

## **MINOR AILMENTS DURING PREGNANCY**

### **INTRODUCTION**

During pregnancy hormones including estrogen, progesterone and prolactin rise rapidly. It turns the womb into a suitable environment for the baby's growth. And at the same time, it could cause discomfort to the mother

### **DEFINITION**

The minor ailments of pregnant women that occur due to physiological alternations of hormones and other causative factors which can be managed without medical intervention.

### **NAUSEA AND VOMITING**

Nausea and vomiting specially in the morning are usually common in Primigravida. They usually appear following the first or second missed period and subside by the end of the first trimester.

### **BACKACHE**

It is a common problem in pregnancy. Physiological changes that contribute to backache are: weight gain, hyperlordosis, high heel shoes, muscular spasm, urinary infection and constipation.

### **CONSTIPATION**

Constipation is a quite common ailment during pregnancy. Atonicity of gut due to the effect of progesterone diminished physical and pressure of the gravid uterus on the pelvic done

-Intake of higher foods such as whole grain cereals and breads, brown rice, fresh fruit.

### **LEG CRAMP**

Leg cramps are common during pregnancy. It may be due to deficiency of diffusible calcium or elevation of serum phosphorus, weight gain during pregnancy.

-Avoid standing or sitting with legs crossed for long period of time

### **HEART BURN**

Heart burn is common in pregnancy due to relaxation of the esophagus sphincter. Many women experience heart burn for the first time during pregnancy.

-Avoid over eating and not to go to bed immediately after the meal.

-Liquid antacids and elevate the head is helpful in reducing the heart burn and acidity

### **VARICOSE VEIN**

Varicose vein in the legs and vulva or rectum may appear for the first time or aggravate during pregnancy usually in the later months. It is due to obstruction in the venous return by the pregnant uterus.

-Crepe bandage during movements, elevation of the limbs during rest and regular antenatal exercise for prevention of varicose vein.

### **HEMORRHOID**

Hemorrhoid may cause annoying complications like bleeding or may get prolapsed.

-regular use of laxative to keep the bowel soft, local application of hydrocortisone ointments and replacements of the piles if prolapsed.

### **VAGINAL DISCHARGE**

Vaginal secretion during pregnancy is normal. The discharge is usually clear and white and should not smell unpleasant.

-Assurance to the patient and advice for local cleanliness are all which are required.

- Presence of any infection should be treated with vaginal application of metronidazole or miconazole.



## UNIT –II (FEMALE PELVIS AND FOETAL SKULL)

### Bony pelvis is formed by

\*2 hip bones-formed by fusion of 3 bones –ilium, ischium and pubis

\*Sacrum- Formed by fusion of 5 sacral vertebrae

\*Coccyx-Formed by fusion of 4-5 coccygeal vertebrae

\*Pelvis girdle = hip bones+ sacrum

### FUNCTIONS OF BONY PELVIS

\*To protect pelvis viscera

\*To support the weight of the body – it transfer the weight of the upper body from the axial to the lower appendicular skeleton

\*Provides attachment for muscles

\*In females, it provide bony support for the birth canal

### HIP BONE

\*2 hip bones are joined at the pubic symphysis

\*hip bones articulate with the sacrum at the sacroiliac joints

\*Ilium, ischium and pubis fused at acetabulum

\*ILIUM    \*ISCHIUM    \* PUBIS

### CLASSIFICATION OF PELVIS

\*False pelvis

\*Part of abdominal cavity

## 2) True pelvis

\*Is the true pelvis cavity

\*Lies inferior to pelvic brim/pelvic inlet

### MEASUREMENTS OF PELVIC INLET

#### Four diameters of pelvic inlets

\*Anteroposterior (True conjugate)

\*Diagonal conjugate (Can be measured clinically)

\*Obstetric conjugate

\*Transverse diameter

#### DIAMETER OF PELVIC INLET

\*Anterior-posterior - From the sacral promontory to superior margin of pubic symphysis (11.5cm)

\*Diagonal conjugate – From sacral promontory to inferior margin of the pubic symphysis (12cm)

\*Obstetric conjugate – From sacral promontory to nearest point on posterior surface of pubic symphysis (10.5cm)

\*Transverse diameter – The widest distance across pelvic brim (13.5cm)

#### DIAMETER OF PELVIC OUTLET

\*Anterior -posterior diameter-From lower margin of pubic symphysis to sacrococcygeal joint (12.5cm)

\*Transverse diameter-11cm

## **WALL OF PELVIC CAVITY**

\*Anterior pelvic wall

\*Lateral pelvic wall

\*Posterior wall

\*Pelvic floor

## **TYPES OF PELVIS**

**Female pelvis shapes may be subdivided as follows**

\*Gynaecoid-most common type, suited for delivery

\*Android –the masculine type of pelvis

\*Platypelloid-the pelvis, short AP diameter& wide transverse diameter

\*Anthropoid –resembling that of anthropoid ape, AP diameter is greater than the transverse

## **FETAL SKULL**

**Skull is divided into 2 parts**

**NEUROCRANIUM:** Calvaria (skull cap)

Cranial base(basicranium)

**Viscerocranium (Facial skeleton)**

## **REGIONS OF FETAL SKULL**

\*Occiput =the area lying behind posterior fontanelle

\*Vertex -the area between anterior and posterior fontanelles and between parietal eminences

\*Bregma-area around anterior fontanelle

\*Sinciput-Area lying in front of anterior fontanelle .This is subdivided into 2 part – the brow and the face.

\*Brow – Area between anterior fontanelle and root of the nose

\*Face- area below the root of the nose

## **SUTURES**

Sutures are the fibrous joint between flat bones of calvaria. Sutures allow the bones to move during the birth process (moulding).

## **IMPORTANT SUTURES**

\*Sagittal suture

\*Coronal suture

\*Lambdoidal suture

\*frontal suture

\*Intermaxillary suture

\*Intermandibular suture

## **FONTANELLES**

Areas of fibrous tissue membrane separating the bones of the calvaria.

## **MAJOR FONTANELLES**

\*Anterior

\*Posterior

\*Anterolateral (Sphenoidal)

\*Posterolateral (mastoid)

Anterior fontanelle: Diamond shape, located at junction of the sagittal, coronal and frontal sutures. It closed (ossify) by 18 months of age.

Posterior fontanelle: Triangular shape, located at the junction of the lambdoid and sagittal sutures. It closed by 6 weeks.

### **CLINICAL USE OF FONTANELLE**

\*During vaginal examination (during birth)- to indicate in which directions the occiput is pointing

\*Degree of dehydration

\*Level of intracranial pressure

\*To obtain blood sample from underlying superior sagittal sinus

\*Progress of growth of the frontal and parietal bones.

### **BONES OF THE VAULT**

\*2 frontal bone

\*2 parietal bone

\*1 occipital bone

\*2 temporal bone



**DIAMETER OF FETAL SKULL: Anterior-posterior/longitudinal (6)**

**Transverse (4)**

**ANTERIOR POSTERIOR/ LONGITUDINAL**

\*Sub-occipitobregmatic (SOB)-9.5cm

\*Sub-occipitofrontal (SOF)-10cm

\*Occipitofrontal (OF)-11.5cm

\*Mentovertical (MV)-13.5cm

\*Sub-mentovertical (SMV)-11.5cm

\*Sub-mentobregmatic (SMB)-9.5cm

**TRANSVERSE DIAMETRE OF FETAL SKULL**

\*Biparietal diameter -9.5cm

\*Sub parietal diameter-9cm

\*Bi-temporal diameter-8.2cm

\*Bi-mastoid diameter-7.5cm

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### UNIT-III (FETAL GROWTH AND DEVELOPMENT)

The growth and development of the fetus is typically divided into three stages

\*Pre-embryonic stage: Fertilization to 2-3 weeks

\*Embryonic stages: 4-8 weeks gestation

\*Fetal stage: 9 weeks to birth

#### FERTILIZATION

Sperm and ova fuse carrying 23 pairs of chromosome each

\*If sperm carries X sex chromosome paired with the ovum X chromosome =female zygote

\*If sperm carries Y sex chromosome paired with the ovum X chromosome =male zygote

#### IMPLANTATION

\*Zygote move from fallopian tube to uterus.

\*It will undergo series of mitotic division resulting to a cleavage formation, 1 in every 22 hour, with the cleavage division happening 24 hours after fertilization.

\*Once it reaches the uterus, zygote is now composed of 32-50 ball of cell termed as MORULA.

\*Another 3-4 days, morula becomes a BLASTOCYST consisting of:

-An inner cell mass which will become the future embryo

-Trophoblast which will become the placenta and membranes.

\*At approx. 8-10 days after fertilization, blastocyst attaches to the endometrium:  
-sheds off last residues of corona radiata and zona pellucida.

### EMBRYONIC & FETAL STRUCTURES

**DECIDUA:** Uterus that has grown thick and vascular in 3 areas.

**DECIDUA BASALIS:** lies directly under the embryo (portion where the trophoblast establishes communication with maternal blood vessel).

**DECIDUA CAPSULARIS:** Portion that stretches or encapsulates the surface of trophoblast.

**DECIDUA VERA:** The remaining portion of the uterine lining.

### CHORIONIC VILLI

\*Miniature villi similar to probing fingers that appear on the 11<sup>th</sup> or 12<sup>th</sup> day.

\*They begin the formation of the placenta.

\*Consists of a central core of connective tissue and fetal capillaries.

CONSISTS OF 2 LAYERS OF TROPHOBLAST

-SYNCYTIOTROPHOBLAST (syncytial layer)-produce HCG, somatomammotrophin (human placental lactogen), estrogen and progesterone.

-CYTOTROPHOBLAST (middle or Langhans's layer)-Functions in early pregnancy to protect the growing embryo and fetus from infection.

## PLACENTA

\*15-20cm in diameter, 2-3 cm deep, 400-600g at full term.

\*Has 25-30 cotyledons (placental compartments that lie on the maternal side)

\*Has 2 sides: maternal-dirty and rough

Fetal-shiny and smooth

## FUNCTIONS

\*Serves to conduct oxygen and nutrient for the fetus.

\*Secretes endocrine hormones (syncytial cells)

HCG- 1<sup>st</sup> placental hormone: ensures corpus luteum continuously produce progesterone and estrogen.

-suppresses maternal immunological reaction so that placental tissue is not detected and rejected as a foreign substance.

-If fetus is male, stimulates the testes to begin producing testosterone.

-At 8 weeks, begins progesterone production, as a result, CL disintegrates and HCG production decreases.

**ESTROGEN (estriol)**- hormone of women . It contributes to mammary gland development of mother in preparation for lactation.

-stimulates uterine growth to accommodate growing fetus.

**PROGESTERONE:** 'hormone for mothers'. It is necessary to maintain endometrial lining of the uterus during pregnancy.

-reduces contractility of uterus during pregnancy preterm labor.

## **HUMAN PLACENTAL LACTOGEN** (human chorionic somatomammotrophin) .

It promotes milk production.

- promotes mammary gland (breast) growth in preparation for lactation.
- regulates maternal glucose, protein and fat levels so that adequate amount of these are always available to the fetus.

## **AMNIOTIC FLUID**

Amniotic fluid is the clear, yellowish fluid that surrounds and protects the fetus in the uterus.

### **AMNIOTIC FLUID FORMATION AND COMPOSITION:**

First & early second trimester:

Amount is 5-50ml & arises from: ultra-filtrate of maternal plasma through the vascularized uterine decidua (in early pregnancy).

\*Transudation of fetal plasma through the fetal skin & umbilical cord( up to 20 weeks 's gestation)

### **VOLUME AND COMPOSITION**

\*About 500ml enter and leave the amniotic sac each hour.

\*gradual increase up to 36 weeks to around 600-1000ml then decrease after that.

\*The normal range is wide but the approximate volumes are:

-500ml at 18 weeks.

-800ml at 34 weeks.

-600ml at term

### **AMNIOTIC FLUID FUNCTION**

\*Allow room for fetal growth, movement and development.

\*Ingestion into GIT-growth and maturation

\*Fetal pulmonary development (20 weeks)

\*Protects the fetus from trauma

\*Maintain the temperature

\*Contain the antibacterial activity.

\*Aids dilatation of the cervix during labour.



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## UNIT-IV (NORMAL PREGNANCY)

### INTRODUCTION

Signs and symptoms that are usually noted by the patient, which impel her to make an appointment with a physician for confirmation of pregnancy.

### DEFINITION OF PREGNANCY

It is the state of carrying a developing embryo or fetus within the female body from conception to birth. After the egg is fertilized by sperm and then implanted in the lining of the uterus. It develops into placenta and embryo or fetus.

### DURATION OF PREGNANCY

Usually from 37 weeks to 40 weeks or 280 days or 10 lunar months or 9 months and 7 days, calculated from the first day of last menstrual period.

It is divided into trimesters, each lasting three months

First trimester (First 12 weeks)

Second trimester (13-28 weeks)

Third trimester (29-40 weeks)

### FIRST TRIMESTER PRESUMPTIVE SIGNS OR SUBJECTIVE SYMPTOMS

#### \*AMENORRHOEA

Absence of menstruation in woman of reproductive age.

#### \*MORNING SICKNESS

It is present in about 50% cases, mostly during first pregnancy. Nausea and vomiting begins about 6 weeks after the last menstrual period and usually disappear by about 14 weeks.

### **\*FREQUENCY OF MICTURITION**

Resting of bulky uterus on the fundus of the bladder because of anteverted position of uterus.

It is present during 8-12 weeks of pregnancy and subsides after 12 weeks.

### **\*BREASTDISCOMFORT**

It is present during 6<sup>th</sup> week in the form of feeling of:

- Tenderness
- Tingling
- Fullness
- Increase of size
- Pigmentation of areola
- Pricking sensation

### **\*FATIGUE**

It is frequent in early pregnancy and subside around 12-14 weeks of pregnancy with bringing renew energy.

### **FIRST TRIMESTER PROBABLE SIGNS OR OBJECTIVESIGNS**

- Breast changes
- Cardio- vascular changes
- Respiratory changes
- Integumentary changes

-Musculo- skeletal changes

-Abdomen and uterinechanges



### **\*BREAST CHANGES**

- Breast changes are evident between 6-8 weeks.
- There is enlargement with vascular engorgement with delicate veins visible under the skin due to increase blood supply, making the veins more noticeable.
- Nipple and areola (primary) becomes more pigmented or darker
- Montgomery's tubercles are prominent.
- The thick yellowish secretion (colostrum) can be expressed as early as 12<sup>th</sup> weeks.

### **\*PELVIC CHANGES**

- Jacquemier's or Chadwick's sign
- Vaginal signs
- Cervical signs (goodell's sign)

### **\*UTERINE CHANGES**

**At size, shape and consistency, uterus enlarged to:**

- Size of hen's egg at 6<sup>th</sup> week.
- Size of cricket ball at 8<sup>th</sup> week.
- Size of fetal head at 12<sup>th</sup> week

Pyriform shape of non-pregnant uterus becomes globular by 12<sup>th</sup> week. There may be asymmetrical enlargement of uterus if there is lateral implantation

### **\*Hegar's sign**

It is softening and compressibility of the lower segment of the uterus felt on bimanual examination (Two fingers in anterior fornix and abdominal fingers behind the uterus). It can be demonstrated between 6-10 weeks.

### **\*Palmer's sign**

Regular rhythmic uterine contraction on bimanual examination at 4-8 weeks.

### **SECOND TRIMESTER SUBJECTIVE SYMPTOMS**

- \*Amenorrhea
- \*Enlargement of lower abdomen
- \*Decrease morning sickness
- \*Decrease urinary symptoms
- \*Quickness

### **SECOND TRIMESTER OBJECTIVE SYMPTOMS**

- \*Skin changes
- \*vaginal changes
- \*Abdominal changes: Skin –Linea nigra  
-Chloasma
- Striae gravidarum

-PALPATION: Fundal height

Shape & consistency of uterus

- Braxton hick's contraction
- Palpation of fetal parts
- Active fetal movements

## AUSCULTATION

- Fetal heart sound
- Uterine soufflé
- Fetal soufflé

### Fetal heart sound

FSH is the most conclusive clinical sign of pregnancy. It can be detected between 18-20 weeks by stethoscope. The fetal heart varies from 110-160 beats/min

## THIRD TRIMESTER SUBJECTIVE SYMPTOMS

- \*Amenorrhoea
- \*Progressive enlargement of abdomen
- \*Palpitation and dyspnea following exertion due to enlarged abdomen
- \***LIGHTENING:** At about 38 weeks, sense of relief of pressure symptoms obtained due to engagement of presenting part.
- \*Frequency of micturition reappears.
- \*Fetal movement is more pronounced.

## **OBJECTIVE SYMPTOMS**

\*Palpation of fetal parts

\*Palpation of fetal movements

\*Auscultation of fetal heart sound.

\*Uterine shape is changed from cylindrical to spherical by 36<sup>th</sup> weeks.

\*Fundal height

At 32<sup>th</sup> week- Junction of upper and middle third of ensiform cartilage.

At 36<sup>th</sup> week – Up to the level of ensiform cartilage.

At 40<sup>th</sup> week – Down to the 32<sup>th</sup> week due to engagement of presenting part.

## **DIAGNOSTIC TEST IN PREGNANCY**

\*Physical examination

\*Laboratory evaluation

\*Ultrasonography

In laboratory evaluation, urine HCG Detection is done. And blood test for HCG is also done e.g. Radioimmunoassay

## **PHYSIOLOGICAL CHANGES DURING PREGNANCY**

### **GENITAL CHANGES (UTERUS)**

\*Height and weight (hyperplasia): height increase from 7.5cm to 35cm. and weight increase from 50g to 1000g at term.

\*Lower uterine segment is formed from isthmus.

### **CERVIX**

Edema and congestion, becomes soft and mucus plug closing the cervix canal. Increase secretion from its gland.

### **VULVA**

Shows increased vascularity and varicosities

### **VAGINA**

Shows increased vascularity. Bluish discoloration of anterior wall of vaginal.

### **OVARY**

Shows increased vascularity and size and one ovary contains the corpus luteum.

### **PELVIC LIGAMENTS**

Relaxation of the ligaments and relaxation of the pelvic joint.

### **BREAST CHANGES**

\*Secondary areola appears

\*Montgomery tubercles

\*Secretion of milk

### **SKIN CHANGES**

Pigmentation due to increased melanocyte stimulating hormone. Linea nigra present and presence of chloasma gravidarum.

Presence of striae gravidarum – stretch mark on flank area of abdomen.

## **WEIGHT**

There is an increase weight of approximately 12.5 kg term.

## **SKELETAL CHANGES**

Increased lumbar lordosis. Relaxation of pelvic joint and ligaments due to progesterone and relaxin

## **URINARY CHANGES**

Increased in size, hydronephrosis and effective renal plasma flow is increased.

Dilatation of the ureters.

## **GASTRO-INTESTINAL CHANGES**

Increased salivation (ptyalism), taste is often altered very early in pregnancy.

Heartburn (reflux esophagitis) and emesis gravidarum, Decreased gastric acidity, which interfere with iron absorption.

## **CARDIO-VASCULAR CHANGES**

Fall in total peripheral resistance by 6 weeks gestation to 40% by mid gestation.

Total extracellular volumes increased by 16% by term

The heart rate raises synchronously by 10-15bpm from and stroke volume rises.

Cardiac output begins to rise by 35-40%

## **RESPIRATORY CHANGES**

Tidal volume rises by 30% in early pregnancy. Fall in expiratory reserve and residual volume

Elevation of the diaphragm in late pregnancy.

## **ENDOCRINAL CHANGES**

Anterior pituitary increase in size and activity. Activities of all the gland increase

## METABOLIC CHANGES

Pregnancy is hyperlipidaemic and glucosuric.

After mid-pregnancy , resistance of insulin develops which leads to hyperglycemia



## UNIT-V (ANTENATAL CARE)

Systemic supervision (Examination and advice) of a woman during pregnancy is called ANC.

### AIMS

- \*To screen the high risk cases
- \*To prevent or to detect and treat at the earliest any complication.
- \*To ensure continued risk assessment and to provide ongoing primary preventive health care.
- \*To educate the mother about the physiology of pregnancy and labour by demonstration.
- \*To discuss the couple about the place, time and mode of delivery. Provisionally and care of the newborn.
- \* To motivate the couple about the need of family planning and also appropriate advice to couple seeking medical termination of pregnancy.

### OBJECTIVES

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

ANTENATAL CARE COMPRISES OF –

- \*Registration of pregnancy
- \*History taking
- \*Antenatal examination (General and obstetrical)
- \*Laboratory investigations
- \*Health education



## THE FIRST VISIT

\*History taking

\*Examination

\*Investigation

### HISTORY TAKING

- Particulars of patient
- Chief complaints with duration
- Past history
- Obstetric history
- Menstrual history
- Family history
- Drug history
- History of immunization
- Socio-economic history
- Contraceptive history

### ANC VISIT

First 28 weeks-once a month

Up to 36 weeks-Twice a month

There after weekly till delivery

### MINIUM-4 ANC visit

1<sup>st</sup> visit-Around 16 weeks

2<sup>nd</sup> visit-Between 24 -28 weeks

3<sup>rd</sup> visit-At 32 weeks

4<sup>th</sup> visit-At 36 weeks

### PHYSICAL EXAMINATION

**Pallor**- Examine palpebral conjunctiva, nails, tongue, oral mucosa, palms.

**Pulse**-60-90/min

**R.R** – 18-20 breaths/min

Edema

B.P – Two consecutive reading – systolic >140mmhg and diastolic >90mmhg

- check urine for the presence of albumin

-Pre eclampsia- hypertension + Albumin

Regular weight monitoring at each visit – 11kg weight gain entire pregnancy

-Breast examination

### ABDOMINAL EXAMINATION

-Measurement of fundal height

-Fetal heart sound

-Fetal movements

-Fetal parts

-Multiple pregnancies

Fetal lie and presentation

### LAB INVESTIGATION

-Hb estimation

-Blood grouping & Rh typing

-Urine routine

-VDRL

-RBS

### **SECOND VISIT (24-28 WEEKS)**

-SFH measurement

-To detect multiple pregnancy

### **THIRD VISIT (32 WEEKS)**

Screen for-preeclampsia, multiple pregnancies, anemia, IUGR

### **FOURTH VISIT (36 WEEKS)**

-Identification of fetal

-Lie

-Presentation

-Position

-Birth plan

### **ANTENATAL ADVICE**

Entire pregnancy-300kcal/day (extra) and lactation-600kcal/day

### **DIET**

**Supplementary iron therapy is needed for all pregnant mothers from 20 weeks onwards. 30. Mg of ferrous/ day**

### **HYGIENE**

**Daily bath is recommended as it stimulate refreshing and relaxing.**

## **BOWEL CARE**

As there is increase chance of constipation, regular bowel movement may be facilitated by regulation of diet taking plenty of fluids, vegetable and milk.

## **BREAST CARE**

Wash the breast with clean tap water.

## **EXERCISE**

- Walk in moderation
- Avoid lifting heavy things
- Avoid long time standing
- Avoid sitting with crossed
- Legs as this may impede circulation

## **DRESSING**

## **REST AND SLEEP**

COITUS (Should be avoided in 1<sup>st</sup> trimester and last 6 weeks)

## **WARNING SIGN**

Headache

Blurring of vision

Convulsion

Vaginal bleeding

Fever

## UNIT-VI (NORMAL LABOUR)

### DEFINITION

Series of events that takes place in the genital organ in an effort to expel the viable products of conception out of the womb through the vagina into the outer world is called labour.

-It may occur prior to 37 completed weeks, when it is called preterm labour.

### NORMAL LABOUR (EUTOCIA)

Labour is called normal if it fulfills the following criteria:

- Spontaneous in onset and at term
- With vertex presentation
- Without undue prolongation
- Natural termination with minimal aids
- Without having any complications affecting the health of mother

### ABNORMAL LABOUR (DYSTOCIA)

Any deviation from the definition of normal labour is called abnormal labour.

### CAUSES OF ONSET OF LABOUR

Uterine distension

Feto-placental contribution

-Estrogen

-Progesterone

-Prostaglandins

**-Oxytocin**

**-Neurological**

### **FALSE LABOUR PAIN FEATURES**

- Dull in nature and usually confined to the lower abdomen and groin
- Continuous and unrelated with hardening of the uterus
- Without any effect on dilatation of the cervix
- Usually relieved by medication

### **TRUE LABOUR PAIN FEATURES**

- Painful uterine contractions at regular interval
- Contraction with increasing intensity and duration
- Show
- Progressive effacement and dilatation of the cervix
- Progressive effacement and dilatation of the cervix
- Formation of the “bag of membrane”

### **STAGES OF LABOUR**

This starts from the onset of true labour pain and ends with full dilatation of cervix. It is in other words, the “cervical stage” of labour.

-Its average duration is 12 hours in primigravida and 6 hours in multigravida.

-There are two phases of first stage of labour

\*Latent phase

\*Active phase

### PHASES OF FIRST STAGE OF LABOUR

\***Latent phase:** It is the time between the onset of labour and 3-4 cm dilatation and cervix becomes fully effaced. It usually lasts between 3 and 8 hours, being shorter in multiparous women.

\***Active phase:** It is the time between the end of latent phase (3-4cm dilatation) and full dilatation (10cm). It is also variable in length, usually lasting between 2-6 hours.

### DURING ACTIVE PHASE

Cervical dilatation during active phase usually occurs at one cm per hour.

### SECOND STAGE OF LABOUR

It starts from full dilatation of the cervix and ends with expulsion of fetus from birth canal.

It has got two phases.

### Propulsive Phase:

Starts from full dilatation up to the descent of the presenting part to the pelvic floor.

### Expulsive Phase:

It's distinguished by maternal bearing down efforts and ends with delivery of baby. Average duration is two hours in primigravida and one hour in multi par.

### Third Stage of Labour:

The third stage begins after the expulsion of fetus and ends with expulsion of placenta and membranes. It involves the control of bleeding.

A third stage lasting more than 30 minutes should be considered abnormal.

#### **Fourth Stage of Labor:**

The fourth stage begins with the delivery of the placenta and ends two hours later.

#### **PHYSIOLOGY OF FIRST STAGE OF LABOR**

##### **Fundal Dominance**

Each uterine contraction starts in the fundus near one of the side and spreads across and downwards.

##### **Polarity**

Polarity is the term used to describe the neuro muscular harmony that prevails between the two poles or segments of the uterus throughout the labour.

##### **Formation of Upper & Lower Uterine Segment**

The upper uterine segment having been formed from the body of the fundus is mainly concerned with contraction and retraction. It is thick and muscular. The lower uterine segment formed of the isthmus and the cervix and is about 8-10 cm in length. The lower uterine segment is prepared for distension and dilatation.

##### **The Retraction Ring**

The ridge forms between the upper & lower uterine segment, this is known as retraction ring.

The physiological ring gradually rises as the upper uterine segment contracts and retracts and lower uterine segment thins out to accommodate the descending fetus. Once the cervix is fully dilated and the fetus can leave the uterus, the retraction ring rises no further.



## **CERVICAL EFFACEMENT**

Effacement refers to the inclusion of the cervical canal into the lower uterine segment.

It takes place from above downward; that is the muscle fibers surrounding the internal os are drawn upwards by the retracted upper segment and the cervix merges into the lower uterine segment.

## **CERVICAL DILATATION**

Dilatation of cervix is the process of enlargement of the os uteri from a tightly closed aperture to an opening large enough to permit the passage of the fetal head. Dilatation is measured in centimeters and full dilatation at term equates to about 10cm.

## **SHOW**

As a result of the dilatation of the cervix, the operculum, which formed the cervical plug during pregnancy, is lost. The women may see a blood stained mucoid discharge a few hours before, or within a few hours after, labour starts.

-The blood comes from the ruptured capillaries in the parietal decidua where the chorion has become detached from the dilating cervix.

## **FORMATION OF FORE WATER**

As the lower uterine segment forms and stretches, the chorion becomes detached from it and the increased intrauterine pressure causes its loosened part of the sac of fluid to bulge downwards into the os, to depth of 6-12mm

## **RUPTURE OF MEMBRANE**

The optimal physiological time for the membrane to rupture spontaneously is at the end of the first stage of labour after the cervix becomes fully dilated and no longer supports the bag of fore water

## **FETAL AXIS PRESSURE.**

During each contraction the uterus rises forward and the force of the fundal contraction is transmitted to the upper pole of the fetus down the long axis of the fetus and applied by the presenting part to the cervix. This is known as fetal axis pressure

## **PRESUMPTIVE SIGNS OF SECOND STAGE OF LABOUR**

- \*Expulsive uterine contraction
- \*Rupture of forewater
- \*Dilatation and gaping of the anus
- \*show
- \*Appearance of presenting part

## **MECHANISMS OF LABOUR**

Six considerations for normal labour

- The lie is longitudinal
- The presentation is cephalic
- The position is right or left occipitoanterior
- The attitude is one of the good flexion
- The denominator is the occiput
- The presenting part is the posterior part of the anterior parietal bone.

## **CARDINAL MOVEMENT**

- Engagement
- Descent

-Flexion

-Internal rotation of the head

-Extension of the head

-External rotation/Restitution

-Internal rotation of the shoulders

-Lateral flexion

### **PHYSIOLOGY OF THIRD STAGE OF LABOUR**

#### **Mechanical factors**

As the neonate is born, the uterus spontaneously contracts around its diminishing contents

The uterine fundus now lies just below the level of the umbilicus.

Retraction of the oblique uterine muscle fibers exerts pressure on the blood vessels so that blood does not drain back into the maternal system

**Two methods of separation of placenta-Schultz method and Matthews's Duncan method**

#### **HOMEOSTASIS**

Retraction of the oblique uterine muscle fibers in the upper uterine segment through which the tortuous blood vessels.

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