

Antenatal Care (ANC)

ANC is the clinical assessment of mother and fetus during pregnancy, for the purpose of obtaining the best possible outcome for both the mother and the child.

Aims of antenatal care:

1. To prevent, detect and manage those factors that adversely affect the health of the mother and baby.
 2. To provide advice, reassurance, education and support for the woman and her family.
 3. To deal with the “minor ailments” of pregnancy.
 4. To provide general health screening.
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- ❖ The original model of ANC established in 1930s involved as 15 visits to a doctor or a midwife, this was not evidence based.
 - ❖ Newer models of ANC have questioned the need for so many visits and in problem free pregnancies without additional risk factors there is no evidence that fewer visit compromise outcomes.
 - ❖ The newest model of ANC aim to make the woman the focus. Woman should be treated with kindness and dignity at all times, and due respect given to personal, cultural and religious beliefs.

Services should be:

1. Readily accessible.
2. Continuity of care.
3. Have written information's.

Classification of antenatal care

1. Community based team of midwives and GPs.” booked under the midwife”.
2. Hospital consultant team” consultant care”.
3. Combination of both” shared care”.

Advice, reassurance and education:

- Pregnancy is a time of great uncertainty, that the woman need explanation and reassurance to help her cope with a wide variety of symptoms, including nausea, heart burn, constipation, shortness of breath, dizziness, swelling, backache, abdominal discomfort and headaches. These are called minor complaint of pregnancy.
- Information about smoking, alcohol consumption and the use of drug during pregnancy is important, etc.

Parentcraft is the term used to describe formal group education of issues relating to pregnancy, labor and delivery and care of the newborn.

Common issues requiring advice and education during pregnancy:

1. Food hygiene, dietary advice, vitamin supplementation.
2. The risks of smoking during pregnancy, smoking cessation, nicotine replacement therapy. Smoking is associated with a number of adverse outcome in pregnancy including risk of perinatal mortality, placental abruption, preterm delivery, PRRROM, placenta previa, LBW, however, evidence show that smoking may decrease the incidence of pre-eclapmpcia.
3. Alcohol consumption.
4. Use of medications.
5. Exercise and sexual intercourse. Continuing moderate exercise in pregnancy or regular sexual intercourse dose not appear to be associated with any adverse outcome. Physically demanding work, particularly those jobs with prolonged periods of standing, may be associated with poorer outcome such as preterm birth, hypertension and PE and SFG.
6. Mental health issues.
7. Foreign travel, DVT prophylaxis and correct use of seatbelt.
8. Maternity right and benefits.
9. Female genital mutilation and domestic violence.
10. Screening for fetal problems (downs syndrome, anomalies, hemoglobinopathies).
11. Screening for maternal conditions (diabetes, hypertension, UTI, anemia).
12. Management of prolonged pregnancy.
13. Place of birth and labor.
14. Pain relief in labor.
15. Breast feeding and vit. K prophylaxis.
16. Care of the new baby and newborn screening.

Accessing ANC: the “booking visit”

Is the initial contact with health care professional where detailed history, examination is taken and we perform a series of routine investigations (with the woman’s consent) so that the appropriate care can be given. If risk factors are identified the woman will be classified as high risk.

When a woman believes herself to be pregnant she is encouraged to make contact with her doctors.

Confirmation of pregnancy is the first issue. The symptoms of pregnancy (amenorrhea, nausea, urinary frequency, breast tenderness) combined with a urinary or serum pregnancy test is sufficient to confirm pregnancy.

All pregnant women should be offered a dating scan in the first or early second trimester ideally between 10 and 14 weeks, and the EDD predicted by this scan should be used in preference to the menstrual EDD.

BENEFITS OF A DATING SCAN

1. Accurate dating in woman with irregular menstrual cycles or poor recollection of LMP.
2. Reduced incidence of induction of labor for “prolonged pregnancy”.
3. Maximizing the potential for serum screening to detect fetal abnormalities.
4. Early detection of multiple pregnancies.
5. Detection of asymptomatic failed intrauterine pregnancies.

The booking history

- A detail history is of vital importance so that the care is to be made available.
- Past medical, obstetrics and gynecological histories are explored in depth, as these may have a major impact on pregnancy risk assessment, as well as family and social histories.
- Age and racial origin (old women at risk of chromosomal abnormalities).

The booking examination

- Thorough examination must be carried if there are symptoms or risk factors of concern.
- For most healthy woman, without complicating medical problems, the booking examination will include the following:
 1. Accurate measurement of blood pressure.
 2. Abdominal examination to record the size of the uterus.
 3. Recognition of any abdominal scars indicative of previous surgery.
 4. Measurement of height and weight to calculate BMI, women of low BMI are at risk of IUGR while obese women are at risk of gestational diabetes, pre-eclampsia, need for emergency CS etc.
 5. Urine dip testing for protein, glucose, leukocytes, nitrates and blood.

Booking investigations

1. Full blood count: to screen for anemia and thrombocytopenia, both of which may require further investigation. Normal Hb level in early pregnancy is 11g/dl dropping to 10.5 g/dl by 28 weeks gestation due to delusional anemia. Routine iron supplements are not recommended unless the Hb level falls below these values and tests suggest iron deficiency. A full blood count is normally repeated at 28 weeks gestation.
2. Blood group and red cell antibodies: to identify women with Rh –ve blood to be offered prophylactic anti-D administration. A typical red cell antibodies most commonly arise from previous blood transfusions and these may cause fetal and neonatal hemorrhage.
3. Urinalysis: A midstream urine sample should be sent early in pregnancy to detect asymptomatic bacteriuria, which is common in pregnancy.
4. Rubella: vertical transmission of rubella from a mother to her fetus carries a high risk of causing serious congenital abnormalities, especially in the first trimester. Woman who are found to be rubella non-immune should be strongly advised to avoid infectious contacts and should undergo rubella immunization after the current pregnancy. The theoretical risk of viral reactivation from the vaccine means it should not be given during pregnancy, and pregnancy should be avoided for 3 months following immunization.
5. Hepatitis B: The presence of the surface antigen Hbs Ag, or the “e” antigen, represents either a recent infection or carrier status. Vertical transmission to the fetus may occur, mostly during labour, and horizontal transmission to maternity staff or the newborn infant can follow contact with body fluids. All babies born to hepatitis B carrier should be actively vaccinated and those born to women who are highly infective should also receive passive immunization with hepatitis B immunoglobulin (HBIG).
6. Human immunodeficiency virus: In known HIV- positive mothers, the use of antiretroviral agents, elective CS and avoidance of breastfeeding may reduce the vertical transmission rate from approximately 30% to less than 1%.
7. Syphilis: Vertical transmission to the fetus may occur with serious consequences. This transmission can be prevented by treatment by antibiotic and screening in pregnancy can be justified.
8. Hemoglobin studies: All women should be offered screening for hemoglobinopathies. The thalassemias and sickle cell disease are carried in an autosomal recessive fashion and the partner of a carrier or fully affected mother, should also be offered carrier testing.
9. Other routine booking investigations: At present, the evidence not support routine screening for bacterial vaginosis, CMV, toxoplasmosis, hepatitis C or group B streptococcus colonization. Cervical smear and vaginal swabs are not routinely taken at booking visit. However, smears should be performed during pregnancy on woman with an abnormal cervix on examination or those who are overdue for a smear.

Screening for fetal abnormalities

This is a routine aspect of ANC, offered to all women in some form or another. Initial discussion of these screening tests usually occurs at the booking visit to establish the wishes of the couple. These tests are not mandatory, and many chose not to have them.

The tests are carried out between 11 and 22 weeks gestation and include:

1. Screening for Downs syndrome. A variety of methods exist include a nuchal translucency scan at 11- 14 weeks gestation, with or without biochemical tests, or biochemical blood tests in isolation at 15-20 weeks.
2. Screening for neural tube defects (e.g spina bifida, anencephaly) with maternal serum alpha-fetoprotein levels at 15-20 weeks gestation. This blood test has been mostly superseded by routine detailed structural scanning at 18-20 weeks gestation.
3. Screening for structural congenital abnormalities by US examination at 18 to 20+6 weeks gestation.

Screening for clinical conditions later in pregnancy

Gestational diabetes

- All women should be assessed at booking for risk factors for gestational diabetes. If risk factors are present, the woman should be offered a 2 hour 75g OGTT at 24 – 28 weeks gestation.
- A previous history of gestational diabetes should prompt glucose monitoring, or an OGTT, at 16- 18 weeks. If these tests are normal, the test should be repeated at 24 – 28 weeks.

Risk factors for screening for gestational diabetes

1. BMI above 30 kg/m².
2. Previous baby weighing 4.5 kg or above.
3. Previous gestational diabetes.
4. First degree relative with diabetes.
5. Family origin from high prevalence area (south asian, black caribbean and middle east).

Pre-eclampsia and preterm labour

- All women should be screened at every antenatal visit for PE by measurement of blood pressure and urinalysis for protein.
- An extra antenatal visit, above the minimum scheduled, will be indicated for woman with risk factors for PE elicited by the booking history and examination, or for woman who have a rise in blood pressure above certain limits, or those who develop proteinuria or symptoms suggestive of PE.
- Woman without a history of preterm labour should not be routinely offered screening for preterm labour, such as bacterial swabs, or cervical length scan.

Fetal growth and well- being

- Symphysis – fundal height measurement should be performed with a tape measure at every antenatal appointment from 25 weeks gestation and the values plotted on a centile chart.
- Routine growth scan are not recommended in the absence of specific risk factors.
- It is still common practice to listen to the fetal heart at each antenatal visit in the second and third trimester, either with a pinnard stethoscope or doppler ultrasound

Follow – up visits

Recommended schedule of antenatal visits (NICE clinical guideline)

- Initial contact --- information giving, including folic acid supplementation, food hygiene, lifestyle issues and screening tests offered.
- Booking by 10 weeks,
- Dating scan(10-14 weeks),
- 16 week ---screening for down syndrome, BP/ urine dip,
- 18- 20 w-----US for structural anomalies,
- 25w---- Information, BP/urine dip/symphysis fundal height(SFH),
- 28w---- information, BP/urine dip/SFH,anti-D prophylaxis for Rh –ve
- 31w----BP/urine dip/SFH, *At 34w---focus on labour and delivery, BP/ urine dip / SFH
- 36w---focus on breast feeding care of baby , post natal issues, palpation for fetal presentation, BP/ urine dip / SFH.
- 38w---focus on prolonged pregnancy, palpation for fetal presentation, BP/ urine dip / SFH.
- 40w--- focus on prolonged pregnancy, palpation for fetal presentation, BP/ urine dip / SFH.
- 41w---offer membrane sweeping and formal induction of labor, palpation for fetal presentation, BP/ urine dip / SFH.

Primiparous women are scheduled to have two more visit than multiparous women(omit 31w and 40w) mostly to maximize detection of PE at an early stage.

* Additional appointment may need to be scheduled if there are factors which are recognized to increase the risk of problems developing.

* Common problems detected in routine ANC are hypertensive disorders of pregnancy, anaemia, abnormalities of uterine size (small for date and large for date) and abnormal fetal presentations.

Organization of antenatal care:

- The antenatal record needs to document clearly the care of the woman has received and it serves as a legal document, a source of useful information for the woman and a mechanism. Communication between different healthcare professionals.
- Women should be allowed to carry their own notes.

High risk pregnancies such as:

1. Medical disease such as hypertension, renal disease, endocrine, autoimmune, epilepsyetc.
2. Age ≥ 40 or ≤ 18 years.
3. BMI ≥ 35 or < 18 .
4. Previous IUD.
5. 3 or more miscarriages.
6. Previous PE or eclampsia.
7. Previous preterm labour or mid trimester loss.
8. Previous neonatal or stillbirth.
9. Previous baby with congenital abnormality.
10. Previous SGA or LGA baby.
11. Family history of genetic diseases.