HUMAN REPRODUCTIVE SYSTEM
PARTURITION AND LACTATION

FORMATION FUNCTIONS OF PLACENTA AND LACTATION

PARTURITION

- The average duration of human pregnancy is about 9 months which is called the **gestation period.**

  Neagle's formula (E.D.D.) = first day of last menstrual cycle + 9 month and 7 days.

- Vigorous contraction of the uterus at the end of pregnancy causes expulsion/delivery of the foetus.
- This process of delivery of the foetus (child birth) is called **parturition.**
- Parturition is induced by a complex neuroendocrine mechanism. It involve signals from stretch receptors in myometrium of uterus by fully developed placenta and foetus, increased chorionic corticotropin and increase in estrogen : progesterone ratio.

FOETAL EJECTION REFLEX

- The signals for parturition originate from the fully developed foetus and the placenta which induced mild uterine contractions called **foetal ejection reflex.** This triggers **release of oxytocin from the maternal pituitary**.
- Oxytocin acts on the uterine myometrium muscle and causes stronger uterine contractions, which in turn stimulates further secretion of oxytocin. The stimulatory reflex between the uterine contraction and oxytocin secretion continues resulting in stronger and stronger contractions.
- This leads to expulsion of the baby out of the uterus through the birth canal–parturition. Soon after the infant is delivered, the placenta is also expelled out of the uterus.
- Just after birth infant's lungs expand and it begins breathing. This requires a major switchover in the circulatory system. Blood flow through the umbilical cord, ductus

arteriosus and foramen ovale ceases; the adult pattern of blood flow through the heart, aorta and pulmonary arteries begins. In some infants, the switchover is incomplete, and blood flow through the pulmonary arteries is inadequate. Failure to synthesize enough nitric oxide (NO) is one cause.

- Along with the drip, doctors inject oxytocin (or Pitocin) to increase uterine contractions. Oxytocin is also administered just after parturition to contract smooth muscles and prevent excessive bleeding which occur after parturition.

LACTATION

- The mammary glands of the female undergo differentiation during pregnancy an starts producing milk towards the end of pregnancy by the process called lactation. This helps the mother in feeding the newborn.
- Functional maturation of mammary gland occur by human placental lactogen and prolactin secreted during pregnancy period, yet lactation can't occur as level of progesterone is high.
- Prolactin is antagonist to FSH and LH so for initial six months following lactation, menstrual cycle doesn't occur.
- The milk produced during the initial few days of lactation is called **colostrum** which contains several antibodies (IgA) absolutely essential to develop resistance for the new-born babies.
- Breast-feeding during the initial period (at least 6 months) as infant grows is recommended by doctors for bringing up a healthy baby.