



AHMEDABAD OBSTETRICS AND GYNAECOLOGICAL SOCIETY

# AOGS TIMES

## VIHAAN

DECEMBER 2023 | VOLUME 9

MOTTO : REDEFINING WOMEN HEALTH

THEME : CATCH THEM YOUNG

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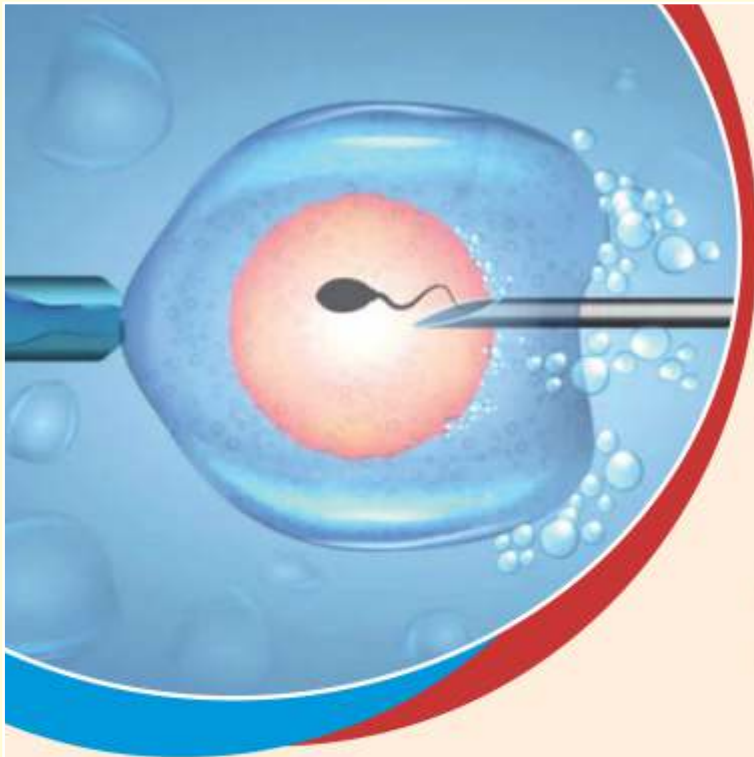
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## TEAM AOGS MESSAGE



**Dr. Mukesh Savaliya**  
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Dear Friends,

The winter is in full swing! The Season of fitness is here! We hope you're doing exercise and relishing on healthy food keeping mind, body and soul in harmony!

We had 46th Annual SOGOG conference in last week of December at Himmatnagar with huge success! The benefits of academics were received by around 650 delegates!

We wish you a very happy new year! Let us be aware about our mental and physical health and let us keep walking towards becoming better humans in 2024!

Thank you!

## EDITORIAL



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**Dr. Munjal Pandya**  
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## Infertility MCQs

1. In case of couples , where male is having very low sperm count , which technique will be suitable for fertilization

- a) GIFT
- b) AI
- c) ICSI
- d) IUT

2. Test tube baby programme employs which one of the following techniques

- a) ICSI
- b) IUI
- c) GIFT
- d) ZIFT

3. Which of the following tests differentiate between dead and alive nonmotile sperms

- a) zona penetration assay
- b) DNA fragmentation index
- c) Hypoosmotic swelling test
- d) Mannose fluorescence assay

4. Regarding couples attempting pregnancy, what percentage of women are expected to have conceived at 1 year

- a) 30
- b) 55
- c) 70
- d) 85

5. Gynecomastia in male patient may suggest

- a) Noonan syndrome
- b) Klinefelter syndrome
- c) pituitary prolactinoma
- d) 17 beta hydroxysteroid dehydrogenase deficiency

6. Regarding commercially available urinary LH kits , when does ovulation takes place in relation to positive result

- a) same day
- b) day after
- c) 48 hours
- d) 72 hours

7. A 32 year-old women undergoes infertility evaluation after trying to conceive for 5 yrs. She has cyclic but heavy menses. Prior to

this, she experienced one pregnancy that ended in a first trimester spontaneous abortion. What uterine abnormality is suggested by her hysterosalpingogram?

- a) Normal
- b) Asherman syndrome
- c) Submucous leiomyoma
- d) Bilateral hydrosalpinges



8. When treating hypertension with beta blocking agents, which of semen abnormalities may be seen due to retrograde ejaculation

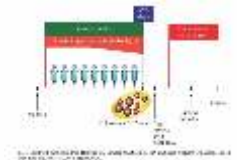
- a) azoospermia
- b) Oligospermia
- c) Teratospermia
- d) low semen volume

9. Which of the following is NOT true regarding clomiphene citrate therapy

- a) typical starting dose is 200 mg orally
- b) can be initiated on 2nd day of menstrual cycle
- c) taken for 5 consecutive days in early menstrual cycle
- d) Classified as category X drug by FDA

10. Treatment protocol shown above is considered which of the following?

- a) GnRh flare protocol
- b) GnRh antagonist protocol
- c) Down regulation GnRh agonist protocol
- d) None



11. Serum level of which of the following hormones will increase after ovarian drilling

- a) LH
- b) FSH
- c) Prolactin
- d) Androstenedione

12. Which of the following tubal obstruction location is least amenable to surgical repair

- a) Isthmic
- b) Fimbrial
- c) Ampullary
- d) Interstitial

**13. During in vitro fertilization , prevention of LH surge prior to oocyte retrieval is important. which of the following medications help to achieve the goal**

- a) Estradiol
- b) HMG
- c) recombinant FSH
- d) Leuprolide acetate

**14. Which of the following assisted reproductive technique is shown here?**

- a) Embryo biopsy
- b) Assisted hatching
- c) Oocyte in vitro maturation
- d) Intracytoplasmic sperm injection(ICSI)



**15. Which of the following is the preferred surgical approach for ovarian endometriomas via laparoscopy**

- a) Ovarian wedge resection
- b) Cyst drainage and ablation
- c) Cyst wall excision by stripping technique
- d) Unilateral oophorectomy if the contralateral ovary appears normal

**16. The secretion of FSH in a male is inhibited by negative feedback effect of:**

- a) Inhibin secreted by Sertoli cells
- b) Inhibin secreted by Leydig cells
- c) Testosterone secreted by Sertoli cells
- d) Testosterone secreted by Leydig cells.

**17. Semen analysis of a male of an infertile couple, shows absence of spermatozoa but presence of fructose. The most probable diagnosis is:**

- a) Prostatic infection
- b) Mumps orchitis
- c) Block in efferent duct system
- d) All of the above

**18. Endometrial biopsy for infertility test in women should be done at**

- a) Ovulatory
- b) Menstrual
- c) any time
- d) premenstrual

**19. 40 year old women has been trying to conceive since last 2 years and is not successful. She had 1 previous failed IVF and is going for 2nd IVF treatment. Which of the following will not reduce the success rate of IVF pregnancy**

- a) previous failed IVF treatment
- b) rising Age
- c) caffeine intake
- d) smoking
- e) BMI 32

**20. A 28-year old women is referred to infertility clinic. She has been trying to conceive for the last 2 years. Which one of the following is a recognized indication for ovum donation treatment in her case?**

- a) Turner syndrome
- b) Kallmann syndrome
- c) Androgen- insensitivity syndrome
- d) Rokitansky syndrome
- e) Congenital adrenal hyperplasia

**21. A couple complains of primary infertility inspite of staying together for 4 years and having unprotected intercourse, all tests**

**in wife are normal. Semen analysis shows a volume of 0.8 ml/sperm count is 0. What is done next?**

- a) Testicular FNAC
- b) Ultrasound for obstruction
- c) Local palpation of vas
- d) Karyotyping

**22. In Kartagener syndrome cause of infertility is**

- a) Oligospermia
- b) Asthenospermia
- c) Undescended testis
- d) Epididymis obstruction

**23. The following can cause azoospermia except one condition. Which one is exception?**

- a) Cystic fibrosis carrier
- b) Kallmann syndrome
- c) Klinefelter syndrome
- d) Down syndrome

**24. In semen banks, semen is preserved at low temperatures using which cryoprotectant?**

- a) Dry ice
- b) Glycerol
- c) Liquid nitrogen
- d) Liquid oxygen

**25. After an IVF cycle and a subsequently positive pregnancy test, a patient develops abdominal pain, nausea, vomiting and mild shortness of breath. Further evaluation reveals normal lung sounds, palpable ascites and a pulse oximetry of 97% on room air. A chest x-ray is normal, the haematocrit is 40% and an ultrasound shows ovaries of 9 cm with evident ascites. Which of the following is most consistent with severe OHSS?**

- a) Shortness of breath
- b) Haematocrit greater than 40%
- c) Palpable ascites
- d) Ovarian size greater than 9 cm
- e) All of the above

## ANSWERS

1. b) AI
2. a) ICSI
3. c) Hypoosmotic swelling test
4. d) 85
5. b) Klinefelter syndrome
6. b) Day after
7. c) Submucous leiomyoma
8. b) Oligospermia
9. a) Typical starting dose is 200 mg orally
10. a) GnRh flare protocol
11. b) FSH
12. d) Interstitial
13. d) Leuprolide acetate
14. a) Embryo biopsy
15. c) Cyst wall excision by stripping technique
16. a) Inhibin secreted by Sertoli cells
17. c) Block in efferent duct system
18. d) Premenstrual
19. c) Caffeine intake
20. a) Turner syndrome
21. b) Ultrasound for obstruction
22. b) Asthenospermia
23. a) Cystic fibrosis carrier
24. b) Glycerol
25. c) Palpable ascites

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**Pre- trigger (The phenomenon unexplored):What all to see before giving trigger.**



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What is a mature follicle? Is the size matter's? Is the endometrial thicknessmatter's? How we will say a follicle is mature and when to give trigger? The answers are as follow:

**The follicle:-**

For Clomiphene Citrate and letrozole, higher pregnancy rates were achieved when the mature follicles were in the 23 to 28 mm range <sup>1</sup>and in stimulation with HMG or FSH the optimal size of the follicle will be 18-20 mm <sup>2</sup>. So it is not the size we see here but the stimulation we use matter's. A follicle is mature not by it's size but by its functionality.

With gonadotropins follicle will mature soon then with oral ovulogens alone.

To judge the functionality of such follicle always we have to see the endometrium. We will be getting always a good triple line thick endometrium if the follicle is good functionally (i.e. it will be secreting estradiol in the range of 150-200 pg/ml).

**Mature follicle:**

A good quality follicle will has thin walls, regular round shape and no echogenicity in lumen; we will also be seeing a thin hypo echoic halo surrounding the follicle. We can also see a thin hyper echoic mass like tiny projection called as cumulus on ultrasound mostly seen – 24-36 hours before rupture of the follicle. Cumulus can be seen by 2D ultrasound nearly about 35 % times but with 3D ultrasound you can almost see it in 95 % of cases. So seeing cumulus you can judge that the follicle is about to rupture in 24-36 hours. <sup>3</sup>

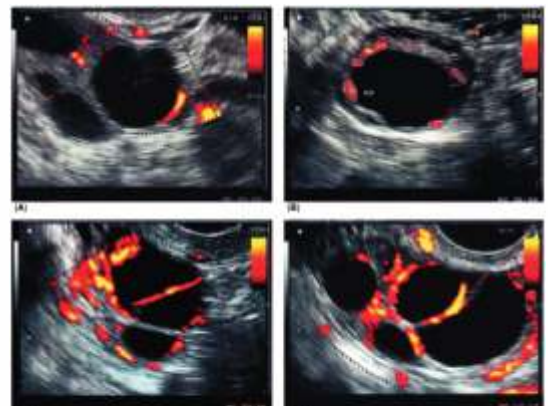
**Colour Doppler use in judging maturity of follicle:**

Any functional cyst has vascularity. Follicle starts developing its vascularity as soon as it become dominant i.e. >10 mm of size nearly about 8-9 th day of cycle. The perifollicular Vascularity increases as it become more mature and the RI of the perifollicular flow starts to fall (i.e. indirectly increase in the flow to the follicle) will be seen 36-48 hours before rupture <sup>4</sup>. The vascularity around the follicle can be seen on colour Doppler. The vascularity can be graded like ¼ covering the follicle, 2/4 covering the follicle, and ¾ covering the follicle or 25%, 25%-50 %, 50%-75% or >75%, i.e grade 1, grade 2, grade 3 and grade 4 respectively <sup>5, 6</sup>.

LH surge only starts by the positive feedback given by the estradiol level 150-200pg/ml, secreted by mature follicle, which can judge by calculating RI and PSV by pulse Doppler on these perifollicular vessels, the RI of 0.4-0.48 and PSV of >10 cm/s shows that the LH surge has started and it is the time to give trigger as the



Figure 1 B mode ultrasound image of ovary showing single dominant follicle with thin wall, regular round shapand can also see echogenicity's around the follicle margins.



Classification of perifollicular vasculature according to the percentage of color by power doppler:  
A) Grade I, when color mapping covers up to less than 25% of the follicular circumference;  
B) Grade II, when color mapping covers between 25 and 50%;  
C) Grade III, if color signal appears between 50 and 75%; and  
D) Grade IV, color mapping between 75 and 100% of the follicular perimeter.

follicle is mature. So LH surge can be traced by the PSV value of the perifollicular vessels, PSV >10 cm/s the surge starts and it further increases as the surge progresses. If PSV is >10 cm/s the follicle will rupture in 36 hours, but if PSV > 15cm/s it says we are at peak of Lh surge and follicle might rupture in less than 24 hours.<sup>7</sup>

Lower PSV levels in the perifollicular blood flow again indicated a low flow to the follicle and indirectly to ovum and hence show hypoxia to the ovum. As per the study by Nargund et al<sup>8,9</sup>, the embryo produced by the ova obtained from the follicle having low <10 cm/s PSV value are having higher chance of chromosomal abnormalities.

**The endometrium:**

The endometrium grows as the estradiol level increases, and the estradiol is secreted by the follicle. So a good follicle will secrete good estradiol and so a good follicle will always have a good endometrium. So if you focus on your stimulation properly you will get a good follicle and indirectly a good endometrium.

Its only when you use clophenecitrate, which has blocks estrogen receptors, your endometrium will increase once its effect is gone after its stoppage, but that endometrium will grow suddenly so you don't have to worry with clomiphene citrate also. But you have to wait in CC and letrozole induced cycle for the endometrium to grow as we have seen follicle mature lately with CC and letrozole rather than gonadotropins.

Generally we consider >8mm endometrium to be normal. Although we have seen pregnancy with 6-8 mm size endometrium also, but the preclinical and clinical miscarriage rates are again high with 6-8 mm endometrium rather than if it is >8mm at the time of trigger<sup>10</sup>

**Morphology:**

Morphology of endometrium is important as its thickness<sup>11</sup>.

Grade A endometrium is considered the best, it is triple line endometrium with multiple echogenicity in it. Echogenicities corresponds to the vascularity in the endometrium.

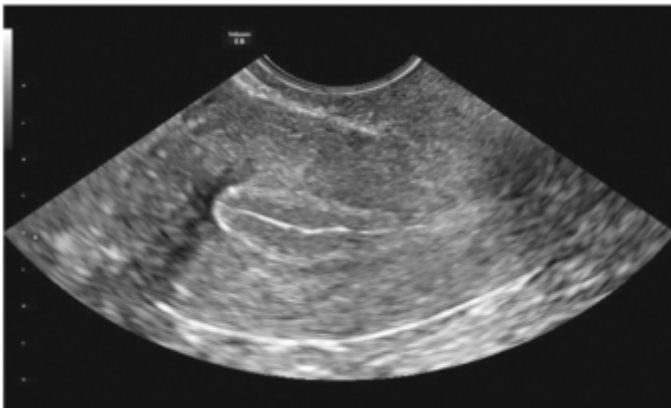


Figure 3 B mode ultrasound image of uterus in midsagittal plane showing triple layered endometrium with internal echogenicities between its layers, making it grade A endometrium.



Figure 4 B mode ultrasound image of uterus in midsagittal plane showing triple layered endometrium with anechoic halo between the layers making it grade B.

Grade B endometrium has anechoic area's between the layers, which shows the vascularity has not started developing there. we have to wait for 1-2 days more for the vascularity to develop with such endometrium before giving trigger.



Figure 5 B mode ultrasound image of uterus in midsagittal plane showing triple layered endometrium showing isoechoic pattern, typed as grade c.

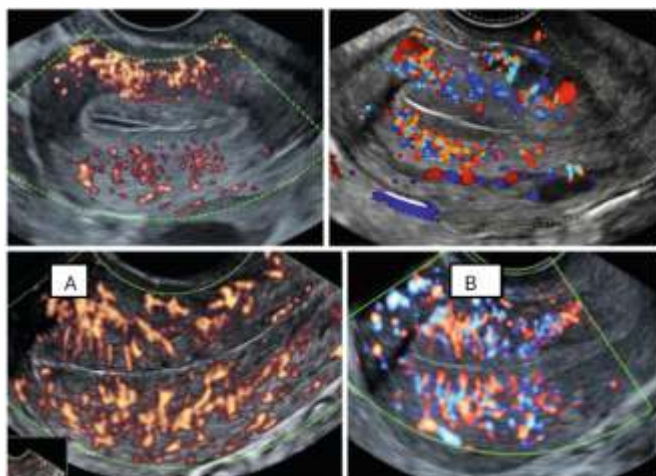
Sometimes we find Grade C endometrium which is isoechoic to the myometrium, which is the most unfavourable endometrium.

**Dopplers assessment pre-trigger :**

Again it's not the size which we always see for any structure it's the functionality which gives us the result. So Doppler's are used to see the functionality of the endometrium before giving the trigger<sup>12</sup>.

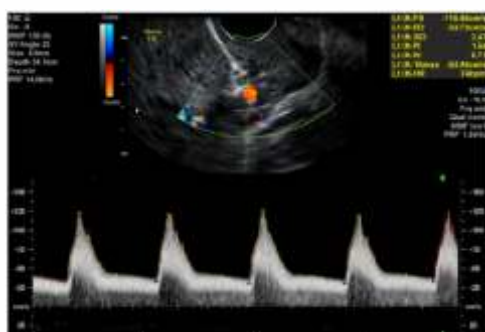
Also the nature does want less and more, so we have seen in many studies that with hyperstimulation the endometrial and subendometrial vascularity is decreased<sup>13</sup>. That's why natural cycle embryo transfer results are more better than stimulated cycle embryo transfer.

According to the applebaum<sup>14</sup>, endometrium has 4 zone of vascularity:



**Figure 6 Colour and power Doppler image of the midsagittal section of uterus with multi-layered endometrium showing :** **A** Image showing Zone 1 vascularity, which is just touching the outer layer of endometrium, near endo-myometrium junction. **B** Image showing Zone 2 vascularity, which shows vascularity just penetrating the endometrium and not touching the midline. **C** image Showing Zone 3 vascularity which shows vascularity mostly penetrating the endometrium but just one or two vessel touching the midline. **D** image Showing Zone 3 vascularity which shows almost all vessels are seen in the endometrium and more than 4-5 vessels touching the midline.

Zone 4 vascularity has very good prognostic factor<sup>15</sup>. The pulse Doppler of these arteries indicating RI between 0.49 to 0.59 and PI 1.1 and 2.3 has been reported to be a good prognostic factors<sup>16</sup>. If we give trigger by seeing this vascularity the result of implantation will increase.



**Figure 7 B mode image showing spectral Doppler of uterine artery with its indices in the image.**

### Uterine Artery Doppler :

The blood flow of the uterus always matters for implantation, if there is a high resistance in uterine artery as found in PCOS, there are less chances of implantation, so we always see uterine artery Doppler before trigger, the PI of uterine artery if < 3.2 during trigger always gives a desirable result. If it is found more or in PCOS, you can add ecosprin prior or adequate progesterone support in luteal phase to decrease uterine resistance.

Several studies have shown that good implantation has been seen with uterine artery PI between range of 2 and 3 on the day of trigger.<sup>17,18</sup>

### Conclusion :

So before giving trigger we have to see these three things about the follicle, the endometrium and the uterine artery for a successful implantation in simple ovulation, IUI or IVF.

1. The follicular flow, if it is 2/3 its very good, its Doppler indices of the perifollicular flow i.e. RI 0.4-0.48 and PSV>10.
2. The endometrial morphology, Grade A endometrium with zone 3- 4 vascularity is the best and sub endometrial blood flow RI <0.5 shows very good flow.
3. The uterine artery Doppler PI<3.2 shows low resistance flow pre-trigger.

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#### DR. PRAKASH PATEL

Clinical Director  
Infertility & IVF Specialist  
Diploma in Adv. Laproscopy (France)  
Diploma in Sonography (Croatia)



#### DR. AJAY PRAJAPATI

M.S. Gynec  
Fetal Medicine Expert  
& Infertility Specialist

#### DR. PURVI SHAH

M.B.B.S., D.G.O.  
Fetal Medicine Expert

#### DR. PAYAL PATEL

MS Obstetrician, Gynecologist  
Infertility Specialist

#### DR. SAURABH TRIVEDI

M.Sc., PGD in ART  
Chief Embryologist



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### OUR TEAM

**Dr. Nisarg Dharaiya** (Director & Chairman)

**Dr. Ushma Patel | Dr. Shetal Deshmukh**

**Dr. Khushali Shah | Dr. Rushi Patel | Dr. Krunal Modi**

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## AWARDS & ACHIEVEMENT OF SNEH HOSPITAL & DOCTOR TEAM

- Awarded as **HEALTHCARE LEADERSHIP AWARDS 2021** for Best Gynecologists & Infertility Specialist in Gujarat
- Awarded as **NATIONAL QUALITY ACHIEVEMENT AWARDS 2021** for Best Ivf & Infertility Surrogacy Centre of Gujarat & Ahmedabad.
- Awarded as "Gujarat NU GAURAV" for work in Healthcare sector by the **CHIEF MINISTER of Gujarat Shri. Vijay Rupani**. The felicitation was done considering extensive work of SNEH HOSPITAL in field of Infertility & IVF Treatment across Gujarat we announce proudly that we are the part of "**JOURNEY OF GROWTH & PROSPERITY OF GUJARAT, INDIA**"
- National Healthcare excellence award 2019 held at Delhi in presence of Health Minister of India Best awarded as a best IVF hospital of Gujarat
- Awarded as "**Asia's greatest Brand**" by One of the biggest in the asian subcontinent reviewed by price water house coppers p.l. for the category of asia's greatest 100 brands the year.
- International health care award 2017 & certificate of excellence presented to "**SNEH HOSPITAL & IVF CENTER**" for best upcoming IVF & Women infertility hospital of gujarat
- International health care award 2017 & certificate of excellence presented to most promising surgeon inOBST & Gynac
- The best male infertility specialist & IVF center of india awarded by india healthcare award
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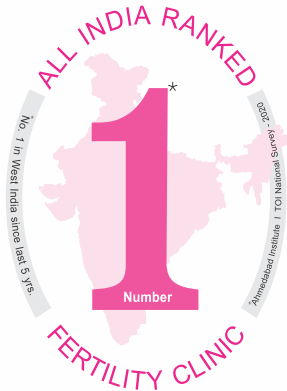
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- Vadodara :** 4th Floor, Trisha Square-2, Sampatrao Colony, Jetalpur Road, Aklapuri, Vadodara. Ph. 0265-2312250, 75750 99898
- Surat :** 9th Floor, Param Doctor House, Lal Darwaja, Station Road, Surat-395003. Ph. 0261-2424901, 0261-2424902, 98795 72247
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- Mumbai :** 2nd Floor, Vallabh Vihar, Nr. Ramji Mandir, M. G. Road, Ghatkopar (E), Mumbai-77. Ph. 022-250 88888, 93281 90146  
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Specialist in Advanced LAP Gynaec Surgeries &  
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## PRESENTING THE FIRST EVER STUDY FROM INDIA ON CARCINOMA ENDOMETRIUM

### SURGICOPATHOLOGICAL OUTCOMES AND SURVIVAL IN CARCINOMA BODY UTERUS: A RETROSPECTIVE ANALYSIS OF CASES MANAGED BY LAPAROSCOPIC STAGING SURGERY IN INDIAN WOMEN

**Objectives:** The context of this article is based on two main titles those being Gynecologic Oncology and Minimal invasive surgery. **The aim of this study was to report the laparoscopic management of a series of cases of endometrial carcinoma managed by laparoscopic surgical staging in Indian women.**

**Materials and Methods:** This study was conducted in a private hospital (referral minimally invasive gynecological center). This was a retrospective study (Canadian Task Force Classification II-3). Eighty-eight cases of clinically early-stage endometrial carcinoma staged by laparoscopic surgery and treated as per final surgicopathological staging. All patients underwent laparoscopic surgical staging of endometrial carcinoma, followed by adjuvant therapy when needed. Data were retrieved regarding surgical and pathological outcomes. Recurrence-free and overall survival durations were measured at follow-up. Survival analysis was calculated using Kaplan–Meier survival analysis.

**Results:** The median age of presentation was 56 years, whereas the median body mass index was 28.3 kg/m<sup>2</sup>. Endometrioid variety was the most commonly diagnosed histopathology. There were no intraoperative complications reported. The median blood loss was 100 cc, and the median intraoperative time was 174 min. There were a total of 5 recurrences (5.6%). The outcome of this study was comparable to studies conducted in Caucasian population. **The predicted 5-year survival rate according to Kaplan–Meier survival analysis is 95.45%, which is comparable to Caucasian studies.**

**Conclusion:** Laparoscopic management of early-stage endometrial carcinoma is a standard practice worldwide. However, there is still a paucity of data from the Indian subcontinent regarding the outcomes of laparoscopic surgery in endometrial carcinoma. The Asian perspective has been highlighted by a number of studies from China and Japan. **To our knowledge, this study is the first from India to analyze the surgicopathological outcomes following laparoscopic surgery in endometrial carcinoma.** The outcome of this study was comparable to studies conducted in Caucasian population.

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