9) of the become pregnant (5) of them using short protocol and (4) of them using long protocol. In the control group: there are (20) of women using short protocol and (10) using long protocol. The total number of study group was (30), (2) of the become pregnant and were using short protocol

**Conclusions:** Results shows that concerning with study sample, observed significant relationships should be informative rather than simply significant level was not achieved, as well as long protocol four times concerning study sample are better than short protocol. In addition to that, results shows that concerning with control sample, no significant relationships are accounted as well

as two types of protocol either long or short gives the same responding.

Results shows that significant relationships are accounted as well as study sample are recorded six times better than controlled.

**Recommendations:** the study recommended that all the infertile women should be exposed to the implementation of the follow up and call the patients by phone and through the interview with patient when they comes to hospital to instruct them about their protocols .

**Index Terms-** Infertility, Infertile women, IVF.

## I. INTRODUCTION

Infertility, defined as the inability to become pregnant after one year of unprotected sex, is a problem faced by nearly 6.1 million Americans that's nearly 10 percent of men and women of reproductive age. Because this problem is so prevalent, fertility treatments abound. Assisted reproductive technology (ART) is a group of fertility treatments that involve both the sperm and the egg. In vitro fertilization (IVF) is the most common type of ART. In IVF, the sperm fertilizes the egg outside the body, and doctors implant it into the woman's uterus in hopes of a successful pregnancy. Other forms of ART include intracytoplasmic sperm injection (ICSI), gamete intrafallopian transfer (GIFT) and zygote intrafallopian transfer (ZIFT) The history of IVF is relatively short. Louise Brown of England was the first baby born via IVF, in 1978. The next IVF baby was born later that same year in India. Soon, people started calling these infants "test-tube babies." In 1981, the first American test-tube baby was born, and the number has continued to increase each year <sup>(3)</sup>. IVF was designed for the treatment of severe tubal disease. Infections, inflammations, endometriosis and other conditions may cause irreparable damage to the fallopian tubes. Since the fallopian tube is the only place in the female body where normal fertilization can occur, if both tubes become blocked, pregnancy becomes difficult or impossible. IVF allows for successful fertilization outside the fallopian tube, thus bypassing the problem area. Tubal disease remains one of the most common indications for IVF. Another common indication for IVF is low sperm counts. Because IVF allows to super concentrate sperm during fertilization, successful fertilization can occur even when a male partner has a low count Because IVF

allows to super concentrate sperm during fertilization, successful fertilization can occur even when a male partner has a low count. In recent years a process has been developed where a single sperm can be injected into an egg to cause fertilization, a procedure called intracytoplasmic sperm injection, commonly referred to as ICSI. ICSI enables fertilization in even the every lowest of sperm counts <sup>(4)</sup>. In order to maximize success rates with in vitro fertilization. There are several ovarian stimulation medication protocols that are used to stimulate the ovaries to make enough follicles and eggs. Without stimulating medications, the ovaries make and release only 1 mature egg per menstrual cycle month <sup>(5)</sup>.

## II. METHODOLOGY

The follow up is made through the phone and interview with patients when they come to hospital. <sup>(6)</sup> The Instructions that gives to the women during the follow up includes: Information about IVF procedure.

Teaching the women about the importance of the commitment in the time of taking their medications such as, injections some of injection take at the morning and the other take at the evening in certain time according to the doctor's order. Teaching the women about the side effect of medications. <sup>(7)</sup> Teaching the women about the correct site of injection because some of injection should be inject intramuscular and other inject subcutaneously. <sup>(8) (9)</sup> The correct way to keep the medications cold when the woman transport it from hospital to her home to prevent damages of this medications by keep this medication cold by using of ice. information about save of medication <sup>(10)</sup> .because this medications consist of hormone that damaged in the hot and in the freeze. The woman should be keep it in the door of refrigerator. Information about the importance of commitment in a time of injection.

Information about the complications of IVF may be occurring.

## III. RESULTS AND FINDINGS

### Part 1: Distribution of Socio-Demographical Characteristics variables:

Table (4-1) shows distribution of studied groups (with and without) follow up of IVF protocols, in light of "Socio-Demographical Characteristics" variables (SDCv.), as well as comparisons significant are obtained to be sure that two independent groups are thrown from the same population concerning of that variables.

Table (4-1): Distribution studied groups according to Socio-Demographical Characteristics variables (SDCv.)

SDCv.	Classes	(with follow up)		(without follow up)		C.S. <sup>(*)</sup> [P-value]
		No.	%	No.	%	
Age of Wife Yrs.	< 20	1	3.3	0	0	C.C.=0.294 P=0.339 (NS)
	20 -	5	16.7	7	23.3	
	25 -	7	23.3	9	30.0	
	30 -	8	26.7	8	26.7	
	35 -	5	16.7	6	20.0	
	40 - 50	4	13.3	0	0.0	
	Mean ± SD	30.5 ± 6.61		28.83 ± 5.82		
Age of Husband Yrs.	20 -	0	0	2	6.7	C.C.=0.261 P=0.497 (NS)
	25 -	5	16.7	5	16.7	
	30 -	6	20	8	26.7	
	35 -	6	20	8	26.7	
	40 -	11	36.7	6	20	
	45 - 50	2	6.7	1	3.3	
	Mean ± SD	36.33 ± 6.37		34.2 ± 6.35		
Rh : Wife	Pos.	28	93.3	29	96.7	C.C.=0.076 P=0.554 (NS)
	Neg.	2	6.7	1	3.3	
Rh : Husband	Pos.	30	100	29	96.7	C.C.=0.129 P=0.313 (NS)
	Neg.	0	0	1	3.3	
Consanguinity	Relative	16	53.3	19	63.3	C.C.=0.101 P=0.432 (NS)
	Not Relative	14	46.7	11	36.7	
Education: Wife	Illiterate	1	3.3	3	10.0	C.C.=0.179 P=0.575 (NS)
	Graduate of Primary	11	36.7	11	36.7	
	Graduate of Secondary	12	40.0	9	30.0	

	<b>Higher education</b>	<b>6</b>	<b>20.0</b>	<b>7</b>	<b>23.3</b>	
<b>Education: Husband</b>	<b>Illiterate</b>	<b>1</b>	<b>3.3</b>	<b>1</b>	<b>3.3</b>	<b>C.C.=0.156 P=0.681 (NS)</b>
	<b>Graduate of Primary</b>	<b>8</b>	<b>26.7</b>	<b>11</b>	<b>36.7</b>	
	<b>Graduate of Secondary</b>	<b>9</b>	<b>30</b>	<b>11</b>	<b>36.7</b>	
	<b>Higher education</b>	<b>12</b>	<b>40</b>	<b>7</b>	<b>23.3</b>	
<b>Occup. Wife</b>	<b>Employer</b>	<b>24</b>	<b>80</b>	<b>26</b>	<b>87.7</b>	<b>C.C.=0.089 P=0.488 (NS)</b>
	<b>House wife</b>	<b>6</b>	<b>20</b>	<b>4</b>	<b>12.3</b>	
<b>Occup. Husband</b>	<b>Employer</b>	<b>15</b>	<b>50</b>	<b>18</b>	<b>60</b>	<b>C.C.=0.100 P=0.436 (NS)</b>
	<b>Free Job</b>	<b>15</b>	<b>50</b>	<b>12</b>	<b>40</b>	
<b>Marriage- Wife</b>	<b>Married before</b>	<b>2</b>	<b>6.7</b>	<b>1</b>	<b>3.3</b>	<b>C.C.=0.201 P=0.284 (NS)</b>
	<b>First wife</b>	<b>26</b>	<b>86.7</b>	<b>23</b>	<b>76.7</b>	
	<b>Second wife</b>	<b>2</b>	<b>6.7</b>	<b>6</b>	<b>20.0</b>	
<b>Marriage- Husband</b>	<b>Married before</b>	<b>2</b>	<b>6.7</b>	<b>3</b>	<b>10</b>	<b>C.C.=0.193 P=0.313 (NS)</b>
	<b>Not married before</b>	<b>27</b>	<b>90</b>	<b>23</b>	<b>76.7</b>	
	<b>Polygamous</b>	<b>1</b>	<b>3.3</b>	<b>4</b>	<b>13.3</b>	

(\*) NS: Non Sig. at  $P \geq 0.05$ ; C.C. : Contingency Coefficient.

Results shows that no significant differences at  $P > 0.05$  are accounted between studied groups, which indicating that two independent groups are thrown from the same population in light of (SDCv.), and that are more reliable for this study, since any meaningful differences may be registered among the studied outcomes should be interpreted by effectiveness of IVF protocols in light of follow up or not.

*Part 2: Distributions of reproductive status:*

**Table(4-2): Distributions of reproductive status at the studied samples with comparisons significant**

Reproductive Status	Resp.	(with follow up)		(without follow up)		C.S. (*) [P-value]
		No.	%	No.	%	
Previous Pregnancy	Yes	12	40	8	26.7	<b>C.C.=0.140 P=0.273 (NS)</b>
	No	18	60	22	73.3	
Previous Ectopic Pregnancy	Yes	2	6.7	2	6.7	<b>C.C.=0.000 P=1.000 (NS)</b>
	No	28	93.3	28	93.3	
Previous abortion	Yes	5	16.7	6	20	<b>C.C.=0.043 P=0.739 (NS)</b>
	No	25	83.3	24	80	
Previous birth of deformed baby	Yes	0	0	0	0	<b>C.C.=0.000 P=1.000 (NS)</b>
	No	30	100	30	100	
Previous delivery	Yes	8	26.7	4	13.3	<b>C.C.=0.164 P=0.197 (NS)</b>
	No	22	73.3	26	86.7	
Puerperal fever ( in a secondary infertility)	Yes	0	0	0	0	<b>C.C.=0.000 P=1.000 (NS)</b>
	No	30	100	30	100	
Fallopian tube obstruction	One tub	2	6.7	2	6.7	<b>C.C.=0.133 P=0.584 (NS)</b>
	Both of them	1	3.3	3	10	
	Opened tubes	27	90	25	83.3	
Pituitary Gland Disorders	Yes	5	16.7	3	10	<b>C.C.=0.098 P=0.448 (NS)</b>
	No	25	83.3	27	90	
Elevated of Prolactine hormone	Yes	11	36.7	13	43.3	<b>C.C.=0.068 P=0.598 (NS)</b>
	No	10	63.3	17	56.7	
Duration of infertility Yrs.	< 5 yrs.	5	16.7	5	16.7	<b>C.C.=0.181 P=0.566 (NS)</b>
	5 - 9	15	50	13	43.3	
	10 - 14	7	23.3	11	36.7	
	15 - 19	3	10	1	3.3	
Type of infertility	Primary	23	76.7	27	90	<b>C.C.=0.176 P=0.166 (NS)</b>
	Secondary	7	23.3	3	10	
The causes of infertility	Yes	21	70	23	76.7	<b>C.C.=0.075</b>

related to your husband	No	9	30	7	23.3	P=0.559 (NS)
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(\*)NS: Non Sig. at P>0.05; C.C. : Contingency Coefficient.

Table (4-2) shows distribution of observed frequencies, and percentages of reproductive status, as well as relationships among studied groups with comparisons significant, which shows that two independent groups are thrown from the same population in light of (Reproductive Status), and that are more reliable for this study, since any meaningful differences may be registered among final outcomes should be interpreted by effectiveness of IVF protocols in light of follow up or not.

*Part 3: Effectiveness Distribution IVF protocols in light of follow up or not :*

Relationship among studied groups (with and without follow up) protocol and final results of program either success /or failure program, contingency coefficients are constructed in table (4-3) within comparisons significant, as well as an odds ratio, and cohort of failure results among stating with and without follow up of protocols

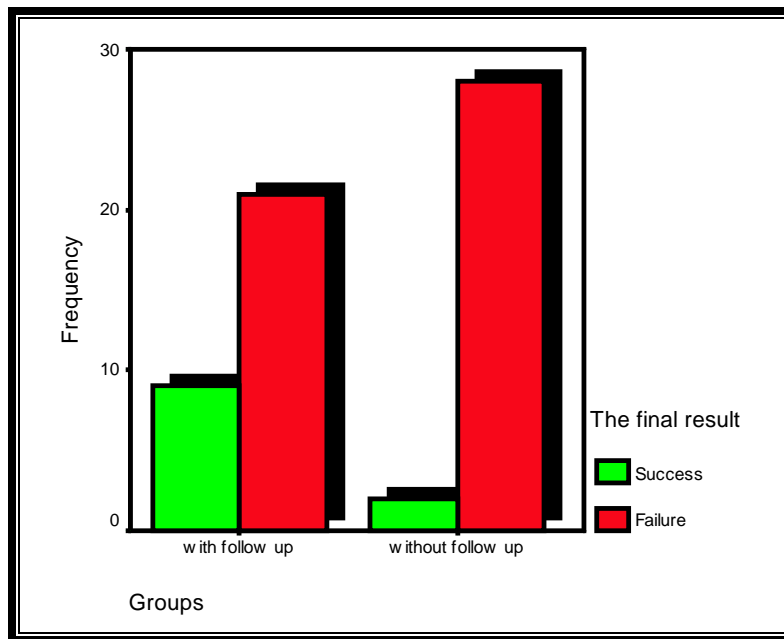
Table(4-3): Distribution of final results of program and studied groups (with and without) IVF protocols with comparisons significant

Groups	No. and Percent	The final result of program		Total	C.S. (*) [P-value]
		Success	Failure		
With follow up	No.	9	21	30	C.C.=0.289 P=0.020 (S) Odds Ratio (1 : 6) 95% C.I. (1.17 : 30.73) Cohort :(Success) (1 : 4.5) 95% C.I. (1.06 : 19.11)
	% Groups	30%	70%	100%	
	% program	81.8%	42.9%	50%	
Without follow up	No.	2	28	30	
	% Groups	6.7%	93.3%	100%	
	% program	18.2%	57.1%	50%	
Total	No.	11	49	60	
	% Groups	18.3%	81.7%	100%	
	% program	100%	100%	100%	

(\*) S: Sig. at P<0.05; C.C. : Contingency Coefficient.

Results shows that concerning with follow up group, observed significant relationships are accounted significant different at P<0.05. In addition to that, protocols with follow up stating six times of successes outcomes better than without follow up protocols, with too long an expected successfulness of final outcomes according to 95% confidence interval for preceding related rate, which stating more than thirty times could be achieved due to applicable of follow up protocols. In addition to that, cohort to success outcomes are accounted four and a half times of effectiveness concerning with follow up protocols in matching of without follow up group, with too long an expected successfulness of final outcomes according to 95% confidence interval for preceding related rate, which stating more than nineteenth times could be achieved due to applicable of follow up protocols.

Figure (4-3) represent graphically distribution of studied groups (with and without) IVF protocol.



**Table (4-3): Cluster bar chart of final results of program and studied groups (with and without) IVF protocols**

IV. DISCUSSION OF THE RESULTS

Table (4-1) shows observed frequencies, and percentages of the studied socio-demographical characteristics variables (SDCV.) which are distributed according to studied samples (with, and without follow up), as well as comparisons significant for relationships. Results shows that no significant differences at  $P>0.05$  are accounted between the two samples, and that are more reliable for this study, since any meaningful deviation may registered between the studied samples should be interpreted for effectiveness of applying studied follow up. Relative to subject's "Age Groups", majority of the studied samples are reported at the age ranged (25 – 29) years for wife, and (40 - 44) years for husband, then followed with subject's "Rh", results indicated that most of the studied individuals had a positive results, and they are accounted in light of with and without follow up 18(93.3%), and 29(96.7%) for wife, as well as 30(100%), and 29(96.7%) for husband, then followed with subjects of "Consanguinity status", results indicated that sample of with follow up are accounted 16(53.3%), while without follow up sample are accounted 19(63.3%), then followed with subject's "Level of Education", results shows that more of fifty percent of studied sample of "wife" had graduated secondary school and high educated, and they are accounted for 18(60.0%) and 17(53.3%), as well as sample of "husband" are accounted 21(70.0%) and 18(60.0%), then followed with subject's "Occupation", results shows that most of the studied samples in light of "wife" had recorded employed, and they are accounted 24(80%) and 26(87.7%), as well as sample of "husband" had recorded employed, and accounted in light of with and without follow up 15(50.0%) and 18(60.0%) respectively, and the leftover had free job. Marriage status for wife had recorded mostly first wife, and accounted in light of with and without follow up 26(86.7%) and 23(76.7%) respectively, then finally followed with subject's "Marriage status" for husband had recorded mostly not married before, and

accounted in light of with and without follow up 27(90%) and 23(76.7%) respectively

Table (4-2) shows distribution of the observed frequencies, and percentages of reproductive status, as well as relationships among studied samples with comparisons significant, and as follows:

a.Regarding to subjects "Previous Pregnancy", results indicated that there has been no significant different at  $P>0.05$  between studied samples, with 8(26.7%) at the control sample, while 12(40%) individuals are accounted at the study sample .

b.Regarding to subjects "Previous Ectopic Pregnancy", results indicated that there has been no significant different at  $P>0.05$  accounted between studied samples, with 2(6.7%) individuals are accounted at the control and study samples .

c.Regarding to subjects "Previous abortion", results indicated that there has been no significant different at  $P>0.05$  accounted between studied samples, with 6(20%) at the control sample, while 5(16.7%) individuals are accounted at the study sample .

d.Regarding to subjects "Previous birth of deformed baby", results indicated that there has been no individuals are accounted at the study and control samples .

e.Regarding to subjects "Previous delivery", results indicated that there has been no significant different at  $P>0.05$  accounted between studied samples, with 4(13.3%) at the control sample, while 8(26.7%) individuals are accounted at the study sample. Relationship among studied samples (with and without follow up) and final results of program either success of program (pregnancy occur) or failure, contingency coefficients are constructed in table (4-3) within comparisons significant, as well as an odds ratio.

Results shows that concerning with study sample, observed significant relationships should be informative rather than simply significant level was not achieved, as well as long protocol four times concerning study sample are better than short protocol. In

addition to that, results shows that concerning with control sample, no significant relationships are accounted at  $P > 0.05$ , as well as two types of protocol either long or short gives the same responding.

Figure (4-3) represent graphically distribution of studied samples (with and without follow up) according to different types of protocols.

## V. RECOMMENDATION

1. The follow up is very important to implement the commitment of IVF protocols by phone and interview with the patient during they comes to hospital.

2. The follow up is very effective and make changes in some of wrong practices of the patients such as some of woman was neglect the correct way in save the medication and keep the medication in the freeze and through the follow up this wrong practice was corrected and other group of patient was keep the medications outside of the refrigerator and that make the medications exposure to the heat and causes damages of this medications.

3. The nurse should be instruct the patients about protocols that used for her.

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