**Dr Alaa Ibrahim**

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**Termination of pregnancy (induced abortion)**

**Objective:**

1.To know the indication for termination of pregnancy

2.To know the methods of terminations.

3.The complications of termination

**Termination of pregnancy (induced abortion):**

**INDUCTION OF ABORTION:**

Induction of abortion is defined as deliberate termination of pregnancy either by medical or by surgical method before the viability of the fetus. The induced abortion may be legal or illegal (criminal).

**MEDICAL TERMINATION OF PREGNANCY (MTP)**

**The indications:**

 The continuation of pregnancy would involve serious risk of life or grave injury to the physical

and mental health of the pregnant woman.

 There is a substantial risk of the child being born with serious physical and mental abnormalities

so as to be handicapped in life;

i.Structural (Anencephaly), chromosomal(Down’s syndrome) or genetic (Hemophilia) abnormalities of the fetus.

ii. When the fetus is likely to be deformed due to action of teratogenic drugs (warfarin) or radiation

exposure (>10 rad) in early pregnancy.

iii. Rubella, a viral infection affecting in the "first trimester.

 When the pregnancy is caused by rape.

 To save the life of the mother (therapeutic or Medical termination): (i) Cardiac diseases (Grade III

and IV) with history of decompensation in the previous pregnancy or in between the pregnancies.

(ii) Chronic glomerulonephritis. (iii) Malignant hypertension. (iv) Intractable hyperemesis

gravidarum. (v) Cervical or breast malignancy. (vi) Diabetes mellitus with retinopathy.

(vii) Epilepsy or psychiatric illness.

 Social indications.

**RECOMMENDATIONS:**

 Termination can only be performed in hospitals, established or maintained by the government

or places approved by the government.

 Pregnancy can only be terminated on the written consent of the woman. Husband‘s consent is

not required.

 Pregnancy in a minor girl (below the age of 18 years) cannot be terminated without

written consent of the parents or legal guardian.

 Termination is permitted up to 20 weeks of pregnancy. When the pregnancy exceeds 12 weeks,

opinion of two medical practitioners is required.

**METHODS OF TERMINATION OF PREGNANCY:**

**Medical**

**Surgical**

First Trimester (Up to 12 Weeks) Second Trimester (13–20 Weeks)

**FIRST TRIMESTER TERMINATION OF PREGNANCY**

**MEDICAL METHODS OF FIRST TRIMESTER ABORTION:**

**Mifepristone (RU-486) and Misoprostol:**

Mefipristone is a synthetic steroid that block biological action of progesterone by binding to its receptor in the uterus ,following withdrawal of the effect of progesterone, the uterus contracts and bleeding from placental bed, followed by abortion 2-5 days later

PROTOCOL:

1. A 200 mg of mifepristone orally is given on day 1. On day 3, misoprostol (PGE1) 400 mcg orally or 800 mcg vaginally is given. Patient remains in the clinic for 4 hours during which expulsion of the conceptus (95%) often occurs. Patient is reexamined after 10–14 days. Complete abortion is observed in 95%, incomplete in about 2% of cases and about 1% do not respond at all. Oral mifepristone 200 mg (1 tab) with vaginal misoprostol 800 mcg (4 tab, 200 mcg each) after 6–48 hours is equally effective.

Medical methods are safe, effective, noninvasive and have minimal or no complications.

1. Methotrexate and Misoprostol—Methotrexate 50 mg/m2 IM (before 56 days of gestation) followed by 7 days later misoprostol 800 mcg vaginally is highly effective. Misoprostol may have to be repeated after 24 hours if it fails.

If the procedure fails, ultrasound examination is done to confirm the failure. Then suction evacuation should be done. Methotrexate and misoprostol regimen is less expensive but takes longer time than mifepristone and misoprostol.

**SURGICAL METHODS OF FIRST TRIMESTER ABORTION:**

 **VACUUM ASPIRATION (MVA/EVA)** is done up to 12 weeks with minimal cervical dilatation.

It is performed as an outpatient procedure using a plastic disposable cannula (up to 12 mm size) and

a 60 mL plastic (double valve) syringe. It is quicker (15 minutes), effective (98–100%), less

traumatic and safer than dilatation, evacuation and curettage.

 SUCTION EVACUATION AND/OR CURETTAGE:

This improvised method consists of a suction machine fitted with a cannula either plastic (Karman) or metal available in various sizes.

Advantages: (1) It is done as an outdoor procedure. (2) Hazards of general anesthesia are absent as it is done, at best, under paracervical block anesthesia. (3) Ideal for termination for therapeutic indications. (4) Blood loss is minimal. (5) Chance of uterine perforation is much less especially with the plastic cannula.

Drawbacks: (1) The method is not suitable with bigger size uterus of more than 10 weeks as chance of retained products is more. (2) Requires electricity to operate and the machine is costly.

 **DILATATION AND EVACUATION.** **is a surgical procedure often performed after a first trimester miscarriage.**

**MIDTRIMESTER TERMINATION OF PREGNANCY**

**MEDICAL METHODS:**

**PROSTAGLANDINS**: Prostaglandins and their analogs are very much effective. They are used

extensively, especially in the second trimester. They act on the cervix and the uterus. The PGE

(dinoprostone, sulprostone, gemeprost, misoprostol) and PGF (carboprost) analogs are commonly

used. PGEs are preferred as they have more selective action on the myometrium and less side effects.

(i) **Misoprostol (PGE1 analog):** 400–800 mcg of misoprostol given vaginally at an interval of 3–4 hours is most effective as the bioavailability is high. This regimen has got 100% success in second trimester abortion. The mean induction—abortion interval is 11–12 hours.

(ii) **Mifepristone and prostaglandins**: Mifepristone 200 mg oral, followed 36–48 hours later by misoprostol 800 mcg vaginal; then misoprostol 400 mcg oral every 3 hours for four doses is used. Success rate of abortion is 97% and median induction delivery interval is 6.5 hours. Pretreatment with mifepristone reduces the induction-abortion interval significantly compared to use of misoprostol alone.

(iii) **Gemeprost (PGE1 analog):** 1 mg vaginal pessary every 3–6 hours for five doses in 24 hours has got about 90% success. The mean induction-abortion interval was 14–18 hours.

(iv) **Dinoprostone (PGE2 analog):** 20 mg is used as a vaginal suppository every 3–4 hours (maximum for 4–6 doses). When used along with osmotic dilators, the mean induction to abortion interval is 17 hours. PGE2 is thermolabile (needs refrigeration) and is expensive.

(v) **Prostaglandin F2D (PGF2D), carboprost tromethamine**—250 mcg IM every 3 hours for a maximum ten doses can be used. The success rate is about 90% in 36 hours. Side effects of PGF2D (nausea, vomiting, diarrhea and pain at injection site) are more. It is contraindicated in cases with bronchial asthma.

**OXYTOCIN:** High-dose oxytocin as a single agent can be used for second trimester abortion. It is effective in 80% of cases. It can be used with intravenous normal saline along with any of the medications used either intra-amniotic or extra-amniotic space in an attempt to augment the abortion process. Currently high dose (up to 300 units in 500 mL of dextrose saline) is favored.

**SURGICAL METHODS:**

It is difficult to terminate pregnancy in the second trimester with reasonable safety as in first trimester. The following surgical methods may be employed. Between 13 weeks and 15 weeks

Dilatation and Evacuation in the mid trimester is less commonly done.

Pregnancies at 13–14 menstrual weeks are evacuated.

In all midtrimester abortion, cervical preparation must be used to make the process easy and safe:

- Intracervical tent (Laminaria osmotic dilator).

-mifepristone or misoprostol are used as the cervical priming agents. the procedure may need to be

performed under ultrasound guidance to reduce the risk of complications. Simultaneous

use of oxytocin infusion is useful.

Between 16 weeks and 20 weeks:

**INTRAUTERINE INSTILLATION OF HYPERTONIC SOLUTION:**

 Isotonic saline is infused extra-amniotically using a transcervical catheter balloon. Results are similar to that of Foley’s catheter use alone.

 Intra-amniotic: Intra-amniotic instillation of hypertonic saline (20%) is less commonly used now. It is instilled through the abdominal route.

**HYSTEROTOMY:** The operation is performed through abdominal route.

Indications: (i) Prior failed medical termination of pregnancy (TOP)

(ii) Cases where D&E cannot be safely done: (a) fibroid in the lower uterine segment, (b) uterine anomalies, (c) patients with repeated scarred uterus with placenta accreta or percreta. It is less commonly done these days.

Hazards: Immediate: (i) Hemorrhage and shock. (ii) Anesthetic complications. (iii) Peritonitis.

(iv) Intestinal obstruction.

Remote: (1) Menstrual abnormalities. (2) Scar endometriosis (1%). (3) Incisional hernia. (4) If

pregnancy occurs, chance of scar rupture.

**COMPLICATIONS OF MTP**

The complications are much less (5%) if termination is done before 8 weeks by MVA or suction evacuation/curette.

The complications are about five times more in midtrimester termination.

Use of PG analogs and mifepristone has made second trimester MTP effective and safe.

The complications are either related to the methods employed or to the abortion process.

**IMMEDIATE:**

(1) Injury to the cervix (cervical lacerations).

(2) Uterine perforation during D&E.

(3) Hemorrhage and shock due to trauma, incomplete abortion, atonic uterus or rarely coagulation

failure.

(4) Thrombosis or embolism.

(5) Postabortal triad of pain, bleeding and low-grade fever due to retained clots or products. Antibiotics should be continued, may need repeat evacuation.

(6) Related to the methods employed:

Prostaglandins—intractable vomiting, diarrhea, fever, uterine pain and cervicouterine injury.

Oxytocin—water intoxication and rarely convulsions z Hysterotomy.

Saline—hypernatremia, pulmonary edema.

**REMOTE:** The complications are grouped into:

1.Gynecological complications include—(a) menstrual disturbances, (b) chronic pelvic

infammation, (c) infertility due to cornual block, (d) scar endometriosis and (e) uterine

synechiae leading to secondary amenorrhea.

2.Obstetrical complications include—(a) recurrent midtrimester abortion due to cervical

incompetence, (b) ectopic pregnancy, (c) preterm labor, (e) increased perinatal loss, (f) rupture uterus, (g) Rh-isoimmunization in Rh-negative women, if not prophylactically protected with immunoglobulin and (h) failed abortion and continued pregnancy.

MORTALITY: First trimester: The maternal death is lowest especially with MVA and suction evacuation.

Midtrimester: The mortality rate increases five to six times to that of first trimester.

Medical termination Medical termination of pregnancy has been revolutionised by the introduction of prostaglandins and the antiprogesterone mifepristone.

Gestations of 9 weeks (63 days) or less can be successfully terminated with mifepristone 600 mg, followed 48 hours later by a prostaglandin (gemeprost or misoprostol). Less than 0.5 per cent will fail to respond to this regimen,4 which should be the method of choice at these gestations [A]. However, the diagnosis of fetal abnormality is extremely rare by 9 weeks’ gestation and so medical termination is usually performed in the second trimester. Medical termination has the additional advantage of allowing the opportunity for a postmortem examination. Pre-treatment with mifepristone (200 mg) sensitises the myometrium to prostaglandin agents and so reduces the induction–abortion interval [B]. Misoprostol is the prostaglandin of choice as it requires specific conditions for storage and transfer. The risk of failure to terminate the pregnancy is 6/1000. The standard regimen is: mifepristone 200 mg orally, followed 36–48 hours later by misoprostol 800 mg vaginally, then misoprostol 400 mg orally to a maximum of four oral doses. Third-trimester termination and intrauterine fetocide Since 1990, termination of pregnancy after 24 weeks has become legal if there is a lethal abnormality or sufficient evidence that the infant will be born with serious mental or physical disability.5 This is an extremely distressing situation to all involved, including the parents, obstetricians and midwives. The safety of medical termination has made late termination much safer, but the law states that the fetus must not be born alive. This requires intrauterine fetocide – which is achieved by fetal intracardiac injection of potassium chloride (KCl) via a 20-gauge transabdominal needle under ultrasound control. This procedure should be performed by an operator experienced in invasive fetal procedures. Fetal sedation may be necessary prior to the fetocide. This is achieved by the administration of diazepam or pethidine into the fetal circulation. An ultrasound should be performed 1 hour after the injection of KCl to ensure cessation of fetal heart pulsation. When the abnormality is incompatible with survival, fetocide is not mandatory, but the delivery management should be carefully discussed with the parents and health professionals involved and a care plan agreed. If the condition is not lethal, fetocide should be offered after 21+6. Failure to do so contradicts the intention of the abortion.10 The assessment of the level of disability is an extremely difficult area. Although the outcome of some abnormalities is well documented, an accurate prognosis of many prenatally detected anomalies is not possible. Advice from genetic specialists, counsellors and support groups may be sought, but ultimately the decision to terminate the pregnancy will rest with the parents. Consideration should be given to karyotyping the fetus by sending a fetal blood sample (and banking DNA) for cytogenetic analysis (with informed consent). The postmortem examination Parents may find the prospect of a postmortem examination of their baby very distressing, but it is a vital part of the management. Although high-quality ultrasound provides an accurate diagnosis of major fetal pathology, postmortem examination provides more detail, identifies abnormalities that permit a more specific diagnosis and modifies genetic counselling. Important diagnostic refinements are identified in up to 40 per cent of cases.6 The issue of postmortem examination has become further complicated by the legal requirement of consent. Consent is now required for the postmortem examination of fetuses at all gestations and, additionally, if tissues or organs are retained for later study or research. If parents do not consent K22970\_C033.indd 254 17/12/15 2:54 PM http://obgynebooks.com The continuing pregnancy 255 FETAL CONDITIONS to a postmortem examination, it is important to request photographs, X-rays and a sample of tissue (skin or placenta) for cytogenetic studies, which may provide additional information