

Chapter 4. Reproductive Health

Reproductive Health Problems and Strategies

1 Mark Questions

1.Name an IUD that you would recommend to promote the cervix hostility to sperms. [Delhi 2014 c]

Ans.The hormone releasing IUD's, e.g. progestasert, LNG-20 are recommended to promote the cervix hostility to sperms.

2.State one reason why breast feeding the baby acts as a natural contraceptive for the mother?[Delhi 2014 C]

Ans.Since lactation or breast feeding the baby delays the onset or return of menstruation and ovulation cycle, due to interference of hormones. Therefore, the chances of conception are nil during this period, i.e. upto six months. Hence, breast feeding baby may act as a natural contraceptive for mother

3.Mention one positive and one negative application of amniocentesis. [Delhi 2010]

Ans.Application of amniocentesis are:

(i) Positive application It can be used to diagnose any chromosomal abnormality or genetic disorder in foetus.

(ii) Negative application It can be used to determine the sex of foetus and leads to female foeticide.

4.Why is tubectomy considered a contraceptive method? [Foreign 20101]

Ans.In tubectomy, a small part of Fallopian tube or oviduct is tied up to block the transport of sperm, so as to prevent fertilisation. So, it is considered as a contraceptive method

5.How does Cu-T act as an effective contraceptive for human females?[Delhi 2009]

Ans.Copper-T (Cu-T) is an Intra Uterine Device (IUD) that serves as an effective contraceptive in the following ways:

(i)Increases phagocytosis of sperms within the uterus.

(ii)Copper ions released suppresses the motility of sperms and their fertilising ability.

6.Why do some women use Saheli pills? [All India 2009 C, 2009]

Ans.Reasons to use Saheli pills by women are mainly to prevent conception because it

(i) contains a non-steroidal component.

(ii) is once-a-week pill.

(iii) has high contraceptive value with fewer side effects than other oral pills.

(iv) inhibits ovulation and implantation

7.Mention any two events that are inhibited by the intake of oral contraceptive pills to prevent pregnancy in humans. [All India 2009]

Ans.Oral contraceptives prevent pregnancy in humans females by

(i) inhibiting secretion of FSH and LH from anterior pituitary leading to inhibition of ovulation from the ovary and implantation.

(ii) inhibiting the entry of sperms in the uterus.

8. Give one reason for a statutory ban on amniocentesis. [All India 2008 C]

Ans. Statutory ban on amniocentesis is due to its misuse to detect the sex of pre-born child that leads to female foeticide

2 Marks Questions

9. What is amniocentesis? How is it misused? [Delhi 2014 C]

Ans. Amniocentesis is a pre-natal diagnostic test based on the chromosomal pattern of the cells in the amniotic fluid that surrounds the developing foetus in the womb. Statutory ban on amniocentesis is due to its misuse to detect the sex of pre-born child that leads to female foeticide

10. What do oral pills contain and how do they act as effective contraceptives? [Delhi 2014 c]

or

Name the hormonal composition of the oral contraceptive used by human females. Explain how does it act as contraceptive? [Delhi 2009]

Ans. Oral contraceptive or pills are either progestogens or progestogen oestrogen combinations. They function as contraceptives by

(i) inhibiting ovulation.

(ii) inhibiting implantation.

(iii) altering the quality of cervical mucus to prevent or stop the entry of sperms

11. Why is Cu-T considered a good contraceptive device to space children? [Delhi 2011] or

A mother of one year old daughter wanted to space her second child. Her doctor suggested Cu-T. Explain its contraceptive actions. [Delhi 2008]

Ans. Cu-T is an IUD, inserted by experts, which functions by releasing Cu ions which reduces sperm motility and the fertilising capacity of sperms. It also increases phagocytosis of sperms within the uterus by female.

12. Name an oral pill used as a contraceptive by human females. Explain how does it prevent pregnancy? [Delhi 2011]

Ans. Contraceptive oral pill 'Saheli' is used to space children. Saheli inhibits ovulation and implantation. It alters the quality of cervical mucus to prevent the entry of sperms into cervix.

13. Describe the lactational amenorrhoea method of birth control. [All India 2011] or

What is lactational amenorrhoea? [All India 2008 C]

Ans. Lactation amenorrhoea refers to the absence of menstruation during the period of intense lactation following parturition. It is a birth control method because

(i) ovulation and other events of menstrual cycle are stopped at this time.

(ii) as long as the mother breast feeds her child, chances of conception are nil. However, this method is generally reliable up to only six months after delivery.

14. How do copper and hormone releasing IUDs act as contraceptives? Explain. [All India 2010]

Ans. Copper and hormone releasing IUDs act as contraceptives because

(i) IUDs (Cu-T, Cu-7) release Cu ions, which suppress sperm motility and the fertilising capacity of sperms.

(ii) Hormone releasing IUDs (progestasert, LNG-20)

- inhibits ovulation.
- make the cervix unreceptive to sperms.
- make the uterus unsuitable for implantation.

(iii) Increase phagocytosis of sperms within the uterus.

15.What is amniocentesis? Why has the government imposed a statutory ban inspite of its importance in medical field? [Foreign 2010]

Ans.Government imposed a statutory ban because of its misuse. It is used to diagnose the sex of the foetus and leads to female foeticide.

16.Why is Saheli a well accepted contraceptive pill?[Foreign 2010; Foreign 2008]

Ans.Reasons to use Saheli pills by women are mainly to prevent conception because it

(i) contains a non-steroidal component.

(ii) is once-a-week pill.

(iii) has high contraceptive value with fewer side effects than other oral pills.

(iv) inhibits ovulation and implantation

17.Name any two copper-releasing Intra Uterine Devices (IUDs). List two reasons that make them effective contraceptives.[All India 2009 C]

Ans.Copper and hormone releasing IUDs act as contraceptives because

(i) IUDs (Cu-T, Cu-7) release Cu ions, which suppress sperm motility and the fertilising capacity of sperms.

(ii) Hormone releasing IUDs (progestasert, LNG-20)

- inhibits ovulation.
- make the cervix unreceptive to sperms.
- make the uterus unsuitable for implantation.

(iii) Increase phagocytosis of sperms within the uterus.

18.(i) Expand IUD.

(ii) Why is hormone releasing IUD considered a good contraceptive to space children? [All India 2008]

Ans.(i) IUDs – Intra Uterine Devices

(ii)Hormone releasing IUDs (progestasert, LNG-20)

- inhibits ovulation.
- make the cervix unreceptive to sperms.
- make the uterus unsuitable for implantation.

19.How do surgical procedures prevent conception in human? Mention the way it is achieved in human males.[Foreign 2008]

Ans.Surgical procedures prevent conception by blocking gamete transport.In human males, surgical procedure is called vasectomy. In this surgery, a small part of the vas deferens is removed or tied up through a small incision on the scrotum.

20. Identify A, B, C and D in the following table with reference to birth control

Method	Example
A	Diaphragm
Female sterilisation	B
C	Saheli
D	Cu-T

[All India 2008C]

Ans. A— Barrier B —Tubectomy
C-Oral pill D-IUD

3 Marks Questions

21. If implementation of better techniques and new strategies are required to provide more efficient care and assistance to people, then why is there a statutory ban on amniocentesis? Write the use of this technique and give reason to justify the ban. [All India 2014]

Ans. Though implementation of better techniques and new strategies are required to provide more efficient care and assistance to people, there is a statutory ban on amniocentesis. Amniocentesis is one of such techniques that allows to determine any chromosomal abnormalities or genetic disorders and sex as well as fetal infections, by using minute amount of amniotic fluid, surrounding the foetus. So, this prenatal diagnostic test is particularly useful for those women who are at increased risk or have genetic disorders or chromosomal problems. But with the misuse of this technique to determine sex of the foetus which had ultimately lead to increase in female foeticides, government has imposed a statutory ban to prevent its further misuse and balance the unequal sex ratio prevailing in human population.

22. A woman has certain queries as listed below, before starting with contraceptive pills. Answer them.

- (i) What do contraceptive pills contain and how do they act as contraceptives?
(ii) What schedule should be followed for taking these pills?

Ans. (i) Oral contraceptive or pills are either progestogens or progestogen oestrogen combinations. They function as contraceptives by

- (a) inhibiting ovulation.
(b) inhibiting implantation.
(c) altering the quality of cervical mucus to prevent or stop the entry of sperms

(ii) The oral contraceptive pills are to be taken daily for 21 days, preferably within the first five days of menstrual cycle. After the onset of menstruation cycle, i.e. 5-7 days, the process is to be repeated in the same pattern (again for 21 days).

This schedule is to be followed till the women want to avoid conception

23. (i) Name any two copper releasing IUDs.

(ii) Explain how do they act as effective contraceptives in human females. [All India 2014]

Ans. (i) The copper releasing IUDs are Cu-T, Cu-7 and multiload 375 (any two).

(ii) Cu releasing IUDs act as effective contraceptives in human females by increasing phagocytosis of sperms within the uterus. The Cu^{2+} ions released suppresses sperm motility as well as their fertilising capacity, thus preventing conception

24.Name and explain the surgical method advised to human males and females as a means of birth control. Mention its one advantage and one disadvantage. [Foreign 2014]

Ans.The surgical or sterilisation methods advised to human males and females as effective means of birth control are:

(i) Vasectomy (In males) A sterilisation method in which a small portion of vas deferens is removed or tied up through a cut or incision on scrotum, thus blocking the transport of sperms.

(ii) Tubectomy It is a sterilisation technique for females where a small part of Fallopian tube is removed or tied up through incision in abdomen or through vagina.

The advantage of these two sterilisation methods in both human males and females is that it is a very effective method for preventing conception as it blocks transport of gametes.

The disadvantage of this technique is that this surgical procedure cannot be reversed, so it is helpful for only those who already have children, and do not want to extend their family further.

25.A pregnant human female was advised to undergo MTP. It was diagnosed by her doctor that the foetus, she is carrying has developed from a zygote formed by an XX-egg fertilised by Y-carrying sperm. Why was she advised to undergo MTP?[HOTS; All India 2011]

Ans.In this case, zygote will be XXY and will develop into a male with Klinefelter's syndrome. Such individuals show feminine characters, gynaecomastia and are sterile. Due to these disorders, the woman was prescribed MTP

26.How do the following contraceptives act to prevent unwanted pregnancy in human females?

(i)Intra Uterine Devices (IUDs)

(ii)Saheli

Ans.(i)Copper and hormone releasing IUDs act as contraceptives because

(a) IUDs (Cu-T, Cu-7) release Cu ions, which suppress sperm motility and the fertilising capacity of sperms.

(b) Hormone releasing IUDs (progestasert, LNG-20)

- inhibits ovulation.
- make the cervix unreceptive to sperms.
- make the uterus unsuitable for implantation.

(c) Increase phagocytosis of sperms within the uterus.

(ii)Reasons to use Saheli pills by women are mainly to prevent conception because it

(a) contains a non-steroidal component.

(b) is once-a-week pill.

(c) has high contraceptive value with fewer side effects than other oral pills.

(d) inhibits ovulation and implantation.

Sexually Transmitted Diseases (STDs) and Infertility

1 Mark Question

1.Name the STDs which can be transmitted through contaminated blood. [All India 2009 C]

Ans. AIDS (Acquired Immuno Deficiency Syndrome) is a STD that can be transmitted through contaminated blood

2 Marks Questions

2. Intra-cytoplasmic sperm injection' and 'Gamete Intra Fallopian Transfer (GIFT)' are two assisted reproductive technologies. How is one different from the other? [All India 2014 C]

Ans. In gamete intra fallopian transfer, the ovum from a healthy donor female is transferred to a female, who cannot produce ova but can provide suitable environment for fertilisation and embryo development (in vivo fertilisation).

While in intra cytoplasmic sperm injection, the fertilisation is done in vitro by injecting sperms directly into the ovum, from a donor female, under simulated conditions. The embryo is thus, formed in laboratory and later transferred to uterus or Fallopian tube for further development

3. Explain the Zygote Intra Fallopian Transfer Technique (ZIFT). How is Intra Uterine Transfer Technique (IUT) different from it? [All India 2010]

Ans. ZIFT (Zygote Intra Fallopian Transfer) is the technique in which zygote or early embryo with upto 8 blastomeres is transferred into the Fallopian tube of female.

Whereas in IUT, embryo with more than 8 blastomeres is transferred into the uterus.

4.(i) Give any two reasons for infertility among young couple.

(ii) Test-tube baby programme is a boon to such couples. Explain the steps followed in the procedures. [All India 2010 c]

Ans. (i) The reasons of infertility in young people can be physical, congenital diseases, use of drugs, immunological or even psychological. " i

(ii) In test-tube programme

- Ova from the wife or a donor female and the sperms from the husband or a donor male is allowed to fuse under simulated conditions in the laboratory. It is called in vitro
- Embryo is then transferred into the uterus or fallopian tube for further development.

The process of embryo transfer is done in following ways:

Zygote or embryo up to 8 blastomeres is transferred into Fallopian tube (ZIFT).

Embryo with more than 8 blastomeres is transferred into uterus (IUT).

3 Marks Questions

5. A couple where both husband and wife are producing functional gametes, but the wife is still unable to conceive, is seeking medical aid. Describe any one method that you can suggest to this couple to become happy parents. [All India 2014]

Ans. In case, if both husband and wife are producing functional gametes but wife is not able to conceive, the IVF technique can be best employed to bless them with child.

Method of In vitro fertilisation:

(i) Gametes from both husband and wife are collected, i.e. sperm and ova and fused to form zygote under laboratory conditions. As fertilisation takes place outside the female body, it is referred to as in vitro fertilisation.

(ii) The zygote or embryo is then either transferred to Fallopian tubes (if up to 8 blastomeres), i.e. ZIFT ' or to the uterus (more than 8 blastomeres), i.e. IUT.

6. Explain any two methods of Assisted Reproductive Technology (ART) that has helped childless couples to bear children. [All India 2008 C]

Ans. The two methods of ARTs (Assisted Reproductive Technologies) that has helped childless couples to bear children:

(i) **Test-tube baby programme .**

In test-tube programme

- Ova from the wife or a donor female and the sperms from the husband or a donor male is allowed to fuse under simulated conditions in the laboratory. It is called in vitro

- Embryo is then transferred into the uterus or fallopian tube for further development.

The process of embryo transfer is done in following ways:

Zygote or embryo up to 8 blastomeres is transferred into Fallopian tube (ZIFT).

Embryo with more than 8 blastomeres is transferred into uterus (IUT).

(ii) **ICSI** It is carried out by directly injecting sperm into the ovum to form an embryo in the laboratory.

Embryo transfer is done later on.

5 Marks Question

7. How are assisted reproductive technologies helpful to humans? How are ZIFT and GIFT different from intra uterine transfers? Explain [Foreign 2009]

Ans. ARTs (Assisted Reproductive Technologies) are helpful to humans as they enable the infertile couple to have children. The ART techniques ZIFT and GIFT are different because **ZIFT** (Zygote Intra Fallopian Transfer) is related to embryo transfer in the test-tube programme.

In this technique, the zygote or embryo up to 8 blastomeres is transferred into the Fallopian tube. **GIFT** (Gamete Intra Fallopian Transfer) is the technique in which ovum collected from a donor female is transferred into the Fallopian tube of another female, who cannot produce an ovum, but can provide suitable conditions for fertilisation and further development.

Whereas, **IUT** (Intra Uterine Transfer) is the technique in which embryo of more than 8 blastomeres are transferred into the uterus.