

A Study of Outcome of In-Utero Insemination in Unexplained Infertility Cases with Various Ovulation Inducing Agents

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ABSTRACT

Introduction: Infertility has increased these days because of delayed marriages, increase stress, job problems. In unexplained infertility cases basic investigations like semen analysis, tubal patency and ovulation are normal. In these cases after ovulation induction with clomiphene, letrozole and gonadotrophin and doing IUI has increased pregnancy rate as compared to expectant management. The study was aimed to see the pregnancy rate after IUI in patients with unexplained infertility using different ovulation inducing agents and to compare the results with expectant group.

Material and methods: 120 patients with unexplained infertility taken over a period of 2 years at SSH BHU Varanasi. IUI was done in all cases 4 cycles. The Outcome was noted in the form of positive pregnancy test.

Results: Total 13.33 percent patients conceived. Maximum patients conceived after gonadotrophin injection (6.6%). Majority patients were of age less than 35 years. 70 percent patients were from rural background. 60 percent patients belong to low socioeconomic status.

Conclusion: It is concluded that IUI has a role in unexplained infertility cases and poor patients who cannot afford the cost of IVF-ET. In-utero insemination after use of ovulation induction drugs has better results than expectant management. The induction with gonadotrophins has better results than clomiphene and letrozole.

Keywords: Unexplained Infertility, IUI, Pregnancy, Ovulation Inducing Agents

INTRODUCTION

Infertility is defined as inability to achieve pregnancy after 12 months of unprotected sex. Infertility can be primary and secondary. The infertility can be due to female factors or male factors, combined and unexplained. The couples who present with infertility evaluation 30 to 50% of them have unexplained infertility. Infertility is a major problem in present time. This problem of infertility increased because of delay in age of marriage, stress and job problems. There are so many treatment options available these days. According to ICMART the definition of unexplained infertility is that these couples have apparently normal ovarian function, normal fallopian tubes, uterus, cervix and pelvis, adequate coital frequency, apparently normal testicular function (Zegers-Hochschild et al 2017). Treatment of unexplained infertility can range from expectant management to IUI, IVF-ET. Every patient of infertility needs individualized approach taking into consideration age, years of infertility. In unexplained infertility cases it is important to decide which is the cost effective treatment for them.¹⁻³

IUI is very cost effective and less invasive procedure. It is a good alternative to costly procedure like IVF-ET for couples who cannot afford costly treatment. There are studies which show good results with ovulation induction and intrauterine insemination. The commonly used drugs for ovulation induction are clomiphene, letrozole and gonadotrophins.^{4,5}

In this study we are going to compare the pregnancy rates with different ovulation inducing agents.⁶⁻⁸ In all cases intrauterine insemination is done after ovulation. This will also be compared with expectant management group.⁹⁻¹¹

The study was aimed to see the pregnancy rate after IUI in patients with unexplained infertility using different ovulation inducing agents

MATERIAL AND METHODS

This study was conducted in Department of Obstetrics and Gynaecology over a period of two years at SSH Hospital BHU Varanasi. Total 120 cases of unexplained infertility included in this study. Unexplained infertility case means patient has patent fallopian tube, normal uterine cavity and normal semen.

Inclusion criteria

- Patient with patent fallopian tube
- Normal semen analysis
- Confirmed ovulation on TVS Follicular monitoring
- Age group 20 to 35 years

Exclusion criteria

- Fibroid uterus
- Endometriosis
- Uterine anomalies
- Azoospermia

Total 120 cases of unexplained infertility of age group 21 to 35 years were included in the study. These patients were divided into four groups. In first 30 patients ovulation induction was done with clomiphene, in 2nd with letrozole,

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in 3rd with gonadotrophins and in 4th expectant management was done.

In First group clomiphene was given from day 2 of period to day 6 and dose was 50 mg. in 2nd group tab letrozole was given from day 2 to day 6 and dose was 2.5 mg. In 3rd group inj gonadotropin 75 IU Intramuscular given from day 2 of cycle till the size of dominant follicle becomes 18 mm. In the 4th group no drug was given.

In all cases Trans vaginal sonography done for follicular monitoring from day 9 of cycle. Inj human chorionic gonadotrophin used for ovulation and micronized progesterone support given after IUI for 15 days.

Maximum 4 to 6 cycles of IUI done. Outcome was seen in the form of positive pregnancy test and ultrasound at 7 weeks of pregnancy.

Statistical analysis done by using SPSS.

RESULTS

From our study the following observations were noted.

Incidence of infertility

Total patients in Gynaec OPD= 60000

Total infertility patients = 2400

Incidence: $2400/60000 \times 100 = 4\%$

In this male infertility cases are not included. They mainly report to and referred to urology.

The maximum patients were of age group 25 to 30 years (75%). Twenty five percent patients were having age more than 30 years (table-1).

In our study 70% patients were of primary infertility and 30% were of secondary infertility (table-2).

54% patients belong to low socioeconomic status and only 5.83% belong to upper socioeconomic status. Forty percent patient were of middle socioeconomic status (table-3).

8.33% patients were illiterate and 30% were graduate. In this study we found that 16.66% patient had completed matriculation and 29.16% studied uptill class 12th (table-4). 73.33% patients were from rural background (table-5). 16.66% patient had BMI > 30 and 17.5% had BMI < 23. In the above table we can see that 20.83% patient had BMI between

Age	Number	Percentage
20 -25	20	16.66
25-30	70	58.33
30-35	30	25

Table-1: Age N=120

Type	Number	Percentage
Primary	84	70
Secondary	36	30

Table-2: Type of infertility n=120

Parameter	Number	Percentage
Low	65	54.16
Middle	48	40
Upper	7	5.83

Table-3: Socioeconomicstatus N=120

Parameter	Number	Percentage
Illiterate	10	8.33
Uptill class 10 th	20	16.66
10 th to 12 th standard	35	29.16
Graduate	36	30
Postgraduaduate	19	15.83

Table-4: Education status n=120

Parameter	Number	Percentage
Rural	88	73.33
Urban	32	26.66

Table-5: Residence n=120

BMI	Number of patients	Percentage
< 23	21	17.5
23 To 25	32	26.66
25 To 28	25	20.83
28 to 30	22	18.33
>30	20	16.66

Table-6: Body mass index N=120

Parameter	Number	Drop out numbers	Number of patients included
Clomiphene	30	2	28
Letrozole	30	1	29
gonadotrophin	30	5	25
Expectant management	30	3	27

Table-7: n=120

S no	Drug used	No of patient become pregnant	Percentage
Group 1	Clomiphene	3	2.5%
Group 2	Letrozole	4	3.33%
Group 3	Gonadotropins	8	6.66%
Group 4	No drug used	1	0.83%
	Total	16	13.32%

Table-8: Pregnancy rate with various ovulation inducing agents n=120

25 to 28 (table-6). In first group clomiphene was used and in 2nd group letrozole. In 3rd group inj gonadotrophins were used. In fourth group no drug was used and it was expectant group (table-7). The table-8 shows that total 16 patients conceived out of 120. Maximum patients conceived with injection gonadotrophin (6.66%).in letrozole group 3.33% patients conceived while with clomiphene group 2.5% conceived

DISCUSSION

Unexplained infertility is diagnosed by exclusion. If the basic investigations like semen analysis, tubal patenent, ovulation and uterine cavity are normal only then it can be labeled as unexplained infertility.¹²⁻¹⁵ There is non uniform definition of unexplained infertility. The incidence of unexplained

infertility varies from 15 to 30% (ref). the treatment of unexplained infertility varies from expectant management or use of assisted reproductive technologies e.g IUI, IVF etc. Unexplained infertility is a subject on which agreement is rarely found among practitioners.

These days IVF is more commonly used than simpler technique like IUI.¹⁶ So many studies had shown that IVF has better pregnancy rate as compared to stimulated IUI. In developing country like India people of low socioeconomic status cannot afford the cost of IVF. So in-utero insemination plays an important role. It is cost effective. If we do IUI after ovarian stimulation the results are much better than unstimulated IUI (REF). Intrauterine insemination has increased the concentration and motility of sperm and it also bypassed the unknown cervical factor of infertility.¹⁷⁻¹⁸

It is also debatable that how many cycles of iui should be done. A study done by (ref) shows that IUI should be done for 3 cycles only.¹⁹

The clinical question to be addressed is how to achieve best outcome possible for the patient. there is no definite answer as to what should be the best approach to the management of couples with unexplained infertility.²⁰⁻²³

In our study we had done IUI after ovarian stimulation with various drugs E.G clomiphene, letrozole and gonadotrophins. We compared the outcome in the form of positive pregnancy test.²⁴⁻²⁵

In our study incidence of infertility is 4% and IUI is a par with the WHO which shows the prevalence of primary infertility in Uttar Pradesh is 3.6%. We enrolled 120 cases of unexplained infertility in our study.

CONCLUSION

In conclusion, a uniform definition for unexplained infertility is needed. There is need to research to identify more subtle causes of infertility. the best approach to the management of the couples should be based upon the resources, the age of the patient and the duration of infertility. there is need of multicentre randomized controlled trials for different modalities of treatment in unexplained infertility.

From our study it is seen that stimulated IUI is better than nonstimulated IUI AND expectant management. It is cost effective and feasible at low resources settings

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