

CONTRACEPTION & STERILIZATION



LEARNING OBJECTIVES

- Understand the mechanism of action of current contraceptive methods.
- Describe factors that affect contraceptive effectiveness.
- Understand the non-contraceptive benefits of methods.
- Remember the use of medical eligibility criteria for contraception.



The ideal form of contraception would be 100% effective, completely reversible, totally acceptable & absolutely free of side effects.

No such method exists.

Assessment of effectiveness by Pearl index: is the number of unwanted pregnancies which occur in 100 women using that method for a year.



EFFECTIVENESS

Method	typical use	perfect use
1. no method	85	85
2. fertility-awareness	24	0.4-0.5
3. male condom	18	2
4. diaphragm	12	6
5. progesterone-only pill	9	0.3
6. combined hormonal contraception	9	0.3
7. progesterone-only injectable	6	0.2
8. copper IUD	0.8	0.6
9. LNG-IUS	0.2	0.2



⦿ 10. progesterone -only implant	0.05	0.05
⦿ 11. female sterilization	0.5	0.5
⦿ 12. vasectomy	0.15	0.1



DEFINITION OF UKMEC CATEGORIES

- ◉ **UKMEC** **Definition of category**
- ◉ 1 A condition with no restriction for the use of the contraceptive method.
- ◉ 2 A condition where the advantages of the contraceptive method generally outweigh the theoretical or proven risks.
- ◉ 3 A condition where the theoretical or proven risks of the contraceptive method outweigh the advantages. Expert clinical judgement and/or referral to a specialist contraceptive provider is recommended.
- ◉ 4 A condition which represents an unacceptable health risk if the contraceptive method is used.



1-Methods not requiring medical consultation:

A-Coitus interrupts:

- ⊙ Withdrawal of penis at the moment before ejaculation. It causes psychological symptoms in both couples. Failure rate is high,.
- ⊙ Failure rates of about 10 per 100 WY
- ⊙ Failure occurs from delay in withdrawal or because the pre-ejaculatory fluid may contain some spermatozoa



B-Condom:

It has the **advantages**: that is readily available in most societies, does not need medical supervision & provides protection against sexually transmitted diseases. Occasional failures occur because the sheath is defective, or because it is not worn in the earlier phases of coitus. Recently female condom is polyurethane sheath inside the vagina, protect against sexual transmitted disease.



FERTILITY AWARENESS-BASED METHODS (FAB)

C-Safe period (rhythm or calendar method):

The method is based on the assumption that the ovum is capable of being fertilized for only 24 hours after its release, & that the sperm can fertilize the ovum for only 72 hours after they are deposited in the vagina. If ovulation occurs between days 12-16 of a 28 day cycle; the fertile period during which coitus should be avoided between day 9= (12-3) & day 17= (16+1) of the cycle.



Calendar method; relies on an analysis of the women's menstrual data over the preceding 6 months.

- ⦿ First fertile day = shortest cycle minus 20
- ⦿ Last fertile day = longest cycle minus 10

This method of contraception is not suitable for women with very irregular periods.

Temperature method

An attempt may be made to predict the time of ovulation by recording the basal body temperature first thing in the morning, coitus is avoided for 72 hours after the rise in temperature has occur (0.2-0.4C).



Cervical mucus method

- Few women able to determine the changes in her cervical mucus secretion (increase secretion of clear, slippery & stretchable cervical mucus can be detected in the vagina on the days preceding ovulation.
- **Cervical palpation**
- At midcycle, the cervix rises 1-2 cm and feels softer and moist.
- **Personal fertility monitor**
- This hand-held monitor analyses disposable urine dipsticks . ovulation kits are available for detecting the LH surge in the urine 36 hours before ovulation. A red light indicates fertile phase (risk of conception) and green, infertile.

The safe period has a high failure rate; pearl index is 20-40.



D- Spermicides:

- These are chemical substances placed in the vagina before coitus, which kill the spermatozoa. They are prepared as pessaries, cream, or foams. When used alone they give very poor results , but they are often used in conjunction with a mechanical barrier such as a diaphragm or condom. The method is simple, not need medical supervision. It sometime causes soreness or irritation to one or other partner.
- Some data have suggested that frequent use of N-9 might increase the risk of HIV transmission.



E-Vaginal tampons:

A disposable sponge impregnated with the spermicidal as nonoxynol- 9 used in the upper vagina as a barrier to sperm penetration of the cervix.



2-Methods requiring medical supervision:

- ◉ **A-Vaginal diaphragm & cervical cap:**
- ◉ These are latex or non-latex devices that are inserted into the vagina to prevent passage of sperm to the cervix

The vaginal diaphragm is made in various sizes. They are used in conjunction with spermicide. The diaphragm is inserted before coitus, & should not be taken out for at least 6 hours afterwards, so that the spermicide will kill any spermatozoa before it is removed.

Disadvantages: it is coitally related. The only contraindication to use of diaphragm is occurrence of uterine prolapsed.

Cervical caps are not widely used as the diaphragm. It is cup-shaped rubbered cap which fits over the cervix.



DIAPHRAGM AND CAP

⦿ **Disadvantages**

- ⦿ are that women need to be taught how to insert and remove the device
- ⦿ and typical failure rates in the region of 18% are reported.
- ⦿ In some women their use may be associated with increased vaginal discharge and urinary tract infections.



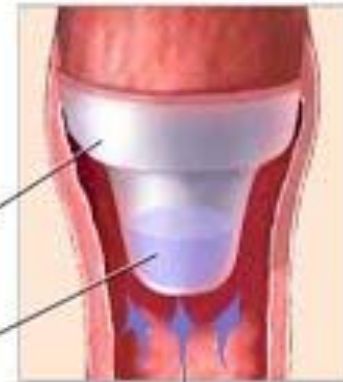
Cervical Cap



Barrier method:
The cervical cap fits snugly over the cervix, preventing sperm from entering the uterus



Cervical cap blocks sperm from entering cervix



Spermicide

Sperm



Spermicide inside diaphragm kills sperm





Diaphragm



Cervical Cap



Spermicide

Diaphragm

Vagina



B- I.U.C.D: 3 types

- 1-inert devices such as lippes loop.
- 2-devices with various applications of copper designed to increase effectiveness & decrease surface area &so decrease side effects particularly the menorrhagia & dysmenorrheal e.g. copper T &7 & now Multiload & Nova T.
- 3-Medicated I.U.C.D releasing low concentrations of progesterone or norgestrel e.g



- The 52 mg LNG-IUS (Mirena®) . levonorgestrel available in U.K in 1995 release 20 ug levonorgestrel /day & lasting for 5 years, advantage is menstrual blood loss is very substantially reduced 90% at 1 year.
- and the 13.5 mg LNG-IUS
- (known as Jaydess) is licensed for 3 years for contraceptive use.





A



B



C



D



E



DISPLACED IUCD WITH EARLY PREGNANCY



A



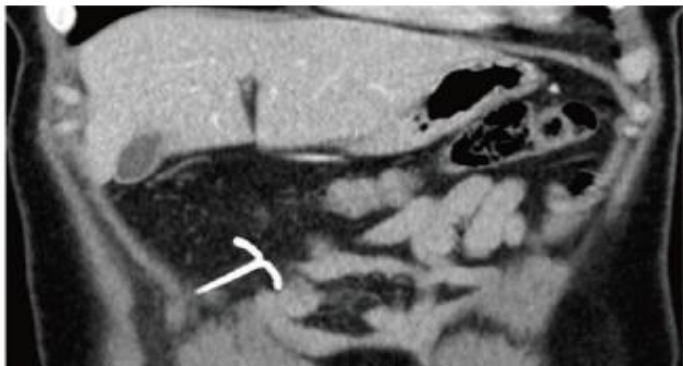
B



PERFORATED IUCD



A



C



B



- ◉ **Mechanism of action:**
- ◉ IUDs work by inhibiting fertilisation by direct toxicity . An inflammatory reaction within the endometrium can also have an anti-implantation effect. Copper is toxic to the ovum and the sperm and the copper content of the cervical mucus inhibits sperm penetration as well
- ◉ . LNG-IUS works primarily by its effect on the endometrium, which prevents endometrial proliferation and implantation. Its progestogenic effect on thickening the cervical mucus also
- ◉ impedes entry of sperm The LNG-IUS does not prevent ovulation.



- The Cu-IUD duration of use is between 3 and 10 years, depending on the device used and age of woman at insertion. If a woman has a Cu-IUD inserted at 40 years or above, it can be left *in situ until the* menopause.
- For women who have a 52 mg LNG-IUS inserted at 45 years or over, the device can be left for contraceptive purposes until the menopause.



NON-CONTRACEPTIVE HEALTH BENEFITS OF LNG-IUS (52 MG)

- ⦿ Heavy menstrual bleeding
- ⦿ Endometriosis
- ⦿ Adenomyosis
- ⦿ Dysmenorrhoea
- ⦿ Endometrial protection
- ⦿ Simple hyperplasia



CONTRAINDICATIONS:

- 1-pregnancy.
- 2-multiple fibroids.
- 3-congenital uterine abnormality.
- 4-acute or sub acute PID or active vaginal inflammation.
- 5-ca. of the cervix or of body of uterus.
- 6-valvular heart disease (risk of bacterial endocarditic).



7-abnormal uterine bleeding.

8-known allergy to copper if a copper IUCD is being chooses.



INSERTION:

An IUD can be fitted at any point in the cycle provided there is no risk of pregnancy.

Postpartum insertion; should be delayed 8 weeks to decrease the risk of expulsion & perforation especially in lactating woman.

IUD can be inserted immediately after abortions; although expulsion rates may be higher in second trimester abortion.

Efficacy; during first year after insertion between 2-3% of women will conceive. Levonorgestrel is more effective 0.1.



SIDE EFFECTS:

1-Menstrual disturbances: the effects of IUD on the endometrial particularly. The local PGs tends to cause increase menstrual bleeding & dysmenorrheal. Also IUD may cause irregular bleeding. In contrast the levonorgestril IUD decrease the blood loss.



2-Perforation; usually occur at the time of insertion; & it is often unnoticed . It is about 1:1000 & most frequently is through the uterine fundus. It should be suspected when at the routine follow up (6 weeks later) there is absence of the thread (other 2 possibilities is either expulsion of the device or it is rotated within uterine cavity). Pelvic u/s or x-ray will help to localize the device. Intraperitoneal devices can be recovered through laparoscope or sometime laprotomy.



3-expulsion; rate vary from 1-20 women, most commonly in the first 3 months of use.

- 4-ectopic pregnancy; women using IUD has 80% decrease in the risk of ectopic pregnancy compared with women not using contraception.but if pregnancy occur with IUCD more likely it is ectopic pregnancy.

- The ectopic pregnancy rate for Cu-IUD users is 0.02 per 100 WY (0.3-0.5 per 100 WY for those not using contraception)

5-pelvic infection; infection is most likely to occur during the 20 days following insertion

Actinomycosis occur more with IUCD.



-pregnancy with IUCD in place; increase risk of about 3 x & removal of IUCD will decrease the risk of abortion. If the IUCD left in place there is slight risk of intrauterine infection, preterm labour, second trimester miscarriage & APH, but most pregnancies are uncomplicated & the device is delivered with the placenta.



◎ **THANK YOU**

