

PERINATAL EDUCATION PROGRAMME

THE PUERPERIUM

UNIT 12

OBJECTIVES

When you have completed this unit you should be able to:

1. Define the puerperium.
2. List the physical changes which occur during the puerperium.
3. Manage the normal puerperium.
4. Assess a patient at the 6 week postnatal visit.
5. Diagnose and manage the various causes of puerperal pyrexia.
6. Recognize the puerperal psychiatric disorders.
7. Diagnose and manage secondary postpartum haemorrhage.
8. Teach the patient the concept of "the mother as a monitor".

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12-1 WHAT IS THE PUERPERIUM?

The puerperium is the period from the end of the third stage of labour until most of the patient's organs have returned to their pre-pregnant state.

12-2 HOW LONG DOES THE PUERPERIUM LAST?

The puerperium starts when the placenta is delivered and lasts for 6 weeks. However, some organs may only return to their pre-pregnant state weeks or even months after the 6 weeks have elapsed (e.g. the ureters). Other organs never regain their pre-pregnant state (e.g. the perineum).

It is important for the midwife or doctor to assess whether the puerperal patient has returned, as closely as possible, to normal health and activity.

THE PUERPERIUM STARTS WHEN THE PLACENTA IS DELIVERED AND LASTS FOR 6 WEEKS**12-3 WHY IS THE PUERPERIUM IMPORTANT?**

1. The patient recovers from her labour, which often leaves her tired and even exhausted. There is, nevertheless, a feeling of great relief and happiness
2. The patient undergoes what is probably the most important psychological experience of her life, as she realizes that she is responsible for another human being, her infant.
3. Breast feeding should be established.
4. The patient should decide, with the guidance of a midwife or doctor, on an appropriate contraceptive method.

12-4 WHAT PHYSICAL CHANGES OCCUR IN THE PUERPERIUM?

Almost every organ undergoes change in the puerperium. These adjustments range from mild to marked. Only those changes which are important in the management of the normal puerperium will be described here:

1. GENERAL CONDITION:
 - (i) Some women experience shivering soon after delivery, without a change in body temperature.
 - (ii) The pulse rate may be slow, normal or fast, but should not be above 100 beats per minute.
 - (iii) The blood pressure may also vary and may be slightly elevated in an otherwise healthy patient. It should, however, be less than 140/90 mm Hg.
 - (iv) There is an immediate drop in weight of about 8 kg after delivery. Further weight loss follows involution of the uterus and the normal diuresis, but also depends on whether the patient breast feeds her infant.
2. SKIN:
 - (i) The increased pigmentation of the face, abdominal wall and vulva lightens but the areolae may remain darker than they were before pregnancy.
 - (ii) With the onset of diuresis (increased amount of urine passed) the general puffiness and any oedema disappear in a few days.
 - (iii) Marked sweating may occur for some days.
3. ABDOMINAL WALL:
 - (i) The abdominal wall is flaccid (loose and wrinkled) and some separation (divarication) of the abdominal muscles occurs.
 - (ii) Pregnancy marks (striae gravidarum), where present, do not disappear but do tend to become less red in time.

4. GASTROINTESTINAL TRACT:

- (i) Thirst is common.
- (ii) The appetite varies from anorexia to ravenous hunger.
- (iii) There may be flatulence (excess wind).
- (iv) Many patients are constipated as a result of decreased tone of the bowel during pregnancy, decreased food intake during labour and the enema given during labour. Constipation is common in the presence of an episiotomy or painful haemorrhoids.

The routine administration of enemas when patients are admitted in labour is unnecessary and is not beneficial to patients. It also causes constipation during the puerperium.

5. URINARY TRACT:

- (i) Retention of urine is common and may result from decreased tone of the bladder in pregnancy and oedema of the urethra following delivery. Dysuria and difficulty in passing urine may lead to complete urinary retention, or retention with overflow incontinence. A full bladder will interfere with uterine contraction.
- (ii) A diuresis usually occurs on the second or third day of the puerperium. In oedematous patients it may start immediately after delivery.
- (iii) Stress incontinence (a leak of urine) is common when the patient laughs or coughs. It may first be noted in the puerperium or follow stress incontinence which was present during pregnancy. Often stress incontinence becomes worse initially but tends to improve with time and with pelvic floor exercises.

**** Pelvic floor exercises are also known as pinch or "knyp" exercises. The muscles that are exercised are those used to suddenly stop a stream of urine midway through micturition. These muscles should be tightened, as strongly as possible, 10 times in succession on at least 4 occasions a day.*

**** Normal bladder function is likely to be temporarily impaired when a patient has been given epidural analgesia. Complete retention of urine or retention with overflow may occur.*

6. BLOOD:

- (i) The haemoglobin concentration becomes stable around the 4th day of the puerperium.
- (ii) The platelet count is raised and the platelets become more sticky from the 4th to 10th day after delivery. These and other changes in the clotting (coagulation) factors may cause thromboembolism in the puerperium.

7. BREASTS:

Marked changes occur during the puerperium with the production of milk

Problems related to breast feeding are discussed in unit 19 of the Newborn Care manual of the Perinatal Education Programme.

8. GENITAL TRACT:

Very marked changes occur in the genital tract during the puerperium:

- (i) VULVA: The vulva is swollen and congested after delivery, but these features rapidly disappear. Tears and/or an episiotomy usually heal easily.
- (ii) VAGINA: Immediately after delivery the vagina is large, smooth walled, oedematous and congested. It rapidly shrinks in size and rugae return by the third week. The vaginal walls remain laxer than before and some degree of vaginal prolapse (cystocoele and/or rectocoele) is common after a vaginal delivery. Small vaginal tears, which are very common, usually heal in 7 to 10 days.

- (iii) **CERVIX:** After the first vaginal delivery the circular external os of the nullipara becomes slit like. For the first few days after delivery the cervix remains partially open, admitting 1 or 2 fingers. By the 7th day postpartum the cervical os will have closed.
- (iv) **UTERUS:** The most important change occurring in the uterus is involution. After delivery the uterus is about the size of a 20 week pregnancy. By the end of the first week it is about 12 weeks in size. At 14 days the fundus of the uterus should no longer be palpable above the symphysis pubis. After 6 weeks it has increased to the size of a normal multiparous uterus, which is slightly larger than a nulliparous one. This remarkable decrease in size is the result of contraction and retraction of the uterine muscle. The normally involuting uterus should be firm and non tender. The decidua of the uterus necroses (dies), due to ischaemia, and is shed as the lochia. The average duration of red lochia is 24 days. Thereafter, the lochia becomes straw coloured. Normal lochia has a typical, non-offensive smell. Offensive lochia is always abnormal.

MANAGEMENT OF THE PUERPERIUM

The management of the puerperium may be divided into 3 stages:

1. The management of the first hour after delivery of the placenta (sometimes called the fourth stage of labour).
2. The management of the rest of the puerperium.
3. The 6 week postnatal visit.

12-5 HOW SHOULD YOU MANAGE THE FIRST HOUR AFTER THE DELIVERY OF THE PLACENTA?

The 2 main objectives of managing the first hour of the puerperium are:

1. To ensure that the patient is, and remains, in a good condition.
2. The prevention of a postpartum haemorrhage (PPH).

To try and achieve these, you should:

1. Perform certain routine observations.
2. Care for the needs of the patient.
3. Get the patient's co-operation in ensuring that her uterus remains well contracted and that she reports any vaginal bleeding.

The correct management of the first hour of the puerperium is most important as the risk of postpartum haemorrhage is greatest at this time.

12-6 WHICH ROUTINE OBSERVATIONS SHOULD YOU PERFORM IN THE FIRST HOUR AFTER DELIVERY OF THE PLACENTA?

1. Immediately after the delivery of the placenta you should:
 - (i) Assess whether the uterus is well contracted.
 - (ii) Assess whether vaginal bleeding appears more than normal.
 - (iii) Record the patient's pulse rate, blood pressure and temperature.
2. During the first hour after the delivery of the placenta, provided that the above observations are normal, you should:
 - (i) Continuously assess whether the uterus is well contracted and that no excessive vaginal bleeding is present.
 - (ii) Repeat the measurement of the pulse rate and blood pressure after 1 hour.

If the patient's condition changes, observations must be done more frequently until the patient's condition returns to normal.

OBSERVATIONS DURING THE FIRST HOUR OF THE PUERPERIUM ARE EXTREMELY IMPORTANT**12-7 HOW SHOULD YOU CARE FOR THE NEEDS OF THE PATIENT DURING THE FIRST HOUR OF THE PUERPERIUM?**

After the placenta has been delivered the patient needs to be:

1. Washed.
2. Given something to drink and maybe to eat.
3. Allowed to bond with her infant.
4. Allowed to rest for as long as she needs to.

12-8 HOW CAN THE PATIENT HELP TO PREVENT POSTPARTUM HAEMORRHAGE DURING THE FIRST HOUR OF THE PUERPERIUM?

1. The patient should be shown how to observe:
 - (i) The height of the uterine fundus in relation to the umbilicus.
 - (ii) The feel of a well-contracted uterus.
 - (iii) The amount of vaginal bleeding.
2. She should be shown how to "rub up" the uterus.
3. She should be told that if the uterine fundus rises or the uterus relaxes or if vaginal bleeding increases, she must:
 - (i) Immediately call the midwife.
 - (ii) In the meantime rub up the uterus.

These 2 important steps may help prevent a postpartum haemorrhage.

THE PATIENT CAN PLAY A VERY IMPORTANT ROLE IN THE PREVENTION OF POSTPARTUM HAEMORRHAGE**12-9 WHEN SHOULD A POSTPARTUM PATIENT BE ALLOWED TO GO HOME?**

This will depend on:

1. Whether the patient had a normal pregnancy and delivery.
2. The circumstances of the hospital or clinic where the patient was delivered.

12-10 WHEN SHOULD A PATIENT BE ALLOWED TO GO HOME FOLLOWING A NORMAL PREGNANCY AND DELIVERY?

A patient who has had a normal pregnancy and delivery may be allowed to go home about 6 hours after the birth of her infant, provided:

1. The observations done on the mother and infant since delivery have been normal.
2. The mother and infant are normal on examination, and the infant is sucking well.
3. The patient is able to attend her nearest clinic on the day after delivery (day 1) and then again on days 3 and 5 after delivery for postnatal care, or be visited at home by a midwife on those days. Primigravidas should be seen again on day 7, especially to ensure that breast feeding is well established.

A patient should only be discharged home after delivery if no abnormalities are found when the following examinations are performed:

1. A general examination, paying particular attention to the:
 - (i) Pulse rate.
 - (ii) Blood pressure.
 - (iii) Temperature.
 - (iv) Haemoglobin concentration.
2. An abdominal examination, paying particular attention to the state of contraction and/or tenderness of the uterus.
3. An inspection of the episiotomy site and the amount, colour and odour of the lochia.

It is important to arrange for suitable contraception before the patient is discharged home.

Family planning is discussed in detail in unit 14 of this PEP manual.

12-11 WHEN SHOULD A PATIENT BE DISCHARGED FROM HOSPITAL FOLLOWING A COMPLICATED PREGNANCY AND DELIVERY?

This will depend on the nature of the complication and the method of delivery. For example:

1. A patient with pre-eclampsia should be kept in hospital until her blood pressure has returned to normal or is well controlled with oral drugs.
2. A patient who has had a caesarean section will usually stay in hospital for 5 days or longer.
3. A patient who has had a postpartum haemorrhage must be kept in hospital for at least 24 hours to ensure that her uterus is well contracted and that there is no further bleeding.

12-12 HOW WILL THE CIRCUMSTANCES AT A CLINIC OR HOSPITAL INFLUENCE THE TIME OF DISCHARGE?

1. Some clinics have no space to accommodate patients for longer than 6 hours after delivery. Therefore, patients who cannot be discharged safely at 6 hours will have to be transferred to a hospital.
2. Some hospitals manage patients who live in remote areas where follow up is not possible. These patients will have to be kept in hospital longer before discharge.
3. Patients who have received no antenatal care, and are unlikely to be traced following discharge, will have to be kept until the results of their special investigations are available, e.g. syphilis serology and Rhesus grouping.

12-13 WHAT POSTNATAL CARE SHOULD BE GIVEN DURING THE PUERPERIUM AFTER THE PATIENT HAS LEFT THE HOSPITAL OR CLINIC?

The following observations must be done on the MOTHER:

1. Assess the patient's general condition.
2. Observe the pulse rate, blood pressure and temperature.
3. Determine the height of the uterine fundus and assess whether any uterine tenderness is present.
4. Assess the amount, colour and odour of the lochia must be assessed.
5. Check whether the episiotomy is healing satisfactorily.
6. Ask if the patient passes urine normally and enquire about any urinary symptoms. Reassure the patient if she has not passed a stool by day 5.
7. Measure the haemoglobin concentration if the patient appears pale.
8. Assess the condition of the patient's breasts and nipples must be assessed. Determine whether successful breast feeding has been established.

The following observations must be done on the INFANT:

1. Assess whether the infant appears well and is thriving.
2. Check whether the infant is jaundiced.
3. Examine the umbilical stump for signs of infection.
4. Examine the eyes for conjunctivitis.
5. Ask whether the infant has passed urine and stool.
6. Assess whether the infant is feeding well and is satisfied after a feed.

THE SUCCESSFUL ESTABLISHMENT OF BREAST FEEDING IS ONE OF THE MOST IMPORTANT GOALS OF PATIENT CARE DURING THE PUERPERIUM

12-14 HOW CAN YOU HELP TO ESTABLISH SUCCESSFUL BREAST FEEDING?

By providing patient education and motivation. This should preferably start before pregnancy and continue throughout the antenatal period and after pregnancy. Encouragement and support are very important during the first weeks after delivery. The important role of breast feeding in lowering infant mortality in poor communities must be remembered.

Breast feeding is discussed in detail in unit 19 of the Newborn Care manual of the Perinatal Education Programme.

12-15 WHICH TOPICS SHOULD YOU INCLUDE UNDER PATIENT EDUCATION IN THE PUERPERIUM?

Patient education regarding herself, her infant and her family should not start during the puerperium, but should be part of any woman's general education, starting at school. Topics which should be emphasised in patient education in the puerperium include:

1. Personal and infant care.
2. Offensive lochia must be reported immediately.
3. The "puerperal blues".
4. Family planning.
5. Any special arrangements for the next pregnancy and delivery.
6. When to start coitus again. Usually coitus can be started 3 to 4 weeks postpartum when the episiotomy or tears have healed.

PATIENT EDUCATION IS AN IMPORTANT AND OFTEN NEGLECTED PART OF POSTNATAL CARE

12-16 WHEN SHOULD A PATIENT BE SEEN AGAIN AFTER POSTNATAL CARE HAS BEEN COMPLETED?

The postnatal visit is usually held 6 weeks after delivery. By this time almost all the organ changes which occurred during pregnancy should have disappeared.

THE SIX WEEK POSTNATAL VISIT

12-17 WHICH PATIENTS NEED TO ATTEND A 6 WEEK POSTNATAL CLINIC?

Patients with specific problems that need to be followed up 6 weeks postpartum, e.g. patients who were discharged with hypertension need to come back to have their blood pressure measured. Patients who are healthy may be referred directly to the mother and child health clinics.

12-18 WHAT ARE THE OBJECTIVES OF THE 6 WEEK POSTNATAL VISIT?

It is important to determine whether:

1. The patient is healthy and has returned to her normal activities.
2. The infant is well and growing normally.
3. Breastfeeding has been satisfactorily established.
4. Contraception has been arranged to the patient's satisfaction.
5. The patient has been referred to a maternal and child health clinic for further care.
6. The patient has any questions about herself, her infant or her family.

12-19 HOW SHOULD THE 6 WEEK POSTNATAL VISIT BE CONDUCTED?

1. The patient is asked how she and her infant have been since they were discharged from the hospital or clinic.
2. The patient is then examined. On examination pay particular attention to the blood pressure and breasts, and look for signs of anaemia. An abdominal examination is followed by a speculum examination to check whether the episiotomy, vulval or vaginal tears have healed. A cytology smear of the cervix should be taken if the patient is 30 years or older and has not previously had a normal cervical smear. A cervical smear should also be taken on any woman who has previously had an abnormal smear. A bimanual examination is then done to assess the size of the uterus. The haemoglobin is measured and the urine tested for glucose and protein.
3. Attention must be given to any specific reason why the patient is being followed up, e.g. arrangements for the management of patients who remain hypertensive after delivery.
4. The patient is given health education as set out in section 12-15. It should again be remembered to ask her whether she has any questions she would like to ask.

If the patient and her infant are both well, they are referred to their local maternal and child health clinic for further follow-up.

A PATIENT AND HER INFANT SHOULD ONLY BE DISCHARGED IF THEY ARE BOTH WELL AND HAVE BEEN REFERRED TO THE LOCAL MATERNAL AND CHILD HEALTH CLINIC, AND THE PATIENT HAS RECEIVED CONTRACEPTIVE COUNSELLING

PUERPERAL PYREXIA**12-20 WHEN IS PUERPERAL PYREXIA PRESENT?**

A patient has puerperal pyrexia if her oral temperature rises to 38°C or higher during the puerperium.

12-21 WHY IS PUERPERAL PYREXIA IMPORTANT?

Because it may be caused by serious complications of the puerperium. Breast feeding may be interfered with. The patient may become very ill or even die.

PUERPERAL PYREXIA MAY BE CAUSED BY A SERIOUS COMPLICATION OF THE PUERPERIUM

12-22 WHAT ARE THE CAUSES OF PUERPERAL PYREXIA?

1. Genital tract infection.
2. Urinary tract infection.
3. Mastitis or breast abscess.
4. Thrombophlebitis (superficial vein thrombosis).
5. Respiratory tract infection.
6. Other infections.

12-23 WHAT IS THE CAUSE OF GENITAL TRACT INFECTION?

Genital tract infection (or puerperal sepsis) is caused by bacterial infection of the raw placental site or lacerations of the cervix, vagina or perineum.

**** Genital tract infection is usually caused by the group A or group B Streptococcus, Staphylococcus aureus or anaerobic bacteria.*

12-24 HOW SHOULD YOU DIAGNOSE GENITAL TRACT INFECTION?

1. HISTORY:

If one or more of the following is present:

- (i) Preterm or prelabour rupture of the membranes, a long labour, operative delivery or incompleteness of the placenta or membranes may have occurred.
- (ii) The patient will feel generally unwell.
- (iii) Lower abdominal pain.

2. EXAMINATION:

- (i) Pyrexia, usually developing within the first 24 hours after delivery. Rigors may occur.
- (ii) Marked tachycardia.
- (iii) Lower abdominal tenderness.
- (iv) Offensive lochia.
- (v) The episiotomy wound or perineal or vaginal tears may be infected.

**** If possible, an endocervical swab should be taken for microscopy, culture and sensitivity tests.*

12-25 HOW SHOULD YOU MANAGE GENITAL TRACT INFECTION?

1. PREVENTION:

- (i) Strict asepsis during delivery.
- (ii) Reduction in the number of vaginal examinations during labour to a minimum.
- (iii) Prevention of unnecessary trauma during labour.
- (iv) Isolation of infected patients.

2. TREATMENT:

- (i) Admit the patient to hospital.
- (ii) Measures to bring down the temperature, e.g. tepid sponging.
- (iii) Analgesia, e.g. paracetamol (Panado) 1 g (2 adult tablets) orally 6 hourly.
- (iv) Adequate fluid intake with strict intake and output measurement.
- (v) Broad spectrum antibiotics, e.g. ampicillin and metronidazole (Flagyl). If the patient is to be referred, antibiotic treatment must be started before transfer.
- (vi) The haemoglobin concentration must be measured. If low, a blood transfusion must be given.
- (vii) Removal of all stitches if the wound is infected.
- (viii) Drainage of any abscess.
- (ix) If there is subinvolution of the uterus, an evacuation under general anaesthetic must be done.

**** Twenty four hours after starting this treatment the patient's condition should have improved considerably and the temperature should by then be normal. If this is not the case, evacuation of the uterus is required and gentamicin must be added to the antibiotics. A laparotomy and possibly a hysterectomy is indicated, if peritonitis and subinvolution of the uterus are present, and there is no response to the measures detailed above.*

**** A blood transfusion must be given if the haemoglobin concentration is below 8 g/dl.*

12-26 HOW MUST A PATIENT WITH OFFENSIVE LOCHIA BE MANAGED?

1. If the patient has a pyrexia she must be admitted to hospital and be treated as explained in section 12-25.
2. If the involution of the patient's uterus is slower than expected and the cervical os remains open, retained placental products are present. An evacuation of the uterus under general anaesthesia must be done. Further treatment is as explained in section 12-25.
3. If the patient has a normal temperature and normal involution of her uterus, she can be managed as an out patient with oral ampicillin and metronidazole (Flagyl).

OFFENSIVE LOCHIA IS AN IMPORTANT SIGN OF GENITAL TRACT INFECTION**12-27 HOW SHOULD YOU DIAGNOSE A URINARY TRACT INFECTION?**

1. HISTORY:
 - (i) The patient may have been catheterized during labour or in the puerperium.
 - (ii) Lower abdominal pain and/or pain in the lower back over one or both the kidneys (the loins).
 - (iii) Dysuria and frequency. However, these are not reliable symptoms of urinary tract infection.
2. EXAMINATION:
 - (i) Pyrexia, often with rigors (shivering).
 - (ii) Tachycardia.
 - (iii) Suprapubic tenderness and/or tenderness, especially to percussion, over the kidneys (punch tenderness in the renal angles).
3. SIDE ROOM AND SPECIAL INVESTIGATIONS:
 - (i) Microscopy of a midstream or catheter specimen of urine usually shows large numbers of pus cells and bacteria.
 - (ii) Culture and sensitivity tests of the urine must be done if the facilities are available.

**** The presence of pyrexia and punch tenderness in the renal angles indicate an upper renal tract infection and a diagnosis of acute pyelonephritis must be made.*

12-28 HOW SHOULD YOU MANAGE A PATIENT WITH A URINARY TRACT INFECTION?

1. PREVENTION:
 - (i) Avoid catheterization whenever possible. If catheterization is essential, it must be done with strict aseptic precautions.
2. TREATMENT:
 - (i) Admit the patient to hospital.
 - (ii) Measures to bring down the temperature.
 - (iii) Analgesia, e.g. paracetamol (Panado) 1 g orally 6 hourly.
 - (iv) Adequate fluid intake.
 - (v) Intravenous ampicillin 2 g immediately and then 1 g 6 hourly.

**** In hospitals where organisms are resistant to ampicillin, intravenous ampicillin and clavulanic acid (Augmentin) or cefuroxime (Zinacef) must be substituted.*

ANTIBIOTICS SHOULD NOT BE GIVEN TO A PATIENT WITH PUERPERAL PYREXIA UNTIL SHE HAS BEEN FULLY INVESTIGATED

12-29 WHAT IS SUPERFICIAL VEIN THROMBOPHLEBITIS?

This is a non-infective inflammation and thrombosis of the superficial veins of the leg or forearm where an infusion was given. Thrombophlebitis commonly occurs during the puerperium, especially in varicose veins.

12-30 HOW SHOULD YOU DIAGNOSE SUPERFICIAL LEG VEIN THROMBOPHLEBITIS?

1. HISTORY:

- (i) Painful swelling of the leg or forearm.
- (ii) Presence of varicose veins.

2. EXAMINATION:

- (i) Pyrexia.
- (ii) Tachycardia.
- (iii) Presence of a localised area of the leg or forearm which is swollen, red and tender.

12-31 HOW SHOULD YOU MANAGE A PATIENT WITH SUPERFICIAL VEIN THROMBOPHLEBITIS?

1. Give analgesia, e.g. aspirin 300 mg (1 adult tablet) 6 hourly.
2. Support the leg with an elastic bandage.
3. Encourage the patient to walk around.

**** There is no indication for anticoagulant therapy unless there is deep vein thrombosis.*

12-32 HOW SHOULD YOU DIAGNOSE A LOWER RESPIRATORY TRACT INFECTION?

A lower respiratory tract infection, such as acute bronchitis or pneumonia, is diagnosed as follows:

1. HISTORY:

- (i) The patient may have had general anaesthesia with endotracheal intubation, e.g. for a caesarean section.
- (ii) Cough, which may be productive.
- (iii) Pain in the chest.
- (iv) A recent upper respiratory tract infection.

2. EXAMINATION:

- (i) Pyrexia.
- (ii) Tachypnoea (breathing rapidly).
- (iii) Tachycardia.

3. SPECIAL INVESTIGATIONS:

- (i) A chest X-ray is useful in diagnosing pneumonia.

**** Examination of the chest may reveal basal dullness due to collapse, increased breath sounds or crepitations due to pneumonia, or bilateral rhonchi due to bronchitis.*

12-33 HOW SHOULD YOU MANAGE A PATIENT WITH A LOWER RESPIRATORY TRACT INFECTION.

1. PREVENTION:

- (i) Skilled anaesthesia.
- (ii) Proper care of the patient during induction and recovery from anaesthesia.
- (iii) Encourage deep breathing and coughing following a general anaesthetic to prevent lower lobe collapse.

2. TREATMENT:

- (i) Admit the patient to hospital unless the infection is very mild.
- (ii) Oxygen if required.
- (iii) Ampicillin orally or intravenously depending on the severity of the infection.
- (iv) Analgesia, e.g. paracetamol (Panado) 1 g 6 hourly.
- (v) Physiotherapy.

3. SPECIAL INVESTIGATIONS:

- (i) Send a sample of sputum for microscopy, culture and sensitivity testing if possible.

12-34 WHICH OTHER INFECTIONS MAY CAUSE PUERPERAL PYREXIA?

Tonsillitis, influenza and any other acute infection, e.g. acute appendicitis.

Mastitis and breast abscess are discussed in unit 19 of the Newborn Care manual of the Perinatal Education Programme.

12-35 WHAT SHOULD YOU DO IF A PATIENT PRESENTS WITH PUERPERAL PYREXIA?

1. Ask the patient what she thinks is wrong with her.
2. Specifically ask for symptoms which point to:
 - (i) An infection of the throat or ears.
 - (ii) Mastitis or breast abscess.
 - (iii) A chest infection.
 - (iv) A urinary tract infection.
 - (v) An infected abdominal wound if the patient had a caesarean section or a puerperal sterilization.
 - (vi) Genital tract infection.
 - (vii) Superficial leg vein thrombophlebitis.
3. Examine the patient systematically, including the:
 - (i) Throat and ears.
 - (ii) Breasts.
 - (iii) Chest.
 - (iv) Abdominal wound, if present.
 - (v) Urinary tract.
 - (vi) Genital tract.
 - (vii) Legs, especially the calves.
4. Perform the necessary special investigations, but always send of a:
 - (i) Endocervical swab.
 - (ii) Midstream or catheter specimen of urine.
5. Start the appropriate treatment.

IF A PATIENT PRESENTS WITH PUERPERAL PYREXIA THE CAUSE OF THE PYREXIA MUST BE FOUND AND APPROPRIATELY TREATED

PUERPERAL PSYCHIATRIC DISORDERS

12-36 WHICH ARE THE PUERPERAL PSYCHIATRIC DISORDERS?

1. The "puerperal blues".
2. Temporary postnatal depression.
3. Puerperal psychosis.

12-37 WHY IS IT IMPORTANT TO RECOGNIZE THE VARIOUS PUERPERAL PSYCHIATRIC DISORDERS?

1. The "puerperal blues" are very common in the first week after delivery, especially on day 3. The patient feels miserable and cries easily. Although the patient may be very distressed, all that is required is an explanation, reassurance, and a caring, sympathetic attitude and emotional support. The condition improves within a few days.
2. Postnatal depression is much commoner than is generally realized. It may last for months or even years and patients may need to be referred to a psychiatrist.

**** Patients with postnatal depression usually present with a depressed mood that cannot be relieved, a lack of interest in their surroundings, a poor or excessive appetite, sleeping difficulties, feelings of inadequacy, guilt and helplessness, and sometimes suicidal thoughts.*

3. Puerperal psychosis is an uncommon but very important condition. The onset is usually acute and an observant attendant will notice the sudden and marked change in the patient's behaviour. She may rapidly pose a threat to her infant, the staff and herself. Such a patient must be referred urgently to a psychiatrist and will usually need admission to a psychiatric unit.

**** Patients with puerperal psychosis are unable to care for themselves or their infants. They are often disorientated and paranoid and may have hallucinations. They may also be severely depressed or manic.*

SECONDARY POSTPARTUM HAEMORRHAGE

12-38 WHAT IS SECONDARY POSTPARTUM HAEMORRHAGE?

This is any amount of vaginal bleeding, other than the normal amount of lochia, occurring after the first 24 hours postpartum until the end of the puerperium. It commonly occurs between the fifth and fifteenth days after delivery.

12-39 WHY IS SECONDARY POSTPARTUM HAEMORRHAGE IMPORTANT?

1. A secondary postpartum haemorrhage may be so severe that it causes shock.
2. Unless the cause of the secondary postpartum haemorrhage is treated, the vaginal bleeding will continue.

12-40 WHAT ARE THE CAUSES OF SECONDARY POSTPARTUM HAEMORRHAGE?

1. Genital tract infection with or without retention of a piece of placenta or part of the membranes. This is the commonest cause.
2. Separation of an infected slough in a cervical or vaginal laceration.
3. Breakdown (dehiscence) of a caesarean section wound of the uterus.

However, the cause is unknown in up to half of these patients.

**** Gestational trophoblastic disease (hydatidiform mole or choriocarcinoma) and a disorder of blood coagulation may also cause secondary postpartum haemorrhage.*

12-41 WHAT CLINICAL FEATURES SHOULD ALERT YOU TO THE POSSIBILITY OF THE PATIENT DEVELOPING SECONDARY POSTPARTUM HAEMORRHAGE?

1. A history of incomplete delivery of the placenta and/or membranes.
2. Unexplained puerperal pyrexia.
3. Delayed involution of the uterus.
4. Offensive and/or persistently red lochia.

12-42 HOW SHOULD YOU MANAGE A PATIENT WITH SECONDARY POSTPARTUM HAEMORRHAGE?

1. PREVENTION:

- (i) Aseptic technique throughout labour, the delivery and the puerperium.
- (ii) Careful examination after delivery to determine whether the placenta and membranes are complete.
- (iii) Proper repair of vaginal and perineal lacerations.

2. TREATMENT:

- (i) Admission of the patient to hospital is indicated, except in very mild cases of secondary postpartum haemorrhage.
- (ii) Review of the clinical notes with regard to completeness of the placenta and membranes.
- (iii) Obtain an endocervical swab for bacteriology.
- (iv) Give ampicillin and metronidazole (Flagyl) orally.
- (v) Give Syntometrine 1 ml intramuscularly or 20 units oxytocin in an intravenous infusion.
- (vi) Blood transfusion, if the haemoglobin concentration drops below 8 g/dl.
- (vii) Removal of retained placental products under general anaesthesia.

12-43 WHAT MAY YOU FIND ON PHYSICAL EXAMINATION TO SUGGEST THAT RETAINED PIECES OF PLACENTA OR MEMBRANES ARE THE CAUSE OF A SECONDARY POSTPARTUM HAEMORRHAGE?

1. The uterus will be involuting slower than usual.
2. Even though the patient may be more than 7 days postpartum, the cervical os will have remained open.

SELF-MONITORING**12-44 WHAT IS MEANT BY THE CONCEPT OF "THE MOTHER AS A MONITOR"?**

This is a concept where the patient is made aware of the many ways in which she can monitor her own, as well as her fetus' or infant's wellbeing, during pregnancy, in labour and in the puerperium. This has two major advantages:

1. The patient becomes much more involved in her own perinatal care.
2. Possible complications will be reported by the patient at the earliest opportunity.

12-45 HOW CAN THE PATIENT ACT AS A MONITOR IN THE PUERPERIUM?

The patient must be encouraged to report the following complications as soon as she becomes aware of them:

1. MATERNAL COMPLICATIONS:

- (i) Symptoms of puerperal pyrexia.
- (ii) Breakdown of an episiotomy.
- (iii) Breastfeeding problems.
- (iv) Excessive or offensive lochia.
- (v) Recurrence of vaginal bleeding, i.e. secondary postpartum haemorrhage.
- (vi) Prolonged postnatal depression.

2. COMPLICATIONS IN THE INFANT:

- (i) Poor feeding or other feeding problems.
- (ii) Lethargy.
- (iii) Jaundice.
- (iv) Conjunctivitis.
- (v) Infection of the umbilical cord stump.

EACH PATIENT MUST BE TAUGHT TO MONITOR HER OWN WELLBEING, AS WELL AS THAT OF HER FETUS OR INFANT

CASE PROBLEMS**CASE 1**

Following a spontaneous vertex delivery in a clinic, you have delivered the placenta and membranes completely. The maternal and fetal conditions are good and there is no abnormal vaginal bleeding. You are the only staff member in the clinic. You are called away and will have to leave the patient alone for a while.

1. How can you get the patient's help in preventing a postpartum haemorrhage?

The patient should be shown how to observe:

- 1. The height of the uterine fundus.
- 2. Whether the uterus is well-contracted.
- 3. The amount of vaginal bleeding.

She should also be asked to empty her bladder frequently.

2. What should the patient do if she notices that her uterus relaxes and/or there is vaginal bleeding?

She should rub up the uterus and call you immediately.

3. What should you check on before leaving the patient?

You should make sure that:

- 1. The patient and her infant's observations are normal and both their conditions are stable.
- 2. The patient understands what she has to do.
- 3. You will be able to hear the patient, if she calls you.

CASE 2

A patient returns to a clinic for a visit 3 days after a normal first pregnancy and delivery. She complains of leaking urine when coughing or laughing, and she is also worried that she has not passed a stool since the delivery. She starts to cry and says that she should not have fallen pregnant. Her infant takes the breast well and sleeps well after each feed. On examination the patient appears well, her observations are normal, the uterus is the size of a 16 week pregnant uterus, and the lochia is red and not offensive.

1. Is her puerperium progressing normally?

Yes. The patient appears healthy with normal observations, and the involution of her uterus is satisfactory.

2. What should be done about the patient's complaints?

Stress incontinence is common during the puerperium. Therefore, the patient must be reassured that it will improve over time. However, pelvic floor exercises must be explained to her as they will hasten improvement of her incontinence. She need not be worried about not having passed a stool as this is normal during the first few days of the puerperium.

3. Why is the patient regretting her pregnancy and crying for no apparent reason?

She probably has the "puerperal blues" which are common in the puerperium. Listen sympathetically to the patient's complaints and reassure her that she is managing well as a mother. Also explain that her feelings are normal and are experienced by most mothers.

4. What educational topics must be discussed with the patient during this visit?

1. Family size and when she plans to have her next infant.
2. Which contraceptive method she should use and how to use it correctly.
3. The care and feeding of her infant, stressing the importance of breast feeding.
4. The time that coitus can be resumed.

Also ask about, and discuss, any other uncertainties which the patient may have.

CASE 3

Following a prolonged first stage of labour due to an occipito-posterior position, a patient has a spontaneous vertex delivery. The placenta and membranes are complete. There is no excessive postpartum blood loss and the patient is discharged home after 6 hours. Within 24 hours of delivery the patient is brought back to the clinic. She has a temperature of 39°C, a pulse rate of 110 beats per minute and complains of a headache and lower abdominal pain. The uterus is tender to palpation.

1. What does the patient present with?

Puerperal pyrexia.

2. What is the most likely cause of the puerperal pyrexia?

Genital tract infection, i.e. puerperal sepsis. This diagnosis is suggested by the general signs of infection and the uterine tenderness. The patient had a prolonged first stage of labour, which is usually accompanied by a greater than usual number of vaginal examinations and, therefore, predisposes to genital tract infection.

3. Was the early postnatal management of this patient correct?

No. The patient should not have been discharged home so early as she had a prolonged first stage of labour which places her at a higher risk of infection. She should have been observed for at least 24 hours.

4. How should you manage this patient further in the clinic?

She must be made comfortable. Paracetamol (Panado) 1 g orally may be given for the headache. If necessary she should be given a tepid sponging. An intravenous infusion should be started and she must then be referred to hospital. If at all possible the infant must accompany the patient to hospital. The need to start antibiotic treatment, e.g. intravenous ampicillin and oral metronidazole (Flagyl), before transfer must be discussed with the doctor.

CASE 4

A patient is seen at a clinic on day 5 days following a normal pregnancy, labour and delivery. She complains of rigors and lower abdominal pain. She has a temperature of 38,5⁰C, tenderness over both kidneys (loins) and tenderness to percussion over both renal angles. A diagnosis of puerperal pyrexia is made and the patient is given oral ampicillin. She is asked to come back to the clinic on day 7.

1. Are you satisfied with the diagnosis of puerperal pyrexia?

No. Puerperal pyrexia is a clinical sign and not a diagnosis. The cause of the pyrexia must be found by taking a history, doing a physical examination and, if indicated, completing special investigations.

2. What is the most likely cause of the patient's pyrexia?

An upper urinary tract infection as suggested by the pyrexia, rigors, lower abdominal pain and tenderness over the kidneys.

3. Do you agree with the management given to the patient?

No. A urinary tract infection that causes puerperal pyrexia is an indication for admitting the patient to hospital. Intravenous ampicillin must be given as this will lead to a rapid recovery and prevent serious complications.

4. Why is a puerperal patient at risk of a urinary tract infection and how may this be prevented?

Catheterization is often required and this increases the risk of a urinary tract infection. Catheterization must only be carried out when necessary and must always be done as an aseptic procedure.