



REPRODUCTIVE OUTCOME AFTER HYSTEROSCOPY AND LAPAROSCOPY IN IVF CENTRE OF MUZAFFARNAGAR MEDICAL COLLEGE

Obstetrics & Gynaecology

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ABSTRACT

Objective: To determine reproductive outcome after assisted reproductive techniques in women with infertility following Laparoscopy and Hysteroscopy.

Background: Infertility affects up to 15% of couples of reproductive age group worldwide. Various methodologies have been implemented over the past decade to diagnose and treat cases of infertility so as to increase the chances of the couple for parenthood. This study analyses the pregnancy outcomes of patients with infertility after diagnostic Hysteroscopy and laparoscopy

Methods: The clinical data of 200 patients attending Out patient department of obstetrics and gynaecology and IVF centre in Muzaffarnagar Medical college from December 2017- June 2021 with infertility was analysed. The clinical data of all patients were collected, including age, years of infertility, type of infertility, findings of laparoscopy and hysteroscopy and were subjected to various methods for conception. fertility outcome was assessed among women initiated treatment based on laparoscopy and hysteroscopy.

Result: Women conceived after Laparoscopy and hysteroscopy were 77. Rate of conception in intrauterine insemination 32.4% and in-vitro fertilisation 31.25%. Conception with ovulation induction was 22.4% cases and spontaneous conception occurred in 11.53% cases. Miscarriage rate was 25.97%. Ectopic pregnancy was detected in 3.8%. Women passing 28 weeks of gestation were 68.8% with 64.15% women with full term and 13.2% preterm deliveries.

Conclusion: Laparoscopy and hysteroscopy and correction measures improves the chances of conception by diagnosing and treating the cause. Combination of assisted reproductive techniques with laparoscopy and hysteroscopy increases. Intrauterine insemination will have better outcomes.

KEYWORDS

IVF, primary infertility, hysteroscopy, Laparoscopy, assisted reproductive technique, fertility, outcome

INTRODUCTION

Overall prevalence of infertility among women in India is between 3.9% to 16.8%. Tubal infertility accounts for 36% of all female infertilities⁽¹⁾. Blockage or dysfunction of the fallopian tubes is the main cause of tubal infertility, commonly caused by acute or chronic inflammation of the fallopian tubes. Disturbed ovarian function/ Hormonal causes include PCOS, functional hypothalamic amenorrhoea, diminished ovarian reserve or premature ovarian insufficiency, Uterine and cervical anomalies. For patients with tubal factor infertility due to blocked access to sperm and oocytes, assisted reproductive technology (ART) such as in vitro fertilization (IVF)/ intracytoplasmic sperm injection (ICSI) are used⁽²⁾. Disturbed ovarian function is restored by ovulation induction. Hysteroscopy is considered the gold standard procedure for uterine cavity exploration⁽³⁾. Laparoscopy allows for the clear visualization of the obstruction and stenosis of the fallopian tubes, effective observation of the pelvic condition. Therefore, it allows the clinician to clearly diagnose pelvic diseases and assess the status of the fallopian tubes for particular treatment. Laparoscopy has the advantages of less trauma, faster recovery, and reduced postoperative complications⁽⁴⁾. This study was conducted on patients with infertility who were treated during laparoscopy and hysteroscopy, and their pregnancy outcomes were analysed.

METHODS

General Information

It is a retrospective study. The clinical data of 200 patients with infertility attending opd of obstetrics and gynaecology and IVF centre in Muzaffarnagar Medical college from December 2017 - June 2021 was analysed. Patients aged between 22 to 39 years with majority women belonging to 26-30 years age group. Majority of women had infertility ranging from 2-8 years. Majority of women had clinical complaints of infrequent menses and chronic pelvic pain.

Both male and female factors can contribute to infertility. Evaluation of infertility is done by detailed history taking, physical examination and investigations including semen analysis, detection of ovarian function and reserve, tubal patency, hormonal assay along with hysteroscopy and laparoscopy.

Surgical Methods

All patients had undergone routine investigations including complete blood count with Erythrocyte sedimentation rate (ESR), Blood

grouping n Rh typing, coagulation profile, thyroid function tests, and blood sugar levels. HbsAg, HCV, HIV and VDRL, electrocardiogram, Chest Xray and other related indicators before surgery. Laparoscopy scheduled in post ovulatory phase of menstrual cycle included diagnostic and Operative procedures: adhesiolysis, hysteroscopic resection of endometrial polyps and submucous myomas. Tubal patency is checked by chromopertubation. Endometrial biopsy taken and sent for Histopathology. Patient was given post operative parenteral antibiotics are given for 24-48 hours.

Treatment And Follow Up:

Patients diagnosed on laparoscopy and hysteroscopy were given treatment according to clinical and histopathological findings. Primary infertility was reported among 112 cases (56%) and Secondary infertility among 88 cases (44%). Among these Genital Tuberculosis was found in 32% (64) women were given antitubercular treatment for 6 months. Pelvic inflammatory disease among 10.5% (21) women following which oral antibiotics were given, endometriosis among 8% (16) and adhesiolysis done around adnexa in 6 cases, leiomyoma among 7.5% (15), PCOS among 7% (14) had undergone ovarian drilling in 6 cases. Adenomyosis among 6% (12), endometrial polyp among 3% (6) was resected. congenital malformation uterus among 2% (4). 48 women had no Laparoscopic, hysteroscopic or histopathological abnormality. Findings of laparoscopy and hysteroscopy were noted. After the surgery, the patients were followed up for 2 years, through on-site visits, telephone consults, and other methods. Patients were subjected to various methods for conception such as ovulation induction (oral letrozole, Injectable gonadotropins), Intrauterine insemination and in - vitro fertilization. The outcomes included normal pregnancy, miscarriage and ectopic pregnancy.

RESULT:

Women conceived after Laparoscopy and hysteroscopy were 77. A significant number of women conceived among the age group 20 - 25 years with 18 cases (82%), followed by 26 - 30 years including 37 cases (52.8%). Women above 30 years of age had less rates of conception (20.3%) 22 cases. Among 200 women undergoing laparoscopy and Hysteroscopy, Tubal patency was present in 78% cases (unilateral or bilateral) and absent in 22% cases.

Reproductive Outcome:

1. Spontaneous Conception:

		Clinical pregnancy	Ectopic pregnancy	Miscarried	≥ 2 nd Trimester
1.	Endometrial polyp	3 (50%)			3
2.	Genital Tuberculosis	4 (6.25%)		1	3
3.	Pelvic Inflammatory disease	2(9.5%)	1		1
4.	PCOS	5 (35.7%)		1	4
5.	Primary Infertility	4(14.8%)		2	2

156 cases with patent tube (Unilateral or Bilateral) were observed for spontaneous conception for a period of 3 months. Ovulation induction was done in failure of spontaneous conception. Spontaneous conception was among 18 women (23.38%). Outcome was Ectopic pregnancy in 1 case (5.5%), miscarriage in 4 cases (22.2%) and pregnancy prolonged further than 2nd trimester was in 13 cases (72.22%).

2. Ovulation Induction:

		Clinical Pregnancy	Ectopic pregnancy	Miscarried	≥ 2 nd Trimester
1.	Endometrial polyp	1 (16.6%)			1
2.	Genital Tuberculosis	9 (14%)	1	1	7
3.	Pelvic Inflammatory disease	4 (19%)		1	3
4.	PCOS	4 (28%)		1	3
5.	Primary infertility	8 (29.6%)		3	5
6.	Secondary infertility	3 (14%)		1	2
7.	Endometriosis (mild)	2 (12.3%)		1	1

Ovulation induction was done in 138 women who failed for spontaneous conception. Women were given 3 cycles of ovulation induction. Women with failure in conception after 3months or B/L tubal blockage were given option of assisted reproductive technique. Conception was in 31 women (40.25%). Outcome was Ectopic pregnancy in 1 case (3.2%), miscarriage in 8 cases (25.8%) and pregnancy prolonged further than 2nd trimester was in 22 cases (70.9%). 107 women were given the option of Intrauterine insemination or in vitro fertilization of which 71 women opted for intrauterine insemination.

3. Intrauterine Insemination (IUI):

		Clinical pregnancy	Ectopic pregnancy	Miscarried	≥ 2 nd Trimester
1.	Genital tuberculosis	5 (7.8%)		2	3
2.	Pelvic Inflammatory disease	3 (14.2%)		1	2
3.	Bicornuate uterus	1 (25%)			1
4.	Arcuate uterus	1 (25%)			1
5.	Primary Infertility	6 (22.2%)		2	4
6.	Leiomyoma (subserosal)	2 (13.3%)			2
7.	Secondary Infertility	5 (23.8%)	1	1	3

71 women opted for intrauterine insemination of which 23 (32.39%) women conceived. Outcome was Ectopic pregnancy in 1 case (0.4%), miscarriage in 6 cases (26.1%) and pregnancy prolonged further than 2nd trimester was in 16 cases (69.56%).

4. In - Vitro Fertilisation (IVF):

		Clinical Pregnancy	Ectopic Pregnancy	Miscarried	≥ 2 nd Trimester
1.	Genital Tuberculosis	3 (4.68%)		2	1

2.	Pelvic Inflammatory disease	1 (4.76%)			1
3.	Arcuate uterus	1 (25%)			1

In-vitro fertilisation was opted by 16 women with tubal blockage in 13 women and 3 women with intrauterine insemination failure.

Rate of conception was similar in intrauterine insemination (32.4%) and in-vitro fertilisation (31.25%). Conception with ovulation induction was 22.4% cases and spontaneous conception occurred in 11.53% cases.

Miscarriage rate was 25.97% in women with conception with spontaneous and assisted reproductive technique. 3 cases (3.8%) of ectopic pregnancy were detected early at 5 – 5.5 weeks and were managed conservatively. Rupture of sac occurred in women with genital tuberculosis with history of Koch's abdomen. follow up of 53 (68.8%) women passing 28 weeks of gestation revealed 34 women with full term and 7 preterm deliveries at 32 -36 weeks. 12 women are currently in antenatal care.

CONCLUSION:

Laparoscopic and hysteroscopy and correction measures improves the chances of conception by diagnosing and treating the cause. Combination of assisted reproductive techniques with laparoscopy and hysteroscopy increases. Intrauterine insemination will have better outcomes.

DISCUSSION:

Age is a predictive factor in determining the outcome of an assisted reproductive technique⁽⁵⁾. Advanced maternal age is associated with higher incidence of chromosomal abnormalities and higher miscarriage rates⁽⁶⁾. Majority of conception were in age group 20 - 25 years (63%). Conception above 35 years was in 13.33% women. In our study majority of women were of primary infertility and women had undergone Laparoscopy and hysteroscopy. Both are a part of standard protocol for infertility⁽⁷⁾.

Our study showed that treatment of cause of disease improved the pregnancy outcome. In cases of primary infertility and endometrial polyp resection 66.6% women conceived followed by polycystic ovarian syndrome 64.2%. congenital malformation had greater conception rate 75% with IUI and IVF. 47.6% women with PID and 38 % with secondary infertility. 21 women (32.8%) diagnosed of genital tuberculosis conceived after Anti tubercular treatment. In our study it was revealed that spontaneous conception had better outcome in miscarriage when compared to ovulation induction but the conception rate was lower. Ectopic pregnancy in 1 in 18 cases of spontaneous conception contributed to poor outcome compared to ovulation induction i.e., 1 in 31 cases.

IUI being cost effective compared to IVF requires tubal patency but has better rate of conception compared with IVF. IVF is associated with higher outcome of miscarriage (40%). Limitation of the study is having small number of patients in IVF group for further studies.

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