

REVIEW ARTICLE

REVIEW OF FOCUSED ANTENATAL CARE

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INTRODUCTION: Antenatal care is a comprehensive antepartum programme which involves a coordinated approach to medical care, continuous risk assessment, and psychological support that optimally begins before conception and extends throughout the postpartum period and interconceptional period.^[1]

One of major responsibility of obstetrician providing antenatal care is to identify high risk factors based on past history, examination and investigation results. The objective of antenatal care therefore is to assure that every wanted pregnancy results in the delivery of a healthy baby without impairing the mothers health.^[2] In a 1914 study by Williams antenatal care reduced fetal mortality by 40%.^[3]

AIMS AND OBJECTIVES:

AIMS:

- Early detection of high risk pregnancies and their management.
- Screening and prevention of maternal and fetal problems.
- To provide primary preventive health care.
- To educate mother about changes in pregnancy and labor.
- To prepare couple for childbirth.
- To motivate regarding family planning and immunization.

OBJECTIVE: To ensure a normal pregnancy with delivery of healthy baby from a healthy mother

PRINCIPLES OF ANTENATAL CARE:

- 1. Woman-friendly:** Woman's health, basic human rights and comfort are given priority. Woman's personal desires and preferences are respected.
- 2. Culturally appropriate:** Every culture has specific beliefs, taboos and practices surrounding pregnancy and childbirth. Cultural awareness, competency and openness are essential.
- 3. Individualized:** Care should be individualized based on current health, medical history, lifestyle, cultural beliefs.
- 4. Should include partner and or other family member:** Respect for the household decision making process, communication, participation and partnership in seeking and making decisions about care help to ensure a complete and safer reproductive health experience for the women, her newborn her family.
- 5. Part of the household to hospital continuum for care:** It provides linkage between the community and the formal health care system.

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6. Integrated: Focused antenatal care includes STI and HIV testing/counseling, malaria detection and prevention, micronutrient provision, birth planning, emergency planning and family planning counseling.

Adequate Antenatal care: If first visit takes place at or before 13 weeks, with nine or more subsequent visits it is adequate antenatal care.

Inadequate Antenatal care: If women start antenatal care at or after 28 weeks or if they have made less than five visits at or after 34 wks.

Intermediate Antenatal care: Anything in between adequate and inadequate antenatal care.

When to Report to Hospital at Term: Decreased perception of fetal movement, Pain abdomen, Leaking per vaginum, Bleeding per vaginum, Postdated, Fever.

Prenatal Surveillance: At each visit, steps are taken to determine the well-being of mother and fetus. Certain information is considered especially important—an example is assessment of gestational age and accurate measurement of blood pressure. Evaluation typically includes:

Fetal:

1. Assess fetal growth.
2. Heart rate(s).
3. Amount of amniotic fluid.
4. Presenting part and station (late in pregnancy).
5. Activity.

Maternal:

1. Blood pressure.
2. Weight gain.
3. Symptoms - including headache, altered vision, abdominal pain, nausea and vomiting, bleeding, vaginal fluid leakage, and dysuria.
4. Height in centimeters of uterine fundus from symphysis.
5. Vaginal examination late in pregnancy often provides valuable information to include:
 - a. Confirmation of the presenting part and its station.
 - b. Clinical estimation of pelvic capacity and its general configuration.
 - c. Consistency, effacement, and dilatation of the cervix.

INVESTIGATIONS:

1. Complete haemogram, urine microscopy, blood grouping and Rh typing, thyroid profile (Indicated only in high risk pregnancy) random blood sugar, HIV, HBsAG, VDRL.
2. Ultrasonography: for gestational age (biparietal diameter, femur length, abdominal circumference), liquor (amniotic fluid index) & fetal well-being (expected fetal weight & biophysical profile), at 1st, 2nd and 3rd trimester.

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3. Special investigations: Triple test, Quadraple test are required in high risk cases.
4. Genetic counseling and karyotyping: indicated in history of previous Downs syndrome, Edward Syndrome, Thalasseмииas.

COMMON CONCERNS OF ANTENATAL PERIOD:

1. **Nausea & Vomiting:** Due to elevating beta hcg levels. Do xylamine is safe in Pregnancy. Extreme nausea or vomiting that persists beyond 18wks suspect molar pregnancy, multiple gestation, thyroid disorder.
2. **Heartburn:** Due to relaxation of lower esophageal sphincter by progesterone. Patient should take small frequent meals and limit eating before bedtime.
3. **Urinary Symptoms:** Increased frequency, nocturia, and bladder irritation are common symptoms due to progesterone mediated smooth muscle relaxation and altered bladder function. And also due to pressure on bladder by enlarging uterus and fetal head entering pelvis and bladder congestion.
4. **Constipation:** Intestinal smooth muscle relaxation by progesterone causes bowel slowing. Managed by increased fluid intake and fiber rich foods.
5. **Varicose Veins:** Pressure by enlarged uterus on venous return of lower limbs and progesterone mediated vasodilatation leads to varicosities. This is benign and returns to normal after delivery.
6. **Leg Cramps:** Recurrent muscle spasms are due to decreased calcium levels. Local heat, massage are helpful.
7. **Backache and Pelvic Discomfort:** Due to relaxation of ligamentous structures.
8. **Vaccinations:** Live vaccines are contraindicated in pregnancy.

RISK APPROACH: The aim of risk approach is to predict problems before they arises that women designated as high risk can receive special attention and further care in hospital. It provides rationale for resource allocation.

In this scheme risk cards are used whereby each pregnant woman was formally assessed against a checklist of risk factors. A continuing plan of management using specialist and community services and based on locally agreed protocols was then organized. Some schemes allow use by illiterate traditional birth attendants.^[4]

Identification of high and low risk pregnancies begins at first antenatal visit. Determinants of obstetric risk factors include:

1. Maternal characteristics:

- Age <18y, age. 35y.
- Height of less than 152cm.
- Weight of <45kg or >100kg.
- Smoking >10/day.
- Alcohol >4 units/day.
- Substance abuse and lack of local support.

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2. LMP details:

- LMP uncertain ± 2 weeks.
- Pill stopped upto two periods before LMP.
- IUCD in situ/ on OCP after conception.
- Vaginal bleeding since LMP.

3. Past obstetric history:

- Parity ≥ 5 .
- Congenital abnormality.
- Perinatal death.
- IUGR or Macrosomy.
- Preterm labour.
- Antibodies or cervical suture in previous pregnancy.
- Hypertension/ eclampsia.

4. Past medical history:

- Surgery to female genital tract.
- Chronic disorders such as diabetes, cardiac, thromboembolism.

5. Family history:

- Fetal abnormality.
- Diabetes mellitus.
- Multiple Pregnancy.

6. Booking Examination:

- Blood Pressure $\geq 140/90$ mm Hg.
- Maternal Weight ≥ 85 kg or ≤ 45 kg.
- Maternal height ≤ 152 cm.
- Cardiac murmur/ Large or small uterus for dates.

Subsequent antenatal visit will detect anaemia, Poor maternal weight gain, reduced fetal movement. Vaginal bleeding or infection, proteinuria, glycosuria, raised blood sugar, abnormal uterine size, excessive or diminished liquor, mal presentation

The system should be flexible so that low risk mothers can be transferred to high risk groups. On the other hand if risk not confirmed they should be referred back to primary care.

The weakness of risk approach application of population data to individuals is fraught with difficulty. Studies on obstetric scoring have demonstrated a correlation between increasing risk and poor outcome.^{[5][6]} However 70% or more of adverse perinatal outcomes cannot be predicted by existing assessment methods. The predictive accuracy of risk scores can be improved by separate prediction for multiparous and primiparous women, separate prediction of specific poor perinatal outcome and inclusion of late antepartum and intrapartum risk factors in the scores.^[7] Another weakness is any women labeled as high risk may be under considerable stress.

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Clinical accuracy of risk scores depend on prevalence of condition in population and cut off point used. Cut off point should be chosen in line with financial constraints.^[8]

WHO defined a new model of ANC based on four goal oriented visit and is called focused antenatal care. This defines what is done in each visit. Focussed antenatal care means that providers focus on assessment and actions needed to make decisions and provide care for each woman's individual situation.

Antenatal care provides the pregnant women to receive broad range of health promotion and preventive health services like nutritional support and correction of anaemia, prevention and treatment of malaria, STIs mainly prevention of mother to child transmission of HIV/AIDS, tetanus toxoid immunization. It is the best time to counsel about the benefits of child spacing and family planning.

Skilled attendants and CHWs should counsel the women and their families regarding health education, encourage care-seeking behavior and access to antenatal care.

The goal of ANC package is to prevent and manage:

- a. Complications of pregnancy itself.
- b. Pre-existing conditions that worsen during pregnancy.
- c. Effects of unhealthy lifestyles.

First Visit (8-12 weeks): Confirm pregnancy and EDD, classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Advice and counsel.

Second visit (24-26 weeks): Assess maternal and fetal well-being. Exclude PIH and anemia. Give preventive measures.

Third visit (32 weeks): Assess maternal and fetal well-being. Exclude PIH, anemia, multiple pregnancies. Give preventive measures.

Fourth visit (36-38 weeks): Assess maternal and fetal well-being. Exclude PIH, anemia, multiple pregnancies, Mal presentation.

The frequency of visits can be increased when close monitoring is required to identify risk factors and further management.

Screening	First Visit	Second Visit	Third Visit	Fourth Visit
	BP	BP	BP	BP
	Hemoglobin	Hemoglobin	Hemoglobin	Hemoglobin
	Syphilis, HIV	Bacteriuria	Bacteriuria	Bacteriuria
	Blood Grouping & Rh typing			
	Proteinuria Bacteriuria			

Table 1

- Identification and surveillance of the pregnant woman and her expected child.
- Recognition and management of pregnancy-related complications, particularly pre-eclampsia.

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- Recognition and treatment of underlying or concurrent illness.
- Screening for conditions and diseases such as anaemia, STIs (particularly syphilis), HIV infection (so ARV can be initiated), mental health problems, and/or symptoms of stress or domestic violence.
- Preventive measures, including tetanus toxoid immunization, de-worming, iron and folic acid, intermittent preventive treatment of malaria in pregnancy (IPTp), insecticide treated bednets (ITN).

Advice and support to the woman and her family for developing healthy home behaviours and a birth and emergency preparedness plan to:

1. Increase awareness of maternal and newborn health needs and self-care during pregnancy and the postnatal period, including the need for social support during and after pregnancy
2. Promote healthy behaviours in the home, including healthy lifestyles and diet, safety and injury prevention, and support and care in the home, such as advice and adherence support for preventive interventions like iron supplementation, condom use, and use of ITN
3. Support care seeking behaviour, including recognition of danger signs for the woman and the newborn as well as transport and funding plans in case of emergencies
4. Help the pregnant woman and her partner prepare emotionally and physically for birth and care of their baby, particularly preparing for early and exclusive breast feeding and essential newborn care and considering the role of a supportive companion at birth.
5. Promote postnatal family planning/birth spacing.

Antenatal care is a vehicle for multiple interventions:

- A) Prevention of maternal and neonatal tetanus by two doses of tetanus toxoid vaccination. tetanus causes about 200,000 infant deaths every year and accounts for 8% of all neonatal deaths (UNICEF 2002).
- B) **Prevention and case management of Malaria:** Asymptomatic malaria infection causes anaemia in mother and low birth weight (LBW) and preterm birth leading to increases risk of infant mortality. Use of insecticide treated nets, intermittent preventive treatment and effective case management of malaria illness (WHO 2003).
- C) Prevention of maternal anemia and malnutrition: Anemia affects nearly half of all pregnant women in the world. It increases the risk of dying due to haemorrhage. It increases the risk of still birth, LBW, prematurity and neonatal death. Strategies for control of anemia in pregnancy include iron and folic acid supplementation, deworming of intestinal infections, malaria prevention, improved obstetric care, management of severe anemia.
- D) Prevention of Sexually Transmitted Infections (STIs) and Mother to child Transmission of HIV: All pregnant women should be tested for Syphilis in first visit and repeated again in childbirth because Syphilis causes Stillbirths and neonatal deaths.
 Mother to child transmission can be prevented by starting Anti retro viral therapy as soon as possible.
- E) Additional ANC interventions: Calcium supplementation.

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- F) Treatment of bacteriuria, antenatal steroids for preterm Labour, antibiotics for prolonged rupture of membranes when required.
- G) Presumptive treatment for hookworm: to prevent hookworm infection, a major cause of iron deficiency anaemia.
- H) Protection against vitamin A and iodine deficiency.
- I) Birth preparedness and complication readiness.

Make Plans for the Birth:

- Prepare the necessary items for birth.
- Identify a skilled attendant and arrange for presence at birth.
- Identify appropriate site for birth, and how to get there.
- Identify support people, including who will accompany the woman and who will take care of the family.
- Establish a financing plan/scheme.

EMERGENCY PLAN: Should include blood donors, designation of a person to make decisions on the woman's behalf and a person to take care of her family while she is away.

ROUTINE ADVICE:

A: Avoid alcohol to prevent fetal alcohol syndrome

B: Bowel should be emptied regularly as there is relaxation of smooth muscles due to progesterone,

- Bath-daily bath should be taken
- Breast-Breast problems(Retracted and cracked nipple)should be corrected in antenatal period

C: Coitus should be avoided in 1st and 3rd trimester

D: Drugs should be taken as prescribed by doctor.

- Diet –healthy food should be taken.
- Dental hygiene should be maintained.

E: Exercise regular walking is advised. Avoid lifting heavy weights and prolonged manual work.

R: Rest Eight hours rest at night and two hours in afternoon.

S: Smoking should be avoided as it causes IUGR.

T: Travel-should be avoided in first trimester to prevent abortions and third trimester to prevent preterm labour.

CONCLUSION: The goal of antenatal care is healthy mother and healthy baby; early diagnosis of high risk cases and thus minimizing maternal and perinatal mortality and morbidity.

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