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Original Research Article

A Hospital Based Study to Evaluate the Efficacy of Intrauterine Insemination in the Management of Infertility

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Abstract

Aim: The aim of the present study was to evaluate the efficacy of intrauterine insemination in the management of infertility.

Material & Methods: A retrospectively analysed patients with surgically confirmed moderate-to-severe endometriosis (ASRM stages III and IV) with at least one patent Fallopian tube receiving IUI treatment. Patients were selected from the electronic patient database of the IVF centre of NMCH, Sasaram, Bihar, India. 50 patients were selected in the study.

Results: The age of couples in our study ranged from (21- 42) years, 18 (36%) with primary infertility and 32 (64%) with secondary infertility. 38% cases had infertility. 36% had 3-5 years duration of infertility and 4% had 8-11 years duration of infertility. Out of 30 patients, 70% were at term and 3.34% had ectopic pregnancy.

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

Keywords: Intrauterine Insemination / Unexplained Infertility / Male Subfertility

Introduction

Endometriosis is one of the most common chronic gynaecologic disorders and is frequently associated with female subfertility (up to 50% sub fertile women with endometriosis). [1,2,3] Approximately 190 million women worldwide are currently affected by endometriosis [4] and 30% to 50% of women with endometriosis are infertile. [5,6,7]

The cumulative live-birth rate within four cycles of IUI was also comparable in women with minimal endometriosis, mild endometriosis, and unexplained infertility (70.2%, 68.2%, 66.5%, respectively). [8] Ovarian endometriomas are found in 17%-44% of women with endometriosis. [9,10,11] Although the exact pathophysiology of the reduced fertility is not clear, toxic content from an endometrioma may play a crucial role.

Artificial insemination is one of the oldest treatments for infertility and remains one of the most commonly used therapies. [12] Controlled ovarian hyperstimulation (COH) combined with intrauterine insemination (IUI) of capacitated sperm has been used to treat several fertility disorders. [13] Intrauterine insemination (IUI) is a commonly used method of assisted reproduction for patients with mild male factor infertility, anovulation, endometriosis, and unexplained infertility. [14]

In vitro fertilization (IVF) is generally used for severe male factor infertility. [15] Many factors affect IUI outcomes, including infertility diagnosis, semen parameters, and stimulation regimens. Since then IUI has evolved through innovations such as sperm preparation, monitoring for pre-ovulatory timing and induction of ovulation with human chorionic gonadotrophin (hCG). IUI also has been combined with ovarian stimulation using clomiphene citrate (CC) or gonadotrophins.

Despite the fact that it has not been classified as an assisted reproductive technique (ART). [16,17] Considering a sequence of IUI cycles is less aggressive and less expensive than an IVF procedure, should IUI treatment be encouraged as a valuable or viable approach to achieve a natural pregnancy.

Hence the aim of the study was to evaluate the efficacy of intrauterine insemination in the management of infertility.

Material & Methods

A retrospectively analysed patients with surgically confirmed moderate-to-severe endometriosis (ASRM stages III and IV) with at least one patent Fallopian tube receiving IUI treatment. Patients

were selected from the electronic patient database of the IVF centre of NMCH, Sasaram, Bihar, India. 50 patients were selected in the study.

Only patients undergoing their first IUI treatment in between the duration of 6 years were selected.

Inclusion Criteria

- Up to a maximum of six subsequent IUI treatment cycles were included in the analysis.

Exclusion Criteria

IUI treatment cycles with donor spermatozoa were excluded. The database was validated and completed by two researchers (AS, LH).

Methodology

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. The majority of published studies, insemination are done 32-36 hr following HCG administration. 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.

Statistical Analysis

Statistical analysis was performed using SPSS version 20.0 (IBM SPSS, USA). Data were expressed as mean ± standard deviation (SD) or n (%). Nonparametric data were expressed as medians with range. Differences between the two groups were evaluated using the Students' t-test (continuous data) or Mann–Whitney U-test in case of nonparametric data and chi-squared or Fishers' exact tests for categorical data. A P-value < 0.05 was considered significant. Life-table analysis was used to calculate the cumulative ongoing pregnancy rate and CERR. To plot the time to pregnancy, the endpoint was stated at 12 months after start of IUI treatment. The log rank test was used to compare both groups in cumulative ongoing pregnancy rate and the CERR. Cox regression analysis was performed to estimate hazard ratios (HR) for treatment strategy and long-term pituitary down-regulation on ongoing pregnancy and endometriosis recurrence rates.

Results

Table 1: Type and cause of infertility

Type	No. %
Primary	18 (36)
Secondary	32 (64)
Total	50 (100)
Cause	
Infertility	19 (38)
Unexplained	26 (52)
Unexplained	5 (10)
Total	50 (100)

The age of couples in our study ranged from (21- 42) years, 18 (36%) with primary infertility and 32 (64%) with secondary infertility. 38% cases had infertility.

Table 2: Duration of infertility

Type of infertility		N	%
Primary	Yes	10	20
	No	8	16
Secondary	Yes	21	42
	No	11	22
Total Duration of infertility		50	100
3-5 years	Yes	18	36
	No	5	10
5-7 years	Yes	11	22
	No	6	12
8-11 years	Yes	2	4
	No	8	16
Total		50	100

36% had 3-5 years duration of infertility and 4% had 8-11 years duration of infertility.

Table 3: Pregnancy out come

Live birth	No.	%
At term	21	70
Preterm	3	10
Still birth	0	0
Spontaneous abortion	5	16.66
Ectopic pregnancy	1	3.34
Total	30	100

Out of 30 patients, 70% were at term and 3.34% had ectopic pregnancy.

Discussion

Infertility is defined as failure to achieve pregnancy for one year or more without. Use of contraception during the child bearing period. [19] Infertility affects one in seven couples. [20] Affects approximately 10-15% of couples. [19] In addition to its economic costs, infertility has a major psychological impact. Oddene et al [21] report that infertile had depressive and anxiety symptoms four times more frequently than fertile woman.

The age of couples in our study ranged from (21- 42) years, 18 (36%) with primary infertility and 32 (64%) with secondary infertility. 38% cases had infertility. 36% had 3-5 years duration of infertility and 4% had 8-11 years duration of infertility. Out of 30 patients, 70% were at term and 3.34% had ectopic pregnancy. 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.[22]

In cases of unexplained infertility, the early start of IUI is the line with recommendation of progression from low tech to high tech treatment.[23] Regarding the prenatal outcomes of IUI conceptions. Gandoin et al. (2003)[24] 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.[25] For couples having difficulty achieving pregnancy unless both tubes are completely blocked, there is no sperm or the women never ovulate. The chance of achieving a pregnancy is not zero.

Conclusion

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

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