

## ANTENATAL ASSESSMENT OF FETAL WELLBEING

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- About 3% of liveborn infants have a major birth defect
- About 70% of fetal death occur antenatally

### OBJECTIVE

To avoid fetal death

### AIMS OF ANTENATAL FETAL MONITORING

- To ensure satisfactory growth and wellbeing of the fetus throughout pregnancy.
- To screen out the high risk factors that affect the growth of the fetus.

### INDICATIONS FOR ANTEPARTUM FETAL MONITORING

- Pregnancy with obstetric complications
  - IUGR
  - Multiple pregnancy
  - Polyhydramnios
  - Oligohydramnios
  - Rhesus alloimmunisation

- Pregnancy with medical complications
  - Diabetes mellitus
  - Hypertension
  - Epilepsy
  - Renal or Cardiac disease
  - Infection (Tuberculosis)
- Others
  - Advanced maternal age (more than 35 yrs)
  - Previous still birth or recurrent abortion
  - Previous birth of a baby with structural or chromosomal abnormalities

### PROCEDURES OF ANTENATAL EXAMINATION

- At first visit
  - Haemoglobin estimation
  - Routine examination of urine
  - HIV, HbsAg, VDRL
  - ABO and Rh grouping
  - Random blood sugar
  - TORCH (recurrent abortion or stillbirth)

- At subsequent visits

- Maternal weight gain e.g. preeclampsia/IUGR
- Blood pressure
- Assessment of the size of the uterus and height of the fundus
- Clinical assessment of excess liquor
- Documentation of the girth of the abdomen in the last trimester

- Clinical

- Biochemical

- Biophysical

- Fetal movement count
- Cardiotocography
- Non stress test
- Fetal biophysical profile(BPP)
- Doppler ultrasound
- Vibroacoustic stimulation test
- Contraction stress test

### Fetal movement count

- Cardiff 'count 10' formula :10 movements in 12 hrs
- Daily fetal movement count(DFMC):3 or 4 movements in one hour duration

- Maternal perception of fetal movements may be reduced

- Fetal sleep
- Fetal anomalies
- Anterior placenta
- Hydramnios
- Obesity
- Drugs (narcotics)
- Chronic smoking
- Hypoxia

- Fetal cardiography(CTG):a normal tracing after 32 wks ,would show base line heart rate of 110-150 beats per mins with an amplitude of base line variability 5-25bpm. There should be no deceleration or there may be early deceleration of very short duration

- Non stress test (NST):In non stress test,a continuous electronic monitoring of the fetal heart rate along with recording of fetal movements is undertaken.

- Interpretation

- Reactive:When two or more accelerations of more than 15 beats per minute above the base line and longer than 15 seconds in duration are present in a 20 mins observation (perinatal death is about 5 per 1000)
- Non reactive:Absence of any fetal reactivity (perinatal death is about 40 per 1000)

### Biophysical profile scoring(Manning-1985)

- Observation for 30 mins. Normal score=2. Abnormal =0

parameters	Minimal normal criteria	Score
•Non stress test	Reactive pattern	2
•Fetal breathing movement	1 episode lasting >30 secs	2
•Gross body movement	3 discreet body/limb movements	2
•Fetal muscle tone	1 episode of extension with return of flexion	2
•Amniotic fluid	1 pocket measuring 2 cm in two perpendicular planes	2

BPP score	Interpretation	Management
8-10	No fetal asphyxia	Repeat testing at weekly interval
6	Chronic asphyxia	If >36 wks ---Deliver
4	Chronic asphyxia	If >36 wks deliver, if <32 wks repeat testing in 4-6 hrs
0-2	Certain asphyxia	Test for 120 mins –persistent score<4---Deliver regardless of gestational age

### Summary

- Birth defect may be chromosomal, genetic, multifactorial or teratogenic

Fetal surveillance

AFP, HcG, Ua3

USG ⇒ Congenital malformation

Cytogenetic

