



TRAINING ON INFERTILITY AND ASSISTED REPRODUCTION AT KAIRUKI GREEN IVF



BUNJU 'A' MIANZINI

DAR ES SALAAM, TANZANIA

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Overall management of intrauterine insemination procedures



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CONCEPT OF INTRAUTERINE INSEMINATION.

- Intrauterine insemination (IUI) also known as donor insemination is the unnatural introduction of sperm into the female reproductive apparatus in order to achieve a gestation without sexual intercourse

TYPES OF ARTIFICIAL IUI

- Depending of the sperm origen they can be
- Homologous or conjugal artificial insemination .
- Heterologous or artificial insemination with donnor sperm,

IUI INDICATIONS

- 1 - Cervical factors due to unfavourable, mucus, stenosis, injury and infections.
- 2 - Immunologic factors.
- 3 – Mild Endometriosis.
- 4 - Ovarian dysfunction: If gonadotropin as treatment for ovulation induction in cases of PCOS, the IUI has a higher chance of successful pregnancy compared to intercourse with subfertility patients.

IUI INDICATIONS

5. Erectile Dysfunction and premature ejaculation.
6. When avoiding to pass a genetic defect from the male parent.
7. Women with allergy to semen of the husband
8. Single women wishing to conceive,
9. Couples who are unable to have vaginal intercourse ,because of a physical disability or psychosexual problem.
10. Men who are HIV positive to reduce the risk of passing to the partner and potential child using sperm washing
11. Unexplained infertility

IUI INDICATIONS

- INCLUSION CRITERIA :

- . Patients capable of spontaneous or induced ovulation.
- Patients to have at least a fallopian tube with normal tubo-ovarian relationship.
- Easily negotiable cervical canal.
- Sperm count of more than 10 million-ml in pre-wash or post-wash with total progressive motile sperm concentration of more than 5 million-ml.

IUI SUCCESS RATES

- The success rate for the procedure depends on several factors which include age and underlying fertility challenges
- As a woman ages, the conception rates drop due to egg quality .Because of this .IUI is not usually recommended for intended mothers over 40.
- For women in their early 30s or younger , the success rate is around 20 to 25 %.
- For women aged 30 to 35 , the success rate of IUI is 15 to 20%.
- Women aged 35 to 40 have a 10 % success rate of becoming pregnant after IUI.By their early 40s the success rates drop to approximately 5%

IUI SUCCESS RATE

- Women with unexplained infertility with healthy eggs and two fallopian tubes IUI success rates is around 7 to 10 % per cycle but if IUI is done with fertility medications your success rate increases by 15 to 25 %.
- Women with a single fallopian tube permeable pregnancies can occur .but the success rate is 11.7 %

CONTRAINDICATION OF IUI

- Women with moderate to severe endometriosis.
- Women with both fallopian tubes removed or fallopian tubes blocked.
- Women with severe fallopian tube disease.
- Women with repetitive Pelvic Inflammatory Disease.
- Azoospermia.

FACTORS INFLUENCING IUI OUTCOME

- Female age: female age is the most important factor influencing likelihood of pregnancy in IUI cycles.
- Paternal age: It has no impact but men above 40 years old seems to be risk factor for spontaneous abortion.
- Semen quality:
 - Initial Total Motility. (TM) over 30%.
 - Inseminating Motile Ccount (IMC) over 1 million/ml.
 - Sperm Morphology using strict criteria over 4%.
 - Total progressive motile sperm count (TPMSC) over 5 million-ml.

FACTORS INFLUENCING IUI OUTCOMES

. Semen Preparation Techniques (SPT).

-Density Gradient Centrifugation: (DGC)

- DGC showed to be superior to swim up and simple wash technique. It selects spermatozoa according to their density and gravity improving the ones with grade A motility and normal DNA integrity.

- Although DGC showed to be superior to other techniques concerning to laboratory outcomes there is insufficient evidence to recommend any specific SPT when speaking to clinical outcomes after IUI.

- Nevertheless is clear that quality control and management in semen preparation for IUI is mandatory.

FACTORS INFLUENCING IUI OUTCOMES

- Characteristics of the donor
- Age range: 18-40 years old.
- To have proper physical and mental health.
- No personal or family history of genetic disorders also not sexual transmittable diseases.
- Proper quality of semen
- Passing interview with the psychologist and the donation coordinator.

FACTORS INFLUENCING IUI OUTCOMES

- . Numbers of IUI cycles: Pregnancy rates are nearly the same for the first 6 cycles, after which there is a fall. Thus, maximum number of IUI before deciding to IVF treatment should not exceed 4 – 6 of them.
- . Timing and number of insemination per cycle: it is accepted that insemination should be performed from just before to maximally 10 hours after ovulation. With the use of HCG, human chorionic gonadotropin, that time can be extended to 12 to 36 hours.
- Double IUI should only be advised when proven effective due mainly to psychological and economical burden. Most reports recommend a single well timed IUI in couples suffering from unexplained sub fertility.

FACTORS INFLUENCING IUI OUTCOMES

- Luteal Phase Support:
 - After IUI spermatozoa reach the fallopian tubes as soon as 2 minutes after insemination. It is recommended 10 to 15 minutes of rest after the procedure to increase the success rate of pregnancy, good luteal phase must be done
 - Vaginal route natural micronized progesterone is the most preferred route of administration in dosage of 200-400 mg/day 12hrly from 10 -12 weeks of pregnancy.

FACTORS INFLUENCING IUI OUTCOMES

. Rest After IUI. Spermatozoa reach the fallopian tubes as soon as 2 minutes after insemination. It is recommended 10-15 minutes of rest after the procedure to increase the success rate of pregnancy.

. Controlled Ovarian Stimulation

- IUI in combination with mild ovarian stimulation is effective in couples with unexplained subfertility , minimal to mild endometriosis and mild male subfertility.

- Ovarian stimulation with clomiphene citrate (50-100 mg per day for 5 days) or Letrozol tab 2.5 mg dosage of 5 mg od for 5 days after the second day of menstrual period remains as the first choice drugs to use. .

IUI PROCEDURE TECHNIQUE

- In patient who doesn't respond to oral stimulation or in older women the stimulation can be done with inj FSH in a dose of 75 to 150 mg od for 10 days .
- Also the use of antagonists such as Cetorelix 0.25 mg or Asporelix 0,25 mg subcutaneous on days 6 to 8 of menstrual period, if the follicles size are more than 13 to 14 mm , until follicles are 18 to 20 mm to preserve them.
- When follicles have grown to the right size of 18 to 20 mm Recombinant HCG 6500 IU subcutaneous on day 11 of the cycle is used to trigger and to release the oocyte.
- The day of the trigger patient must start using pessaries of progesterone 400 mg twice a day for 16 days.
- After 34 - 36 hrs the IUI must be performed.

Note:

All these medication must be controlled with ultrasound and hormonal studies.

IUI PROCEDURE TECHNIQUE

. Each medical facility and doctor will have their own specific instructions for the IUI procedure depending on the test results. Doctors will determine the ovulation day. . The male partner will provide a semen sample the day of the procedure or the donors sperm will be thawed.

. The sperm will be immediately taken to the laboratory where it will be washed. In this process the seminal fluid and other debris are removed so the sperm is very concentrated and unlikely to irritate the uterus.

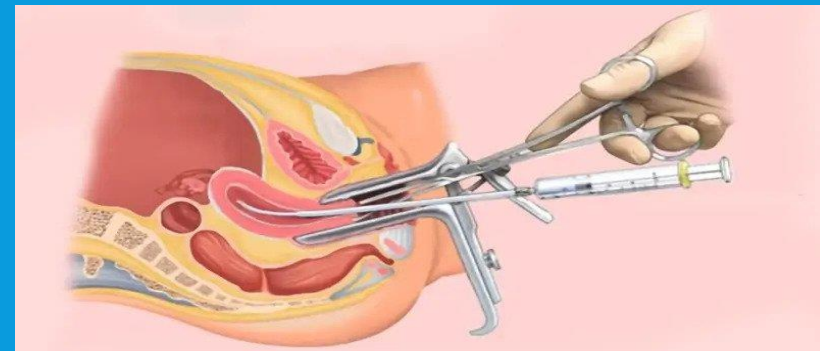
IUI is quick and typically painless and does not require anesthesia

RISKS OF IUI

- There is a small risk of infection following the IUI procedure but when keeping proper asepsia the risk diminishes.
- Trauma of the vagina and cervix.
- Hyperstimulation Ovarian Syndrome. (0.1 %)
- Multiple pregnancy. (88 % of pregnancy are single pregnancies, 11% twins, and 0.5 % triplets according to Spanish Society of Fertility)
- Ectopic pregnancy. (1.7 %)
- Sexual transmitted diseases. (Very Low.)

IUI PROCEDURE TECHNIQUE

- The patient must lie on lithotomy position on the examination table, after inserting a speculum through the vagina and visualizing the cervix, a cannula is inserted and placed in the uterus, then the semen is released.
- The patient must stay in that position for 10-15 min after the insemination.
- Some gynaecologist perform a second insemination the next day.
- After 2 weeks is recommended to do a pregnancy test with Beta HCG.



IUI TECHNIQUE

REFERENCES

- [Americanpregnancy.org/getting-pregnant/intrauterine-insemination](https://americanpregnancy.org/getting-pregnant/intrauterine-insemination) 2021.
- ESHRE Annual meeting info eshre.eu 26-6-23

Thank you for your time.

