ORIGINAL ARTICLE

EVALUATION OF ROLE OF INTRAUTERINE INSEMINATION IN INFERTILITY IN A TERTIARY CARE HOSPITAL

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ABSTRACT: The last few decades have witnessed a tremendous progress in the treatment of infertility. Intrauterine insemination (IUI) is such a technique in which the washed sperm is introduced in the uterine cavity in proper time IUI may be done using husband's semen (IUI-H) or donor's semen (IUI-D). The rationale of IUI is to overcome vaginal acidic pH, cervical mucus hostility and to deposit adequate number of highly motile and morphologically normal sperms near the fundal region of the uterus around the expected time of ovulation. This very study was targeted to evaluate the success rate of IUI using husband's semen (IUI-H) in terms of clinical pregnancies in infertile couples and to establish its role in the management of infertility. **AIMS AND OBJECTIVES:** To evaluate the pregnancy rate per cycle of IUI and also the associated prognostic factors and adverse effects, if any **MATERIALS AND METHODS :** In a prospective observational longitudinal study carried out over one year (from 1st June, 2011 to 31st May, 2012) in the Department of Obstetrics and Gynaecology, Eden Hospital,Medical College, Kolkata., total 53 couples fulfilling the inclusion criteria and exempted from the exclusion criteria were included. We included infertile couples with women in the age of 20-40 years, having anatomic defects of vagina or cervix, sexual dysfunction, minimum to mild endometriosis (AFS score ≤15), and chronic anovulatory menstrual cycles; male partners with anatomic defects of penis like hypospadius, semen volume in excess or deficit, sexual dysfunction, mild & moderate oligozoospermia, mild asthenozoospermia and mild teratozoospermia; and couples with unexplained infertility. Excluded were the women with bilateral tubal blockage, pelvic tuberculosis and severe pelvic endometriosis; male partners with azoospermia, severe oligoasthenoteratozoospermia, retrograde ejaculation and anejaculation and erectile dysfunction

After obtaining "Institutional Ethical Committee" clearance,and informed consent from each of them, history taking, baseline investigations including serology and basic infertility work up (semen analysis, ultrasonography, tubal patency test, hormonal evaluation) were done in each case. After ovulation induction serial folliculometry, single IUI , per cycle, was performed using husband's washed sperms 36 hour after hCG triggering. Maximum 6 cycles of IUI were performed in each couple. The outcome was noted in terms of clinical pregnancy. Thus total 143 IUI cycles were performed in 53 couples in the study. **RESULTS:** Out of total 143 IUI cycles conducted in 53 infertile couples, 14 cycles were successful in terms of confirmed pregnancy. The cycle fecundability, i.e., the pregnancy rate per cycle of IUI was 9.79%. The pregnancy rate per couple was 26.42%. Out of these 14 pregnancies, one woman (7.14%) had spontaneous abortion in 10th week of gestation. Total 8 pregnancies were reported to have ended in live birth, of which 5 was term delivery. At the time of end of this study, 5 women were continuing pregnancies. Thus live birth rate per cycle of IUI, i.e., cycle fecundity was at least 5.59%.The success of IUI depended on the number of cycles performed on a couple (maximum after 3rd cycle and no pregnancy reported after 6th cycle), the age of both of the partners (particularly the woman), duration and type of infertility, initial seminal parameters,

ORIGINAL ARTICLE

drugs used in COH, IMSC (inseminating motile sperm count), number and size of developing follicle sand endometrial thickness. Complications of IUI were mostly mild, commonest being pain. Mild OHSS occurred in 22.30% cycles and multiple pregnancy in only one cycle. However, medical and obstetric complications (diabetes, hypertension, ante-partum haemorrhage, preterm labour, IUGR) were not uncommon in pregnancies after IUI. But, no congenital anomaly was reported till the end of this study. **DISCUSSION:** IUI should be considered as cost-effective therapy for infertile couples in suitable cases. Our study supported the findings of different authors regarding cycle fecundability, fecundity, determinants of successful IUI and prognostic factors. There is little rationale to continue IUI beyond 6 cycles. Most of the complications were few and IUI does not increase the chance of congenital anomaly of the offspring. **CONCLUSION:** IUI should be considered as effective treatment option for many unfortunate infertile couples who attend Govt hospitals and cannot afford costly treatments like IVF. Proper case selection is important before this mode of therapy and needs proper pre-treatment evaluation of the couples.

KEYWORDS: Intrauterine insemination, unexplained infertility, male subfertility, ovarian hyperstimulation syndrome

INTRODUCTION: During the last two and half decades there has been a marked increase in patient population in all infertility clinics all over the world. The actual incidence varies according to definitions used. The WHO has estimated that infertility affects 50-80 million women worldwide & this may be an underestimate.[1] There is a realization that infertility is not a simple medical problem but there are legal, economic, moral and ethical issues that must be addressed.

The definition of infertility continues to be a debate. As per the American Society of Reproductive Practice Committee, "Infertility is a disease. The duration of failure to conceive should be twelve or more months before an investigation is undertaken unless medical history and physical findings dictate earlier evaluation and treatment".[2] However, it is not clear, what is meant by "failure to conceive".

The last few decades have witnessed a tremendous and steady progress in the treatment of infertility. Intrauterine insemination (IUI) is such a technique in which the washed sperm is introduced in the uterine cavity in proper time IUI may be done using husband's semen (IUI-H) or donor's semen (IUI-D). The rationale of IUI is to overcome vaginal acidic pH, cervical mucus hostility and to deposit adequate number of highly motile and morphologically normal sperms near the fundal region of the uterus around the expected time of ovulation.

In an attempt to improve conception rates IUI with husband's semen has been used in clinical medicines over 200 years. The first documented application of IUI was performed in London in 1770 by John Hunter.[3] In modern medicine, the technique was first reported by Dickinson in 1921.[4] However, it was until 1980s when IUI started to become popular. Over the past 25 years, there has been a substantial amount of research evaluating this method.

IUI is now considered as the most cost effective therapy for unexplained infertility and moderate male subfertility. In fact, these two are nowadays the commonest indications for IUI.[5]

The full benefits of IUI may not be obtained until details of the factors that control treatment outcome are known. One such factor is patient selection as inappropriate application of this therapy to whole of the infertile population will obscure its efficacy. If applied in judicious and comprehensive way, most of the women will conceive within first 3-4 cycles of IUI.

ORIGINAL ARTICLE

The success depends on age, duration and type of infertility, follicular count, semen quality and endometrial receptiveness. Consequently, those who do not succeed in this time frame should be reevaluated with a view of offering In-vitro fertilization (IVF) to them. Patient's preferences must be kept in consideration so that the physician can select the cases accordingly.

The semen preparation technique is a very crucial step in the success of IUI. It isolates a high concentration of motile and morphologically normal spermatozoa, necessary for any ART and also for IUI. Timing of insemination is important- the highest pregnancy rate is associated with IUI around the time of ovulation.[6] There are many evidences showing that single insemination gives same result as double insemination.[6, 7]

IUI with or without controlled ovarian hyperstimulation (COH) should be offered for 4-6 cycles, taking into account, the diagnosis, age of the patients, their affordability and preferences. There is little benefit, if any, beyond the 6th cycle.[8]

IUI is not a technique free of risks. Most side effects are mild like infection, pain, vasovagal response etc. But some may be serious like ovarian hyperstimulation syndrome (OHSS) and multiple pregnancy, which can be minimized if the cycle is cancelled when more than 3 co-dominant follicles are developing simultaneously.[9]

This very study was targeted to evaluate the success rate of IUI using husband's semen (IUI-H) in terms of clinical pregnancies in infertile couples and to establish its role in the management of infertility.

AIMS AND OBJECTIVES: The objectives of this study will be to find out:
1. The rate of clinical pregnancy per cycle of IUI (H) in infertile couples.
2. The pregnancy rates per infertile couple undergoing IUI (H)
3. The prognostic factors associated with successful IUI (H) in infertile couples
4. The adverse effects of IUI (H), if any.

MATERIALS AND METHODS: A prospective observational longitudinal study was carried out from 1st June, 2011 to 31st May, 2012 in the infertile couples attending the Out-patient Department, Department of Obstetrics and Gynecology, Eden Hospital, Medical College, Kolkata.

The inclusion criteria were-
1. Age group- Female partner- 20-40 years.
2. Regular frequent intercourse for more than 1 year but unable to conceive
3. Male factors like:
    *   Anatomic defects of penis like hypospadias
    *   Semen volume in excess or deficit
    *   Sexual dysfunction
    *   Male subfertility:
        Mild & moderate oligozoospermia (sperm concentration 5-20 x 10^6/ml).
        Mild asthenozoospermia (<50% sperms showing fast forward and slow progressive motility).
        Mild teratozoospermia (morphologically normal sperm 4-15% according to Kruger's strict criteria).

ORIGINAL ARTICLE

4. Female factors like:
   - Anatomic defects of vagina or cervix.
   - Sexual dysfunction.
   - Minimum to mild endometriosis (AFS score ≤15).
   - Chronic anovulatory menstrual cycles:
        PCOS (defined according to Rotterdam Consensus, 2003- ESHRE and ASRM)
        Hyperprolactinemia.
        Thyroid disorders
        Other causes of anovulation
5. Unexplained infertility.
6. All the above factors not responding to conventional medical/ surgical treatment.

The following couples were excluded:
   1. **Female factors:**
   - Bilateral tubal blockage.
   - Pelvic tuberculosis.
   - Severe pelvic endometriosis.
   2. **Male factors:**
   - Azoospermia (No sperm in the ejaculate, confirmed in three properly collected samples).
   - Severe oligoasthenoteratozoospermia (Sperm density $<5 \times 10^6$/ml, no motile sperms in the sample, <4% sperm morphologically normal according to Kruger's strict criteria).
   - Retrograde ejaculation and anejaculation.
   - Erectile dysfunction.

Total 53 couples fulfilling the inclusion criteria and exempted from the exclusion criteria were included in this study. After obtaining "Institutional Ethical Committee" clearance, informed consent form was signed by them. Detailed history taking, physical examination and review of past records were made. They were then subjected to routine investigations (haemogram, blood sugar, blood group, serology for HIV, Hep B, Hep C, VDRL), semen analysis, ultrasonography, hormone evaluation, laparoscopy/ hysterosalpingography. All of these investigations were obtained from a single reference laboratory to reduce variability of result interpretations.

Ovulation Induction was done using Clomiphene citrate 50-150 mg/day for 5 days or HMG/Purified FSH 75-150IU/day followed by hCG for triggering of ovulation in suitable time.

These cycles were monitored using serial Transvaginal sonography (TVS) to detect follicular size and number (Serial folliculometry) and endometrial thickness, Serum estradiol in some cases and ovulation was confirmed by urinary LH kit or TVS.

In each cycle, single IUI using husband's sperms was performed 36 hour after hCG triggering, after confirmation of ovulation by LH kit. After collection, husband's semen was prepared by Swim-up technique using Ham's F-10 sperm wash medium and final preparation was examined under microscope. Insemination was performed using soft tip IUI catheter and disposable (plastic) Cusco's bivalved vaginal wall speculum. After IUI, luteal phase support was given using natural micronized progesterone 200 mg/ day vaginally.

ORIGINAL ARTICLE

The outcome was noted in terms of clinical pregnancy. The women, who complained of missed period after IUI, were tested for pregnancy by urine pregnancy test, USG and in some cases by serum β-hCG titre. The couples having successful IUI, i.e., having pregnancy after IUI were followed up to determine pregnancy outcomes and complications, if any. The couples, having failed IUI were subjected to repeat IUI, until pregnancy was achieved or maximum 6 cycles of IUI have been done.

However, some couples were lost in subsequent follow up after one or more failed IUI cycles. Total 143 IUI cycles were performed in 53 couples in the study.

Whether there was any risk associated with IUI, was also judged. All the relevant data were collected for standard statistical analysis.

RESULTS: Total 143 cycles of IUI were performed in 53 couples (Table 1).

Number of IUI cycles	Number of couples	Total number of cycles
1	10	10
2	14	28
3	18	54
4	6	24
5	3	15
6	2	12
Total	**53**	**143**
Table 1: Total number of couples and number of IUI cycles performed on them		

The demographic profiles of the couples are shown in Table 2.

Characteristics	N= 53	
	Mean ± SD	**Range**
Age of female partners (years)	31.77 ± 4.01	21-39
Age of male partners (years)	35.75 ± 4.91	24-48
Duration of infertility (years)	6.60 ± 4.17	2-18
Table 2: Demographic profiles of the couples		

Most of the couples in this study suffered from primary infertility. Regarding the cause, most of the couples had single factor defect, of which male factor infertility was the commonest. In approximately one in each five couples (22.64%) had unexplained infertility. (Table 3)

ORIGINAL ARTICLE

Characteristics	Number of couples (N=53)	Percentage (%)
Type of infertility		
Primary infertility	33	62.26
Secondary infertility	20	37.74
Cause of infertility		
Single factor defect	27	50.94
Combined factors	14	26.42
Unexplained infertility	12	22.64
Table 3: Distribution of couples according to type and cause of infertility		

Table 4 shows the relevant IUI parameters. Most of the men had normal initial seminogram. Most women responded to Clomiphene citrate (CC) alone. During serial folliculometry, most of the women had one dominant follicle measuring >18 mm. If >3 follicles measuring >18 mm developed, the cycle was cancelled. The endometrial thickness on the day of hCG injection was 7-9 mm in most cases. In majority of cases IMSC (Inseminating Motile Sperm count) was ≥20 x 10^6.

Characteristics		Number	Percentage (%)	Mean ± SD
Initial semen parameters	Sperm density (10^6/ml)			38.04± 24.34
	Normal sperm morphology (%)			22.19 ± 11.72
	Sperm motility (%)			53.75 ± 9.98
Drugs used for ovulation induction	CC 50 mg/d	20	37.74	
	CC 100 mg/d	12	22.64	
	CC 150 mg/d	5	9.43	
	CC + FSH	15	28.30	
	FSH only	1	1.89	
Diameter of largest follicle (mm)				18.46± 1.35
Endometrial thickness (mm)				8.55 ± 1.45
IMSC (10^6)				43.38 ± 23.61
Table 4: Relevant IUI Parameters				

Out of those 143 cycles conducted in 53 couples, 14 cycles were successful in terms of confirmed pregnancy. Of these 14 pregnancies, one woman (7.14%) had spontaneous abortion at 10th week of gestation. Total 8 pregnancies ended in live birth, of which 5 had term delivery. Out of the 3 preterm births, two births were due to preterm labor and one was iatrogenic (intervention in ante-partum hemorrhage). The remaining 5 women were continuing pregnancy at the time of end of the study, i.e., 31st May, 2012. (Table 5) The cycle fecundability, i.e., the pregnancy rate per cycle of IUI

ORIGINAL ARTICLE

was 9.79% and the live birth rate per cycle of IUI, i.e., cycle fecundity was at least 5.59%. It should be noted that at least 57.14% IUI pregnancies resulted in live birth.

Total number of cycles	143	PR (pregnancy rate) per cycle of IUI	Cycle fecundability	9.79%
Total number of couples	53	PR per infertile couple undergoing IUI	Cycle fecundity	26.42%
Pregnancy after IUI	14			
Live birth (reported) after IUI	8	Live birth rate (reported) per cycle of IUI		5.59%
Table 5: Pregnancy outcome after IUI				

Outcomes	Number of pregnancies (N=14)	Percentage (%)
Spontaneous abortion	1	7.14
Live birth		
Preterm birth	3	21.43
Term birth	5	35.71
Continuing pregnancy during end of the study		
<28 weeks	3	21.43
>28 weeks	2	14.29

Table 6 shows relationship between number of IUI cycles and pregnancy rates. The pregnancy rate was highest after the 3rd cycle. The result of 6th IUI cycle was disappointing.

Number of IUI Cycles	Number of couples	Total number of IUI cycles	Cycles resulting in pregnancy	PR per cycle (%)
One	10	10	1	10.00
Two	14	28	3	10.71
Three	18	54	7	12.96
Four	6	24	2	8.33
Five	3	15	1	6.67
Six	2	12	0	00.00
Total	**53**	**143**	**14**	**9.79**
Table 6: Distribution of couples having pregnancy according to number of IUI cycles				

Table 7 analyses IUI outcomes in relation to different parameters. With increase of the woman's age, the chance of success of IUI decreases. Highest PR (22.22%) was reported in the age group 20-25 years. The effect of age of male partner was less pronounced than that of the female partner. With increased duration of infertility, the chance of conception after IUI decreased. In this series, maximum PR (38.46%) was observed in couples with duration of infertility 1-3 years.

ORIGINAL ARTICLE

Regarding etiology of infertility, maximum pregnancy rate was observed in case of PCOS, followed by unexplained infertility. If initial semen parameters were considered, the best results were obtained when sperm density was 10-20 x 10^{6}/ml; 10-15% sperms had normal morphology; and >50% sperms had normal motility. The combination of FSH and CC gave better results than CC alone. (10.34% versus 9.76%) However, the comparative efficacy of CC and FSH alone was not established in this study because only one woman used only FSH.

Considering the relationship between ovarian response and IUI response, higher the number of the follicles and their size, the better was the result. The best outcome (PR 33.33% per cycle) was associated with development of three dominant follicles (DF) and the diameter of the largest follicle more than 18 mm. Endometrial thickness 7-9 mm was associated with the highest PR (10.84%). However, unlike other variables, the effect is less prominent. There was positive correlation between IMSC and IUI outcome. Highest PR was observed in cycles with IMSC ≥20 x 10.[6]

Characteristics	Number of couples (N=53)	Number of cycles (N=143)	Number of pregnancy after IUI (N=14)	PR per cycle (%)
Age of women (years)				
20-25	6	9	2	22.22
26-30	11	26	3	11.54
31-35	28	74	7	9.46
36-40	8	34	2	5.88
Age of men (years)				
≤25	2	4	1	25.00
26-30	7	12	4	33.33
31-35	15	39	6	15.38
36-40	25	66	2	3.03
>40	4	22	1	4.55
Duration of infertility (years)				
1-3	7	13	5	38.46
4-5	27	68	6	8.82
6-10	9	20	2	10.00
11-15	7	26	1	3.85
>15	3	16	0	0
Type of infertility				
Single factor				
Male subfertility	17	37	4	10.81
Endometriosis†	1	3	0	00.00
PCOS*	4	8	2	25.00
Anovulation (without PCOS)	3	10	1	10.00
Unilateral tubal block	2	11	0	0
Combined factors	14	49	2	4.08

ORIGINAL ARTICLE

Unexplained infertility		12	25	5	20.00
Initial seminal parameters					
Sperm density (per ml)	≥20 x 10^6	36	106	10	9.43
	≥10 x 10^6 <20 x 10^6	10	21	3	14.29
	≥5 x 10^6 <10 x 10^6	7	16	1	6.25
Percentage of normal sperm morphology (%)	≥15	36	106	10	9.43
	≥10 <15	9	14	2	14.29
	≥4 <10	8	23	2	8.70
Sperm motility (%)	≥50	32	93	11	11.83
	<50	21	50	3	6.00
Drugs used in ovulation induction					
CC Only		37	82	8	9.76
CC + FSH		15	58	6	10.34
FSH Only		1	3	0	0
Follicular response (Dominant Follicle)					
Number	**Size (mm)**				
One	16-18		18	1	5.55
One	>18		46	4	8.70
Two	16-18		25	2	8.00
Two	>18		32	4	12.50
Three	16-18		19	2	10.53
Three	>18		3	1	33.33
Endometrial thickness (mm)					
<7			13	1	7.69
7-9			83	9	10.84
>9			47	4	8.51
IMSC					
81			81	10	10
42			42	3	3
21			21	1	1
Table 7: Determinants of IUI Outcome					

*Defined according to Rotterdam Consensus, 2003

† Only minimum to mild endometriosis (AFS score ≤15)

After IUI, the women are observed for any complications, both early and late. Most common was the transient pain during insemination, which was most common in the first cycle and mostly subsided with proper explanation, counseling and emotional support. In 3 cases, there were

ORIGINAL ARTICLE

vasovagal responses. Two women developed post-IUI infections characterized by late onset pain and irregular bleeding, which responded to analgesics and antibiotics.

In 43 cycles there were OHSS, which was more prominent in fertile cycles, especially with increased number and size of the follicles and was more common with use of FSH. In all cases, the OHSS was mild and subsided with conservative management. Only one woman had multiple pregnancy (twin), who was in 30th week of gestation at the time of the end of the study. (Table 8)

Complications	Number of cycles (N=143)	Percentage (%)
Pain during insemination	48	33.57
Vasovagal response	3	2.10
Post-IUI Infection	2	1.40
Mild OHSS	33	22.30
Multiple pregnancy	1	0.70
Table 8: Post-IUI Complications		

All the IUI-pregnancies were followed up carefully throughout the antenatal period to determine any complications by the earliest. (Table 9). Thus, IUI pregnancies may be associated with various medical and obstetric complications. So, IUI pregnancies should be considered as high-risk pregnancies. No congenital anomaly the offspring or any fetal death was reported till the end of the study.

Complications	Number of pregnancies (N=14)	Percentage (%)
Multiple pregnancy	1	7.14
Spontaneous abortion	1	7.14
Ante-partum hemorrhage (APH)	2	14.29
Hypertensive disorders in pregnancy	3	21.43
Diabetes in pregnancy	4	28.57
Preterm labor	2	14.29
IUGR	1	7.14
Table 9: Complications of pregnancies following IUI		

DISCUSSION: Intrauterine insemination (IUI) is one of the standard treatments offered to the infertile couples. The NICE fertility guidelines advocate for up to 6 IUI cycles for patients with unexplained infertility, male subfertility, cervical factor and minimum to mild endometriosis.[10] So, we performed maximum 6 IUI cycles in each couple.

Cycle fecundability is defined as the probability that a cycle will result in pregnancy. Steven R Bayer et al (2008)[11] showed that the success rate of IUI may range from 4% to 18% per cycle depending on the type of ovulation induction protocol. Norman FA et al, 2009 reported that the mean pregnancy rate per IUI cycle in most of the international literature is around 9%.[6] In our study, it was 9.79% which was consistent with other studies.

ORIGINAL ARTICLE

Cycle fecundity, on the other hand, is the probability that a cycle will result in a live birth. Various studies showed that the cycle fecundity ranges from 3% to 10% when IUI is performed using husband's washed sperms.[12-17] In our studies, out of the 14 women conceived, only one (7.14%) had spontaneous abortion. There were 8 live-births. However, 5 women were still continuing the pregnancy when the study was completed, with the good chance that these women may deliver live babies subsequently. Thus, the minimum live birth rate was 5.59%, which conforms to other studies.

Steven R Bayer et al (2008), reported that live birth rates decreased with increased maternal age.[11] In our study, the pregnancy rates in the age group 20-25 years, 26-30 years, 31-35 years and 36-40 years were 22.22%, 11.54%, 9.46% and 5.88% respectively.

Duration of infertility is important determinant of IUI and must be considered before useless wastage of money, time, energy and resources. In their study, Iberico et al (2004) found higher clinical pregnancy rates with infertility duration less than 3 years.[18] In our study, the highest pregnancy rate per cycle (38.46%) was observed in the couples having duration of infertility ≤3 years and thereafter declined rapidly.

The cause of infertility will obviously affect the selection of couples before IUI and also the success rate of IUI. Dickey et al (2002)[19] found that maximum cycle fecundability was observed when IUI was performed for ovulatory dysfunction, followed by male subfertility. In our case, the best result was obtained in PCOS (25% pregnancy rate per cycle), which is essentially a type of ovulatory disorder, followed by unexplained infertility (20%) and male subfertility (10.81%).

Lee RK et al (2002),[20] observed that success rates with IUI were highest with 14% or more sperms having normal morphology, intermediate with values between 4% and 14%, and generally quite poor when fewer than 4% sperms were normal. Our study obtained the best results when initial parameters were sperm density- 10-20 x 10^6/ml; 10-15% sperms had normal morphology; and >50% sperms had normal motility.

Empiric ovarian stimulation is commonly combined with IUI, based on observations that cycle fecundability is higher after combined treatment than after anyone of them alone.[12, 16] Botchan A et al (2001)[17] found that use of gonadotropin was associated with much more fecundity rate than Clomiphene citrate (CC) alone. In our study, the combination of FSH and CC gave better results than CC alone. However, the comparative efficacy of CC and FSH alone was not established in this study because only one woman used only FSH. However, the costs, logistic demands and the risks (OHSS. multiple pregnancy) of FSH were also higher.

Iberico et al (2004) demonstrated that increased follicular count strongly associated with higher pregnancy rates after IUI.[18] In our study, the success rates were 5.55-8.70%, 8.00-12.50% and 10.53-33.33% respectively with one, two and three dominant follicles.

IUI may lead to various complications, most of which are, fortunately mild. In our study, most common complication was pain, which was transient and subsided in most cases, even without any treatment. Serious complications include OHSS and multiple pregnancy which was observed in 22.30% and 0.70% of total cycles respectively. According to Dickey RP et al (2001) these can be minimized if the cycle is cancelled when more than 3 follicles are developing simultaneously.[9]

Wang JX et al (2002) [21] reported higher incidence of preterm birth associated with IUI pregnancies. In our study, also there was high incidence of preterm birth (at least 21.43%). However, no congenital anomaly was reported in this very study.

ORIGINAL ARTICLE

CONCLUSION: From this study, it can be concluded that Intrauterine Insemination (IUI) can make many infertile couples feel the taste of parenthood. Proper case selection is important before this mode of therapy and needs proper pre-treatment evaluation of the couples.

The success of IUI depends on the number of cycles performed on a couple. There is probably, little benefit of performing IUI beyond six cycles. So, if there is no conception after 6 cycles of IUI, the couples should be counseled to seek alternate options.

There are some factors that determine the likelihood of pregnancy after IUI. These factors should be kept in mind while selecting IUI as a treatment option and counseling the couples. The age of both of the partners (particularly the woman), duration and type of infertility, husband's semen parameters, methods of ovulation induction, follicular response, endometrial thickness all may have correlation with successful IUI outcome.

So, IUI should be considered as effective treatment option for many unfortunate infertile couples who attend Govt hospitals and cannot afford costly treatments IVF.

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