



“TO EVALUATE THE ABNORMALITY RATE AND STRUCTURAL ABNORMALITIES IN UTERUS AND FALLOPIAN TUBES OF FEMALES UNDERGOING HSG”

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ABSTRACT

Infertility has significant negative social and personal issues that almost throughout the entire world. Hysterosalpingography is the infertility test that shows whether open or obstructed fallopian tubes. It also reveals whether or not the uterus is shaped normally. The study was conducted to assess HSG (hysterosalpingogram) efficacy in diagnosing and evacuating abnormalities of the female reproductive system.

METHOD:

A total of 50 patients were examined to evaluate the female infertility by using HSG at AL RAHAT DIAGNOSTIC CENTRE, J&K from 1 April to 1June. Only the patients with abnormality were included and patients with normal result were excluded.

RESULT: In this study 50 patients of the age group 17 to 37 coming for HSG procedure were included. Out of 50 patients, the HSG report of 8 patients was abnormal (16%). Primary infertility was found in 5 patients (62.5%) and secondary infertility was found in 3 patients (37.5%). Most of the patients coming for HSG test were from the age group of 33-37 (40%), followed by 28-32 age group (30%). Only 4% were from the age group of 17-20. Tubal blockage was found in most of cases and was the most common reason for infertility.

CONCLUSION:

HSG is a crucial procedure for evaluating reproductive abnormalities in females, particularly in assessing tubal diseases, uterine abnormalities, and other birth canal pathologies. It's important to remember that while HSG is a valuable diagnostic device, it may not detect all reproductive abnormalities, and further evaluations or tests may be required based on the specific clinical scenario. Additionally, each individual's case is unique, and treatment recommendations should be personalized to their specific needs and circumstances. Consulting with a healthcare provider is essential for a comprehensive evaluation and appropriate management of reproductive abnormalities

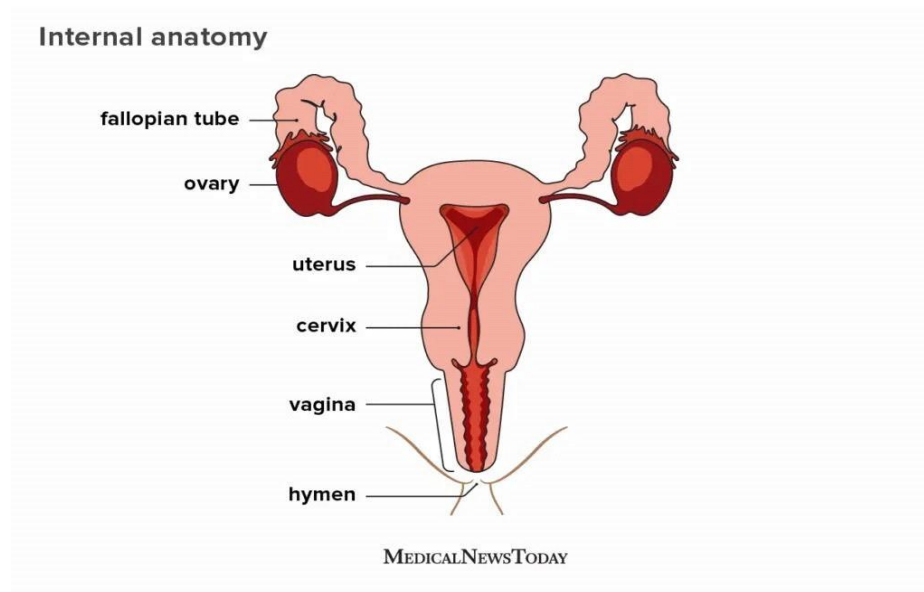
KEYWORDS:

HYSTEROSALPINGOGRAM, CONTRAST MEDIA, UTERUS, FALLOPIAN TUBES, TUBE BLOCKAGE, REPRODUCTIVE HEALTH, POLYCYSTIC OVARIAN SYNDROM

INTRODUCTION

Female reproductive system overview

The female reproductive system is made up of the uterus, vagina, fallopian tubes, and ovaries

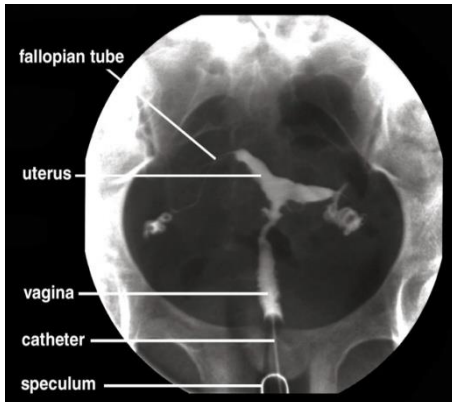


SOURCE: INTERNET

Fig 1: Female reproductive system

HSG (Hysterosalpingography)

HSG is a radiographic procedure to evaluate the uterine cavity and fallopian tubes after introduction of a radio-opaque agent through the cervical canal. Although HSG has been used over the years for several gynecological indications, investigation of infertility is the most common reason for its use today. This method provides useful information regarding the inner surfaces of the uterine cavity



and fallopian tubes, as well as the cervical canal and isthmus. HSG is considered to have 81.2% sensitivity and 80.4% specificity in comparison with hysteroscopy in the detection of intrauterine abnormalities [1]. Infertility is a complex disorder with significant medical, psychological and economic problems. It is defined as the inability of a couple to conceive after 12 months of regular unprotected sexual intercourse. Infertility is primary if the couples had never been pregnant, whereas secondary infertility is the inability to get pregnant after an earlier pregnancy which may or may not have led to live birth [2]

Source: internet

FIG 2: HSG OUTLINE

Indications

- Infertility: Infertility in women refers to the inability to conceive or carry a pregnancy to full term despite regular, unprotected sexual intercourse for a specified period, usually one year. According to better health channel around 30% of fertility originates in the women. [3]
- Fallopian tube blockage
- Problems with uterus and cervix (polyps or fibroids)

- Age related problems
- Medical conditions
- Recurrent miscarriages, Suspected Uterine or Tubal Abnormalities, Prior to Assisted Reproductive Techniques (ART), Evaluation of Pelvic Pain

Contraindication

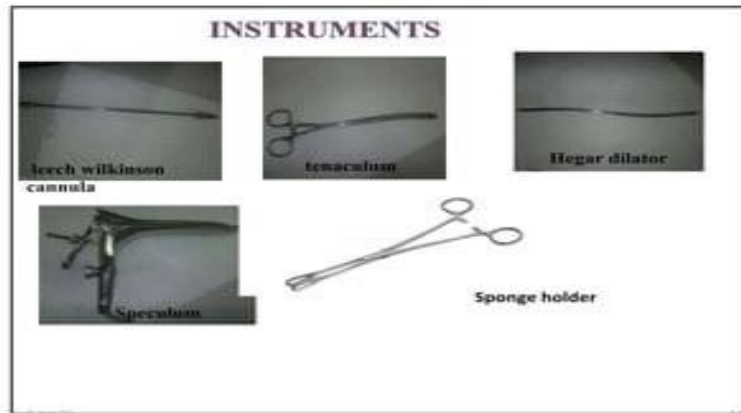
Pregnancy, genital tract infection, and uterine carcinoma are contraindications to hysteroscopy [4].

INSTRUMENTS OF HSG

Several instruments and equipments are involved in the HSG procedure:

1. Speculum: A speculum is a device used to gently open the vaginal canal and provide a clear view of the cervix. It helps in accessing the opening of the uterus for the procedure.
2. Catheter: A thin, flexible catheter is used to introduce a contrast dye into the uterine cavity. The catheter is inserted through the cervix and advanced into the uterus.
3. Syringe: A syringe is used to inject the contrast dye through the catheter into the uterus. The dye helps to visualize the structure of the uterus and fallopian tubes on X- ray or fluoroscopy.
4. X-ray Machine or Fluoroscope: An X-ray machine or fluoroscope is used to capture images of the uterus and fallopian tubes during the procedure. It provides real-time imaging to monitor the flow of the contrast dye and detect any abnormalities.
5. Image Viewing Monitor: A monitor is used to display the X-ray or fluoroscopy images captured during the HSG test. It allows the healthcare provider to observe the structures of the uterus and fallopian tubes and identify any blockages or abnormalities.

These instruments are commonly used during an HSG test to assess the condition of the reproductive organs and identify potential causes of infertility or other reproductive issues.



Source: internet

Fig 3: Instruments of HSG

INFERTILITY RATE AMONG WOMEN

As opposed to 1 in 8 (13%) married couples in which the woman is younger than 30, roughly 1 in 5 (22%) married couples in which the woman is 30-39 have difficulty conceiving their first child [5]. According to the WHO, a couple is considered infertile if they are unable to conceive after 12 months or more of regular, unprotected sexual activity. According to this criteria, the WHO pegs India's prevalence of infertility at 3.9% to 16.8%. [6].

Fertility rates are falling across the **United States, according to a CDC report that was featured in U.S. News & World Report last week (10/16/2018).**

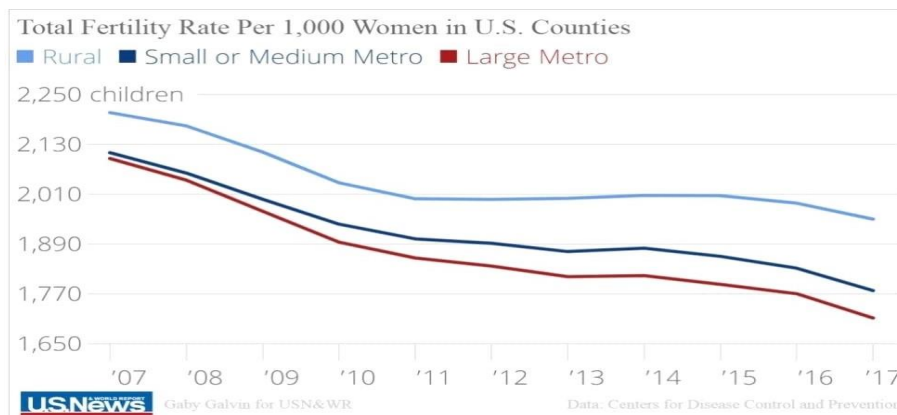


FIG 4: TOTAL FERTILITY RATE IN US

NEED OF STUDY

- Diagnosis and treatment: understanding and identifying abnormalities in the female reproductive system is essential for accurate diagnosis and appropriate treatment
- Reproductive health and fertility: Abnormalities of the female Reproductive system can directly affect a women’s reproductive health and fertility
- Prevention and early detection

AIM OF THE STUDY

To evaluate the reproductive system abnormalities of a infertile women undergoing HSG.

OBJECTIVE

- 1 Assessing the prevalence and types of reproductive system abnormalities detected in infertile women undergoing HSG.
- 2 Identifying any uterine atypical conditions like uterine fibroids, uterine polyps, or septum that may be causing infertility.
- 3 Evaluating tubal patency and identifying any blockages or abnormalities in the fallopian tubes that may be hindering conception.

METHODOLOGY:

The study was conducted in AL RAHAT DIADNOSTIC CENTRE by specialists in the department of interventional radiology. Antibiotics for prevention were prescribed. Prior to the surgery, the patients were typically given oral ibuprofen 600mg. Prior to gathering the data,

patient consent was obtained. A total of 50 patients between the ages of 17 and 37 were assessed by having a general physical examination and taking a medical history.

Based on their medical histories and physical tests, patients were chosen. Conray-280 (10–15 ml) was utilized as the contrast medium during the HSG. Before the HSG, each patient was instructed to empty their bladder. After the patients entered the x-ray room, a brief explanation of the process was given to them.

Study design: Cross sectional research

Source of data: Radio diagnosis department, HSG patients coming to AL RAHAT DIAGNOSTIC CENTRE, J&K

Sample size: 50

Patients included in the study were selected according with the following criteria

- Inclusion criteria: Patients between the ages of 17 and 37 were included.
- Exclusion criteria Patients below or above age group were excluded

Method of data collection: Female patients coming to Radio diagnosis department for HSG were used to collect data. Prior to collecting data, consent form was given to patient and the procedure was explained to them. Only patients with abnormal results were included and data was collected for statically analysis.

RESULT

On the basis of age

TABLE 1: ON THE BASIS OF AGE

S.N O	AGE	NO OF PARTICIP ANTS	PERCENT AGE
1	17-20	2	n=4%
2	21-24	4	n=8%
3	25-28	9	n=18%
4	29-32	15	n=30%
5	33-37	20	n=40%

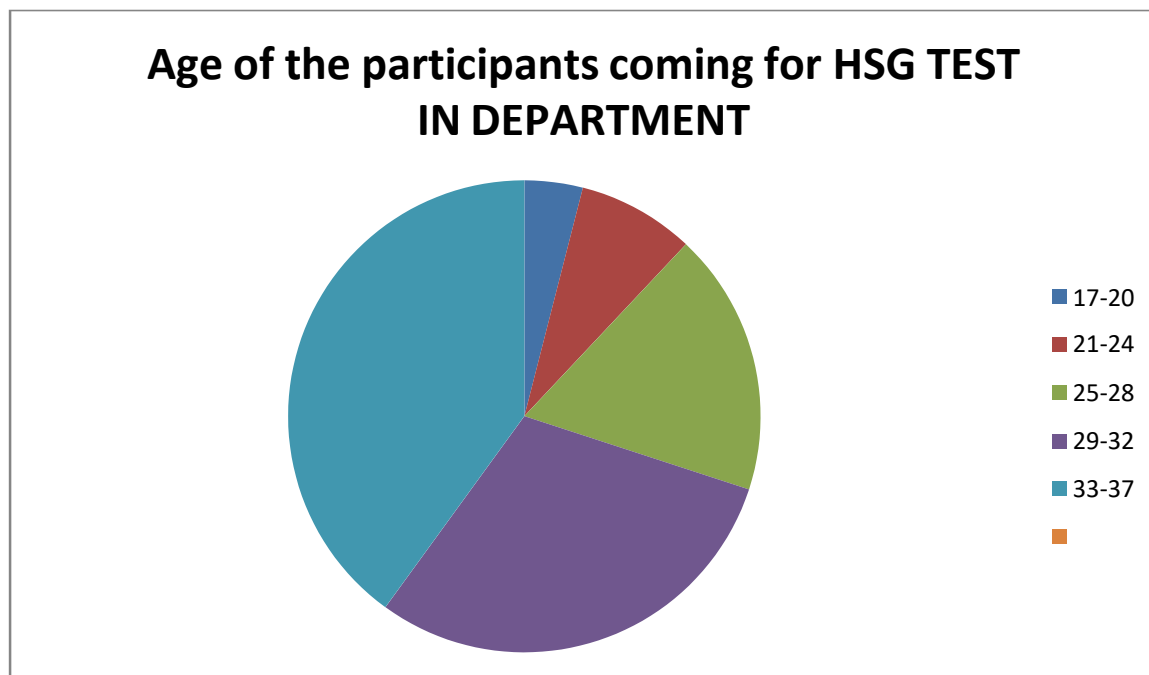


FIG 5: Age of the participants coming for HSG test in department

Out of the 50 patients, most of the participants were from the age group of 33-37 (n=20, 40%), followed by 29-32 (n=15, 30%), 25-28 (n=9, 18%), 21-24 (n=4, 8%), 17-20 (n=2, 4%)

On the basis of result

TABLE 2: RESULT OF HSG

S.NO	NORMAL RESULT	ABNORMAL RESULT
1	42 (84%)	8 (16%)

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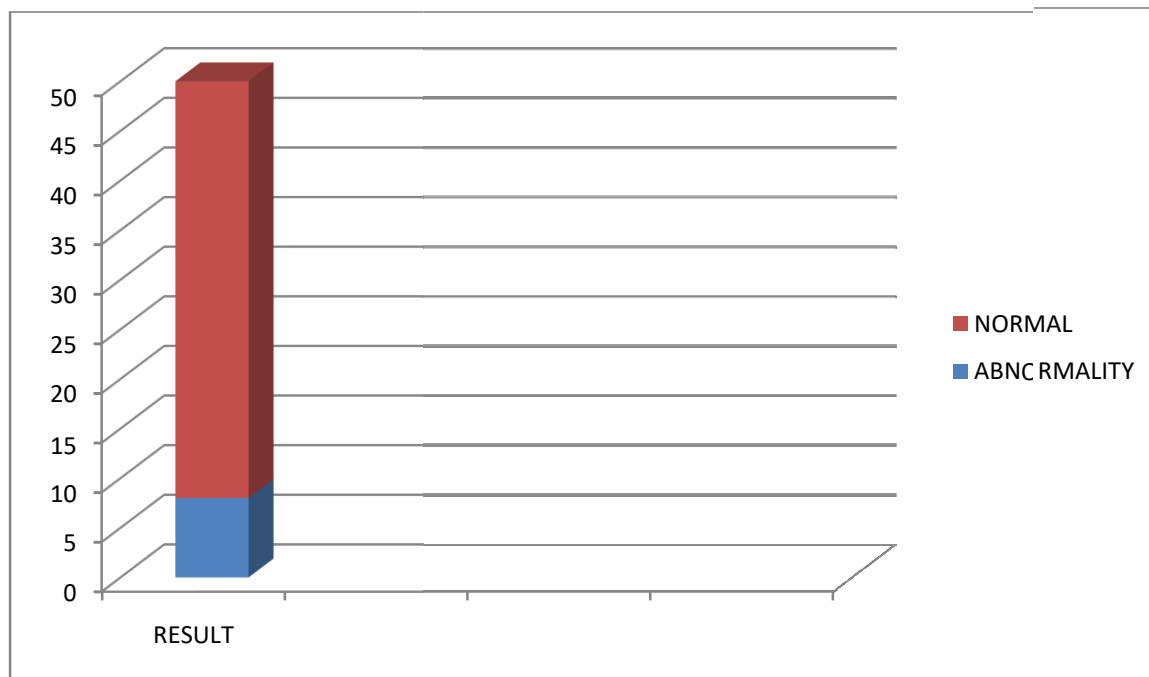


FIG 6: RESULT OF HSG

We included all the HSG cases coming to the department, and we found that out of 50 participants, 42 were normal and only 8 found with some abnormality. Abnormality rate was 16%

On the basis of primary and secondary infertility

Primary infertility: when a women has never achieved pregnancy despite having regular, unprotected sexual intercourse for at least one year.

Secondary infertility: refers to the inability to conceive or carry a pregnancy after giving birth to a kid or children earlier.

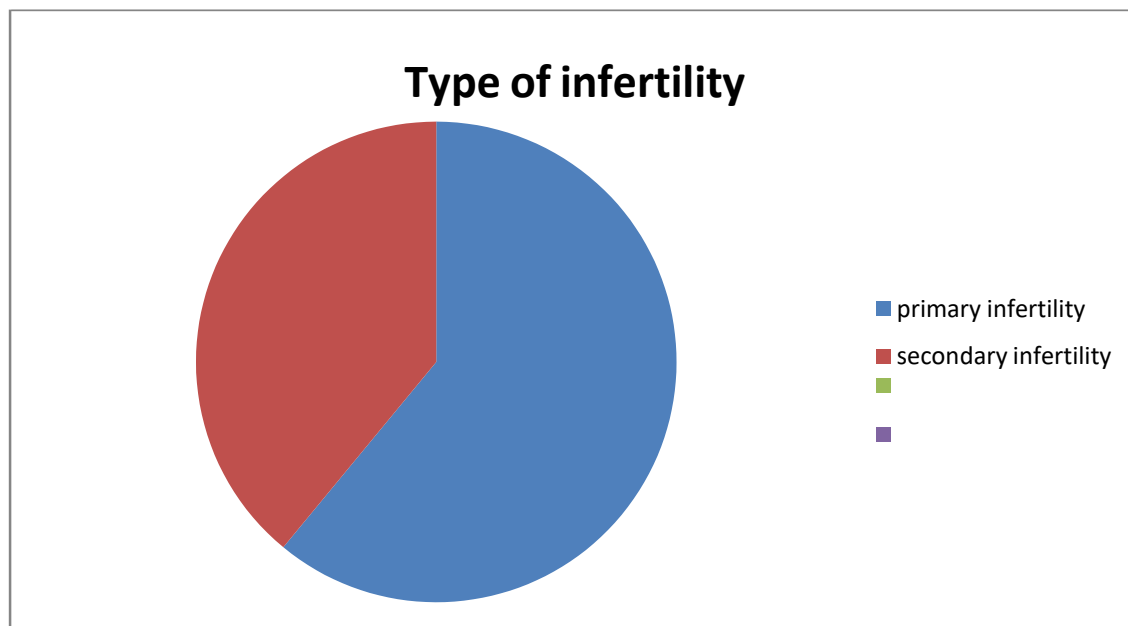


FIG 7: History of the most participants was primary infertility

CASE STUDY

CASE 1



FIG 8: FIRST FILM OF HSG

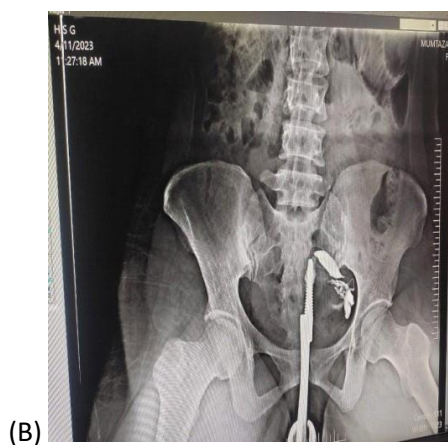


FIG 9: 2ND FILM

“TO EVALUATE THE ABNORMALITY RATE AND STRUCTURAL ABNORMALITIES IN UTERUS AND FALLOPIAN TUBES OF FEMALES UNDERGOING HSG”



FIG 10: 3RD FILM



FIG 11: 4TH FILM

CASE STUDY OF CASE 1

Age: 35

History

- Pain in the pelvis and abdomen
- Irregular periods
- Secondary Infertility

HSG show only left side of uterine cavity filling with contrast. Right fallopian tube is blocked. No spillage of contrast media was seen on right side.

CASE 2



FIG 12: CASE 2ND

Age: 23

History

- Marriage 7 years
- Primary infertility

CASE STUDY

Small uterine cavity is noted with irregular contour, multiple constrictions and adhesions are noted.

Bilateral tubal block with intravasation of contrast is noted.

On the basis of findings

TABLE 3: FINDINGS

Findings	Primary infertility	Secondary infertility
B/L Tubal blockage	1 (n=12.5%)	1 (n=12.5%)
Left tubal blockage	2 (n=25%)	1 (n=12.5%)
Right tubal blockage	1 (n=12.5%)	1 (n=12.5%)
Fibroid	1 (n=12.5%)	0 (n=0%)

Main cause of infertility was tubal blockage.

Out of 8 patients, 1 participant from the primary infertility category was found with bilateral tubal blockage and 1 from the secondary infertility.

Left tubal blockage was found in 2 participants from primary infertility and right tubal blockage was found among 1 patient from secondary infertility.

Fibroid was found in 1 patient from primary infertility.

“TO EVALUATE THE ABNORMALITY RATE AND STRUCTURAL ABNORMALITIES IN UTERUS AND FALLOPIAN TUBES OF FEMALES UNDERGOING HSG”

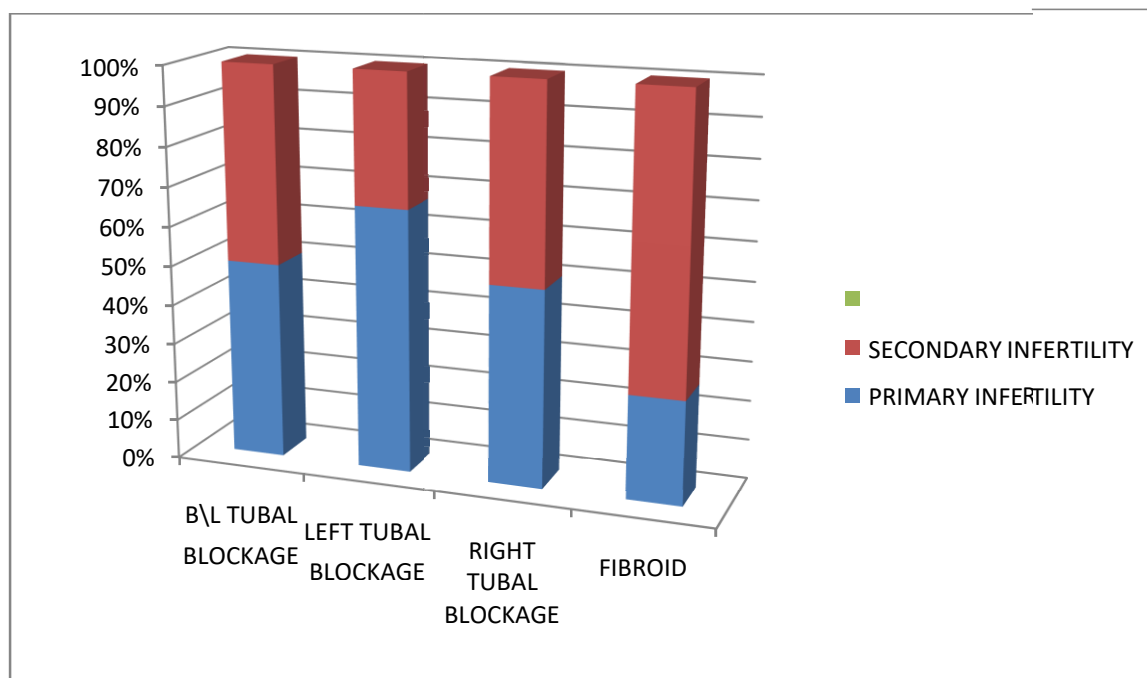


FIG 13: HSG FINDINGS

On the basis of menstrual abnormalities

TABLE 4: MENSTRUAL ABNORMALITIES

NORMAL	6	75%
DYSNERRHOEA	1	12.5%
MONORRHAGIA	1	12.5%
OLIGOMONERRHOEA	0	0%

Dysnerrhoea: painful menstruation

Out of 8 patients one patients has the complain of dysnerrhoea

Monorrhagia: prolonged menstrual bleeding

Out of 8 patients one patients has the complain of monorrhagia

Oligomonerrhoea: irregular and inconsistent menstrual blood flow in woman

“TO EVALUATE THE ABNORMALITY RATE AND STRUCTURAL ABNORMALITIES IN UTERUS AND FALLOPIAN TUBES OF FEMALES UNDERGOING HSG”

Out of 8 patients no one's has the complain of oligomonerrhoea

DISCUSSION

Hysterosalpingography (HSG) is a diagnostic examination that involves using fluoroscopy X-rays and a contrast agent to examine the uterus and fallopian tubes. While HSG can help identify certain causes of infertility, it is not a treatment for infertility itself. HSG can provide valuable information about the structure and condition of the reproductive organs, helping doctors determine the underlying causes of fertility issues in some cases.

Hysterosalpingography (HSG) is a medical procedure that involves injecting a contrast material into the uterus and fallopian tubes to assess their shape, size, and condition. It is commonly used to evaluate female fertility and diagnose potential causes of infertility. HSG plays a function to assessing and diagnosing potential causes of infertility in women. It can identify structural abnormalities or blockages in the reproductive organs, helping fertility specialists determine appropriate treatments to improve the chances of conception.

The procedure can help identify issues such as uterine abnormalities, blockages in the fallopian tubes, and structural problems that may interfere with a woman's ability to conceive.

Among 50 patients, 8 patients were found with abnormality while majority of the participants HSG report were normal. Tubal abnormalities and uterine abnormalities can be observed with HSG. Maximum participants undergoing HSG belongs to age group of 33-37. Primary infertility was mostly seen. The result of this study is that HSG is effective way to evaluate the abnormalities of reproductive system among infertile women.

It's essential to note that while HSG is a valuable diagnostic device, it may not detect all reproductive abnormalities, and further evaluations or tests may be required based on the specific clinical scenario. Additionally, each individual's case is unique, and treatment recommendations should be personalized to their specific needs and circumstances. Consulting with a healthcare provider is essential for a comprehensive evaluation and appropriate management of reproductive abnormalities.

CONCLUSION

HSG is a crucial procedure for evaluating reproductive abnormalities in females, particularly in assessing tubal diseases, uterine abnormalities, and other birth canal pathologies. It may underline the importance of HSG in diagnosing infertility causes related to the fallopian tubes

“TO EVALUATE THE ABNORMALITY RATE AND STRUCTURAL ABNORMALITIES IN UTERUS AND FALLOPIAN TUBES OF FEMALES UNDERGOING HSG”

and uterine cavity.

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