

PREVALENCE OF UTERINE ABNORMALITIES IN EVALUATION OF INFERTILITY WITH HYSTEROSCOPE

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ABSTRACT: Infertility is a widespread problem in gynecology, affecting approximately 10-15 % of the population in India. According to the Maternal Health Task Force, 50 million couples worldwide are estimated to be infertile. The study was conducted in the Department of Obstetrics and Gynecology, Vinayaka Mission's Medical College, Karaikal, Puducherry UT, from November 2019 to May 2021; 40 with primary and secondary Infertility with normal husband parameters were included in the study. The Prevalence of Uterine factor abnormality (Congenital and Acquired) in the evaluation of infertile women was found to be 27.5%. No significant difference in the prevalence of intrauterine pathologies was found among women with primary and secondary infertility. Diagnostic hysteroscopy among infertile women provides accurate identification of uterine abnormalities.

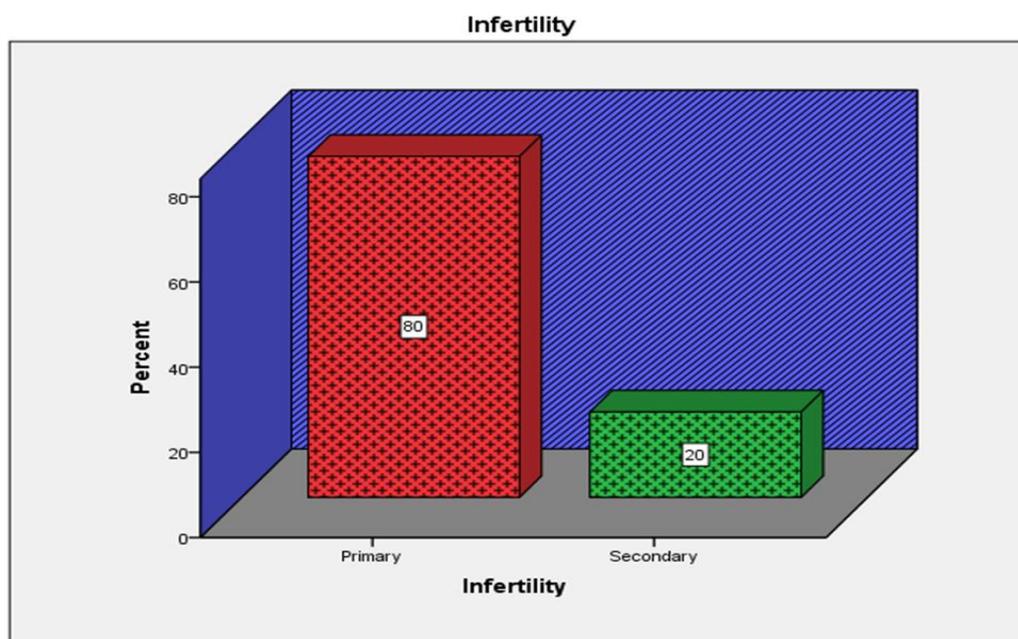
INTRODUCTION: Infertility is a widespread problem in gynecology, affecting approximately 10-15 % of the population in India. In the past 30 years, there has been no significant increase in the incidence of infertility. According to the World Health Organization, among the young population, Infertility is ranked as the fifth most serious global disability. According to the Maternal Health Task Force, 50 million couples worldwide are estimated to be infertile. The infertility diagnosis is made after a year of regular unprotected intercourse without conception. Approximately 85 % to 90 % of young, healthy couples become pregnant within a year or within six months of marriage. Over the last 25 years, the number of infertility services and their availability has increased considerably. The public has a great awareness of infertility and the currently available treatments. Infertility is not a disease, but for many couples, it is a major cause of personal anxiety and an important health problem to be dealt with in our profession. It has a physiological, psychological, and social impact on the couple. In many cases, the stigma of infertility leads to marital conflict, divorce, and social exclusion. Even though various investigations are available, many gynecologists prefer hysteroscopy since it is a great tool for studying and assessing the structure and function of the uterine tubal Ostia. According to studies, asymptomatic and infertile patients are more likely to have intra-uterine abnormalities such as sub-mucous fibroid, endometrial polyps, and hyperplasia. Therefore, this study is done to evaluate the prevalence of uterine abnormalities by hysteroscope in evaluating infertility. In the present study, 32 cases (80%) were primary infertility and 8 cases (20%) were secondary infertility.

AIMS AND OBJECTIVES: To study the incidence of uterine abnormalities in women with primary or secondary infertility using hysteroscopy and to detect endometrial pathologies by hysteroscopy in evaluation of infertility. Diagnostic evaluation can be combined with therapeutic intervention.

MATERIALS AND METHODS: The study was conducted in the, Department of Obstetrics and Gynecology, Vinayaka Mission's Medical College, Karaikal, Puducherry UT from November 2019 to May 2021, 40 with primary and secondary Infertility with normal husband parameters were included for the study. Patient with complete Ashermans syndrome, Cervical and vaginal agenesis, Cervical stenosis, Patients with severe co morbidities not fit for anesthesia. Patients who cannot be put in lithotomy position were excluded from the study. After taking detailed history, Clinical Examination, doing the necessary investigations and preoperative assessment, patients were advised to report after the menstrual cycle, during the proliferative phase of menstrual cycle for hysteroscopic Evaluation. Informed and written consent was taken, the patient was explained about the procedure, advantages and complications of the procedure. After sedation, the patient was positioned in lithotomy position, parts painted and draped, the bladder was emptied with a metal catheter, the posterior vaginal wall was retracted using a Sims speculum, and the cervix was visualized. The Anterior lip of the cervix was held with Vulsellum. Uterine sound introduced into the cervix and uterocervical length measured. Using serial Hegars Dilator, cervix is dilated. The hysteroscope was inserted into the cervix. The distension media inflow should be delivered as soon as the hysteroscope is inserted into the **cervix's external os**. A 4 mm hysteroscope with an outer sheath and a 30-degree angled view was used for the procedure. Normal saline with constant intrauterine pressure, which is maintained by a pressure pump, is used. Hysteroscopy was used to conduct a methodical examination. The cervical canal was the first structure to be visualized. The Hysteroscope is then manipulated into the uterine cavity under continuous vision. It is progressed further up to see the anterior, posterior, and lateral walls of the uterine cavity. Tubal ostia on both sides of the uterine body are visualized. The presence of abnormalities is recorded.

RESULTS:

FIGURE 1: Distribution of cases according to type of Infertility

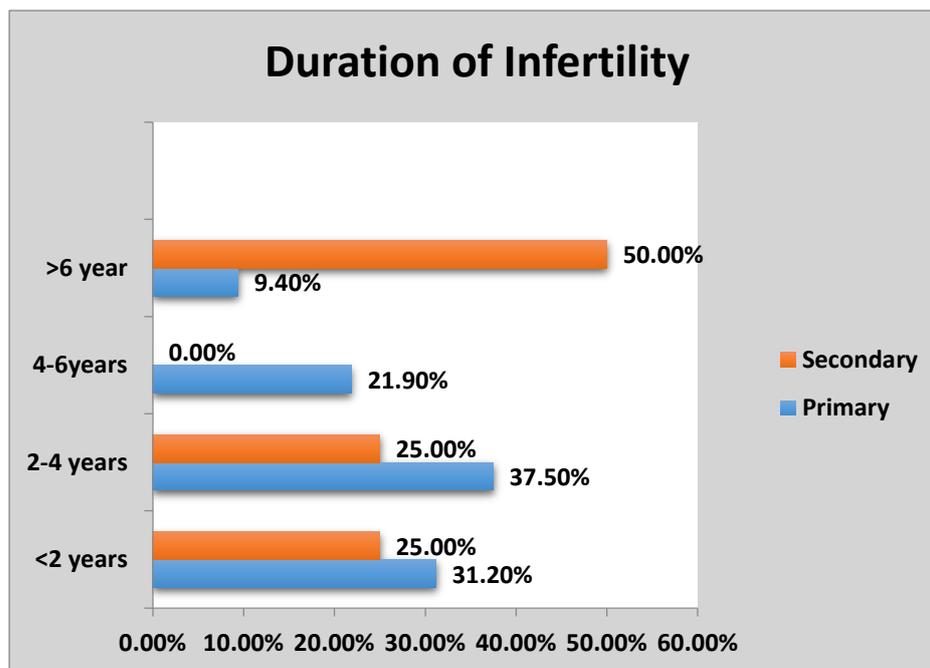


In the present study, 32 cases (80%) were primary infertility and 8 cases (20%) were secondary infertility.

Table No.1: Age distribution

Age distribution	Infertility		Total
	Primary	Secondary	
<30	23 (71.9%)	1 (12.5%)	24 (60.0%)
≥30	9 (28.1%)	7 (87.5%)	16 (40.0%)
Total	32 (100%)	8 (100%)	40 (100%)

FIGURE2: DISTRIBUTION OF PATIENTS BASED ON THE DURATION OF INFERTILITY



In the study, majority of the patients in primary infertility presented with the duration of 2-4 years (37.50%) and majority of patients in secondary infertility (50%) belong to >6 years' duration. In the primary infertility group, 31.2% Cases presented with the duration of <2 years, 37.50% cases 2-4 years, 21.9% cases 4 - 6 years' duration and 9.4% cases above 6 years. In secondary infertility group, 25% cases presented below 2 years, 25% presented with 2-4 years, 50% with >6 years' duration. Totally 30% cases presented <2 years, 35% cases presented between 2-4 years, 17.5% cases presented between 4-6 years and 17.5% of cases above 6 years' duration.

Table No.2: Treatment for Infertility

Treatment for Infertility	Infertility		Total
	Primary	Secondary	
Yes	26 (81.25%)	7 (87.5%)	33 (82.5%)
No	6 (18.75%)	1 (12.5%)	7 (17.5%)
Total	32 (100%)	8 (100%)	40 (100%)

This table represents the proportion of patients who have undergone treatment for infertility. 33 women (82.5%) have undergone treatment for infertility and 7 women (17.5%) did not take infertility treatment.

Table No.3: Findings of Endometrial Cavity with Hysteroscope

Endometrial Cavity	Infertility		Total
	Primary	Secondary	
Normal	24 (75%)	5 (62.5%)	29 (72.5%)
Distorted	1 (3.125%)	0 (0%)	1 (2.5%)
Endometrial changes S/O Hyperplasia	3 (9.375%)	0 (0%)	3 (7.5%)
Endometrial Polyp	1 (3.125%)	1 (12.5%)	2 (5.0%)
Intrauterine Adhesions	1 (3.125%)	1 (12.5%)	2 (5.0%)
Septate Uterus	1 (3.125%)	0 (0%)	1 (2.5%)
Submucosal Fibroid	1 (3.125%)	1 (12.5%)	2 (5.0%)
Total	32 (100%)	8 (100%)	40 (100%)

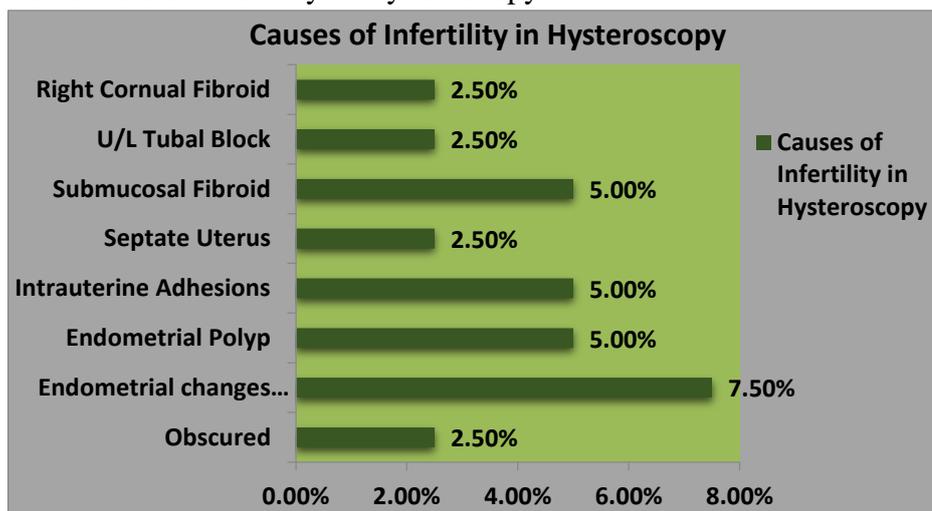
In this study, majority of the cases had Normal appearing Endometrial Cavity (72.5%). 7.5% cases had Endometrial changes suggestive of Hyperplasia, 5% had Endometrial Polyp, 5% had Intrauterine Adhesions, 5% had Submucosal fibroid and 2.5% had Septate Uterus and 2.5% had obscured endometrial cavity.

Table No.4: Findings of Tubal Ostia with Hysteroscope

Tubal Ostia	Infertility		Total
	Primary	Secondary	
Normal	31 (96.9%)	7 (87.5%)	38 (95.0%)
L Tubal ostial Block	0 (0%)	1 (12.5%)	1 (2.5%)
Right cornual Fibroid	1 (3.1%)	0 (0.0%)	1 (2.5%)
Total	32 (100%)	8 (100%)	40 (100%)

In this study, majority of the patients 95% had normal Tubal Ostia, 2.5% of cases of had Unilateral Tubal Ostial Block and 2.5% of cases had Right cornual fibroid

FIGURE 3: Causes of infertility in Hysteroscopy



In this study, 7.5% women had changes in the endometrial suggestive of hyperplasia, 5% women had Submucosal fibroid, 5% women had Endometrial polyp, 5% women had intrauterine adhesions.

DISCUSSION: Evaluation of uterine cavity is one of the basic and important steps in evaluating an infertile couple. Congenital malformations and acquired lesions of the uterus like endometrial polyps, uterine leiomyoma, intrauterine adhesions and distorted endometrial cavity, can interfere with embryo implantation and growth resulting in delay in conception, infertility or early pregnancy loss. Several studies have demonstrated the diagnostic accuracy of hysteroscopy among infertile patients.¹In the present study out of hysteroscopy performed on 40 women, 32 of them were diagnosed with Primary Infertility and 8 of them with Secondary Infertility. Abnormal hysteroscopic findings included obscured endometrial cavity, endometrial changes suggestive of hyperplasia, septate uterus, endometrial polyp, submucosal fibroid, intrauterine adhesions and cornual fibroid.13 women (32.5%), who underwent hysteroscopy had abnormal findings. 11 women (27.5%) had uterine cavity

abnormalities and 2 women (5%) had tubal ostial abnormalities. There was no significant difference in the rate of uterine pathology between women with primary and secondary infertility (20% and 7.5%). Uterine defects which was missed on prior Ultrasound and other routine investigations were diagnosed during hysteroscopy. Out of 11 women with abnormal uterine cavity findings on hysteroscopy, endometrial changes suggestive of hyperplasia were present in 3 women (7.5%). Congenital Uterine Malformations are known to cause recurrent pregnancy loss, miscarriages, preterm delivery and many other obstetric complications. Though the incidence of adverse pregnancy outcomes is established, the effect of it on infertility is still not clear. Data from studies of infertile patients shows an incidence varying from 1% to 26%. Study done by Sajida et al⁵ concludes that uterine anomalies are the most commonly detected cause of infertility through hysteroscopy with rate of 12.9%. In the present study its prevalence was 2.5% among study subjects. Submucosal or Intramural myoma distort the uterine cavity, impair site of implantation.⁷ Hysteroscopy helps in diagnosis and enables optimal assessment of candidates in whom myomectomy is possible.³ The reported incidence of myomas in infertile women ranges from 1% to 3.05%.^{5,6} In the present study submucosal myomas were diagnosed in 5% of patients of infertility. Endometrial polyps are often asymptomatic; hence its true incidence is difficult to determine. The role of endometrial polyp in infertility is unclear, although reproductive outcomes after polypectomy has shown improvement.⁸ The incidence of endometrial polyp was 7.22% in study done by Godinjak Z Et al. Endometrial polyps were observed in 5% of the study subjects, among both primary and secondary infertility groups with no statistical significant difference

Intrauterine adhesions are known to be prevalent among cases of secondary infertility, caused due to damage to basal layer after uterine curettage after an abortion or retained placental bits, tuberculous endometritis, metroplasty procedures.⁹ In the present study, it was present in 5% of patients, with no significant difference in rate among cases of primary and secondary infertility. Shushan and the American society of reproductive medicine^{27,28} suggest that hysteroscopy has been proven to be superior in the diagnosis of uterine abnormalities and for proper assessment of the uterine cavity.

CONCLUSION: In this study the Prevalence of Uterine factor abnormality (Congenital and Acquired) in the evaluation of infertile women is found to be 27.5%. No significant difference in the prevalence of intrauterine pathologies were found among women with primary and secondary infertility. Diagnostic hysteroscopy among infertile women provides accurate identification of uterine abnormalities, that helps us to provide appropriate treatment, thereby increasing the conception rate. Diagnostic hysteroscopy can be used as a routine investigation in the evaluation of women with primary and secondary infertility.

REFERENCES:

1. Sahu L, Tempe A, Gupta S. Hysteroscopic evaluation in infertile patients: a prospective study. *Int J Reprod Contracept Obstet Gynecol* 2012;1:1-5.

2. Brown S, Coddington C, Schnorr J, Toner J, Gibbons W, Oehninger S. Evaluation of outpatient hysteroscopy, saline infusion hysterosonography and hysterosalpingography in infertile women: a prospective, Randomized study. *Fertil Steril* 2000;74:1029-34.
3. Nagele F, O'Connor H, Davies A, Badawy, A, Mohamed H, Magos A. 2500 outpatient diagnostic hysteroscopies. *Obstet Gynecol* 1996;88:87-92.
4. Pansky M, Feingold M, Sagi R, Herman A, Schneider D, Halperin R. Diagnostic hysteroscopy as a primary tool in a basic infertility workup. *JSLs*. 2006 Apr-Jun;10(2):231-5.
5. Sajida parveen, Majidah Khanam. Role of combined diagnostic laparoscopy and simultaneous diagnostic hysteroscopy for evaluation of female subfertility actors. *Journal of surgery Pakistan(International)* 2010;15(1):44-47.
6. Godinjak Z, Idrizbegovic E, Should diagnostic hysteroscopy be a routine procedure during diagnostic laparoscopy in infertile women? *JBMS* 2008;8:44-47.
7. Grimbizis GF, Camus M, Tarlatzis BC, Bontis JN, Devroey P. Clinical implications of uterine malformations and hysteroscopic treatment results. *Hum Reprod Update*. 2001 Mar-Apr;7(2):161-74.
8. Shokeir TA, Shalan HM, El-Shafei MM. Combined diagnostic approach of laparoscopy and hysteroscopy in the evaluation of female infertility: results of 612 patients. *J Obstet Gynaecol Res*. 2004 Feb;30(1):9-14.
9. Oliveira FG, Abdelmassih R, Diamond MP, Dozoertsev D, Nagy ZP, Abdelmassih R. Uterine cavity findings and hysteroscopic interventions in patients undergoing in vitro fertilization-embryo transfer who repeatedly cannot conceive. *Fertil Steril* 2003;80:1371-5.
10. Pundir J, El Toukhy T (2010) Uterine cavity assessment prior to IVF . *Womens health (London England)* 6(6):841-848.
11. Maryam N, Hadieh H, Ahmadi F, Fatameh N, Mohammad C(2012) Diagnostic Accuracy of transvaginal Sonography in the detection of Uterine Abnormalities in Infertile women. *Iran J Radiol* 9(3):139-144.
12. Preutthipan S, Linasmitta V (2003) A prospective comparative study between Hysterosalpingography and hysteroscopy in the detection of intra uterine pathology in patients with infertility. *Journal of Obstetrics and Gynecology research*. 29(1):33-37.
13. Pansky M, Feingold M, Sagi R, Herman A, Schneider D, Halperin R. Diagnostic hysteroscopy as a primary tool in a basic infertility workup. *JSLs*. 2006 Apr-Jun;10(2):231-5.