

Efficacy of Intra Uterine Insemination in the Treatment of Infertility

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Abstract: Problem statement: To assess efficacy of IUI in treatment of infertility. Tikrit teaching hospital. **Approach:** 42 infertile couple underwent standard evaluation for infertility, woman given medication to stimulate development of mature follicles, washed semen specimen placed in uterine cavity using sterile flexible catheter, coincide with ovulation time. **Results:** Of 42 infertile couples pregnancy occur in 26(61.9%), (19.1%) in primary and (42.9%) in secondary infertility, (21.3%) of them was male infertility and (40.6%) of unexplained infertility. Pregnancy was less with prolong duration of infertility (35.7%) with 3-5 years, (21.3%) with 5-7 years and (4.8%) with 8 and more years of infertility. **Conclusion:** IUI is less expensive, less invasive and effective in treatment of couples with unexplained or male infertility.

Key words: Male infertility, mature follicles, Insemination

INTRODUCTION

Infertility is defined as failure to achieve pregnancy for one year or more without.

Use of contraception during the child bearing period (Stephen and Chandra, 2000).

Infertility affects one in seven couples (Temploton, 1995).

Affects approximately 10-15% of couples (Stephen and Chandra, 2000).

In addition to its economic costs ,infertility has a major psychological impact. Oddene *et al.* (1999) report that infertile had depressive and anxiety symptoms four times more frequently than fertile woman.

Two common treatments for infertility are induction ovulation and intrauterine insemination (Voorhis *et al.*, 1997).

Super ovulation and IUI are used alone or in combination for treatment of unexplained infertility , male factor infertility and other cases of infertility in which women has obstructed genital tract and some ovarian function (Voorhis *et al.*, 1997). Table 1 lists types and causes of infertility.

Oral clomiphene citrate a popular choice for treatment of unexplained infertility, is in expensive, require little clinical monitoring and thought to correct sub fertile ovulatory dysfunction (Royal College of Obstetricians and Gynaecologists, 1998).

Antioestrogenic effect of clomiphene citrate on the endometrium, uterine blood flow, the quality of cervical

mucus could affect its ability to enhance pregnancy rates (Bilijan *et al.*, 1999).

IUI is the therapeutic process of placing washed spermatozoa transcervically into the uterine cavity for treatment of infertility, IUI theoretically allow arelatively higher number of motile spermatozoa to reach acolyte (Abdelkader and Yen, 2009).

This technique has recently joined the list of procedures licensed by Human fertilization and Embryology Authority in the U.K. and its one of the most widely used forms of assisted reproductive technology (Andersen *et al.*, 2008). Table 2 tabulates the pregnancy rates under different types of infertility.

A prolonged duration of infertility has been proposed as indication for use of assisted reproductive technology (Brosens *et al.*, 2004).

Despite increase in use of assisted reproductive technologies They still costly, invasive (7), IVF is associated with undesirable out comes these include preterm delivery leading to increase risk of new born prematurity and its can comitant cost and morbidity and increase rate of multiple gestation (Keddy *et al.*, 2007).

The pregnancy rate of IUI is repotted to 10-20 (7), based on etiology of infertility ,the highest rates were reported when IUI was used in patient with an ovulation who were undergoing ovulation induction therapy at time of IUI, male factor infertility and unexplained infertility, in patient with endometriosis , pregnancy rate were the lowest (Ahinko-Hakamaa *et al.*, 2007).

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The general process of artificial insemination has been used to treat a variety of physiological and psychological male and female infertility disorders (Omloet *et al.*, 2003).

Factors that may influence IUI outcome include the use of ovulation induction agents, semen analysis parameters, techniques used for sperm preparation and the timing and number of inseminations (Klein *et al.*, 2007).

IUI is contra indicated in women with cervical artesian, cervicitis, endometritis and bilateral tubal obstruction and in most cases of amenorrhea or severs oligospermia (Crosignani and Maggioro, 2009).

MATERIALS AND METHODS

This was a prospective study, a total of 42 infertile couples were seen in one year (April 2009 to April 2010) and each couple underwent a standard evaluation for infertility, including semen analysis in man according to standardized methods endometrial biopsy HSG and laparoscopy in women (Overstreet, 1997).

The women given medication to stimulate ovulation by 75 IU of follicle-stimulating hormones, intramuscularly daily from day 3 to day 7, on day 8 ultrasonography was repeated and daily administration of FSH was continued if necessary until follicle reach 18mm (Average of two dimension). Then 10000 IU of human chorionic gonadotrophins was administered intramuscularly.

A semen specimen washed in the laboratory called (sperm processing or sperm washing). A sperm separated from other component of semen and concentrated in small volume.

Prior to IUI it's necessary to remove seminal plasma to avoid prostaglandin induced uterine contractions, insemination will unprocessed semen is also associated with pelvic inflection (Boomsma *et al.*, 2007).

The majority of published studies, insemination are done 32-36hr following HCG administration (Crosignani and Maggioro, 2009).

Speculum is pleased in the vagina and cervical area is gently cleaned.

The washed specimen of highly motile sperm is pleased in uterine cavity using sterile, flexible catheter.

RESULTS

The age of couples in our study ranged from (21-42) years, 15 (35.7%) with primary infertility and 27 (67.3%) with secondary infertility.

Table 1: Type and cause of infertility

| Type | No. % |
|---------------|-----------|
| Primary | 15 (35.7) |
| Secondary | 27 (64.3) |
| Total | 42 (100) |
| Cause | |
| ♂ Infertility | 16 (38.1) |
| Unexplained | 22 (52.4) |
| Unexplained | 4 (9.5) |
| Total | 42 (100%) |

Table 2: Pregnancy rate

| Type of infertility | | No. | % | Total |
|--------------------------------|-----|-----|-------|-------|
| Primary | Yes | 8 | 19.1 | |
| | No | 7 | 16.7 | |
| Secondary | Yes | 18 | 42.9 | |
| | No | 9 | 21.3 | |
| Total | | 42 | 100.0 | |
| Duration of infertility | | | | |
| 3-5 years | Yes | 15 | 35.7 | 19 |
| | No | 4 | 9.5 | |
| 5-7 years | Yes | 9 | 21.3 | 14 |
| | No | 5 | 12.0 | |
| 8-11 years | Yes | 2 | 4.8 | 9 |
| | No | 7 | 16.7 | |
| Total | | 42 | 100.0 | 42 |

Table 3: Pregnancy out come

| Live birth | No. | % |
|----------------------|-----|-------|
| At term | 18 | 69.3 |
| Preterm | 3 | 11.5 |
| Still birth | 0 | 0.0 |
| Spontaneous abortion | 4 | 15.4 |
| Ectopic pregnancy | 1 | 3.8 |
| Total | 26 | 100.0 |

16 (38.1 %) of them has ♂ infertility, 22 (52.4%) with unexplained infertility, 4 (9.5%) of endometriosis.

Pregnancy rate significantly increase in secondary infertility and unexplained infertility and in shorter duration of infertility Table 2.

DISCUSSION

Intra uterine insemination of sperm can potentially enhance pregnancy rates by helping to overcome the cervical barrier. Observation data suggest three fold increases in pregnancy rates with IUI alone, with further increase in concomitant ovarian stimulation. (Bhattacharya *et al.*, 2008).

In our study pregnancy rate was (61.9%), (19.1%) in primary infertility and (42.9%) in secondary infertility and (21.3%) of them was male infertility and (40.6%) of unexplained infertility.

In cases of unexplained infertility, the early start of IUI is the line with recommendation of progression from low tech to high tech treatment (Collins, 2003).

In our study pregnancy rate was lower in infertility couples with long duration of infertility, (35.7%) with 3-5 years of infertility, (21.3%) with 5-7 years of infertility and (4.8%) in couples of 8 and more years of infertility.

Regarding the prenatal outcomes of IUI conceptions. Gandoin *et al.* (2003) report that ovulation induction combined with IUI was associated with increased risk of preterm birth and low birth weight.

However, other studies did not describe such association (Huttunen *et al.*, 1999; Hoy *et al.*, 1999).

In our study live birth at term was 69.3%, 11.5% was preterm, 15.4% end with spontaneous abortion and one case of ectopic pregnancy we conclude that for infertile couples in which the woman has no identifiable infertility factor and the man has motile sperm. The combination of ovulation induction and IUI is an effective means of achieving pregnancy.

For couples having difficulty achieving pregnancy unless both tubes are completely blocked, there is no sperm or the woman never ovulate. The chance of achieving a pregnancy is not zero.

And we cannot exclude the possibility that exposure to more cycles of IUI could have led to higher live birth rate.

CONCLUSION

Intrauterine insemination is useful for the treatment of infertility in women with unexplained causes of infertility.

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