PRETERM LABOUR

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Objectives:-

1- Definition

2- Incidence

3- Classification

4- Etiology

5- Clinical features of preterm labour

6- Management of high –risk asymptomatic women

7- Management of symptomatic women

Definition

In pregnancy, term refers to the gestational period from 37+0 to 41+6 weeks. Preterm births occur between 24+0 and 36 +6 weeks.

Births earlier than this are referred to as miscarriages; occasional survivors are seen after delivery at 23 weeks, which has become the "grey zone" for viability.

Early births occur either (spontaneous deliveries) or (induced deliveries in 25% of preterm birth).

Incidence

The incidence in the developed world is 7 -12 %. The rate of preterm birth prior to 32 weeks has remained relatively stable at 1 -2 %.

30% of preterm birth is associated with preterm pre-labour rupture of membranes.

Classification:-

1- Mildly preterm births at 32+0 to 36 +6 weeks (incidence 6.1 %).

2- Very preterm births at 28+0 to 31+6 weeks (incidence o.9 %).

3- Extremely preterm births at 24+0 to 27+6 weeks (incidence 0.4 %).

Etiology:-

1- Infection

Subclinical intrauterine infection of the choriodecidual space and amniotic fluid by ascending bacterial infection lead to increase prostaglandin release and trigger contractions or lead to rupture membranes.

2- Over-distension

The commonest cause of uterine over distension is multiple gestations, polyhydramnios.

3- Vascular

Ante partum hemorrhage like placental abruption.

4- Abnormal uterine cavity

Congenital malformation may be less able to accommodate the developing pregnancy, uterine fibroids.

5- Cervical weakness (incompetence)

Congenital or pervious surgical defect leads to cervical shorten and open prematurely.

6- Intercurrent illness:-

Serious maternal infective illnesses such as pyelonephritis, appendicitis and pneumonia. In these conditions preterm labour is presumed to be due either to direct blood-borne spread of infection to the uterine cavity or indirectly to chemical triggers, such as end toxins or cytokines.

7- Idiopathic :-

Risk factors for preterm labour:-

- Maternal weight (both underweight women < 20 BMI and overweight are at risk)
- Maternal age: mother with age < 16 and more than 40.
- Parity: primgravidae and women with parity more than 5.
- Poor socioeconomic status.
- Smoking.
- Women with previous history of preterm delivery increases the risk fourfold.

Clinical features:-

History

Uterine contractions (intensity and frequency)
Vaginal discharge or bleeding
Pelvic pressure and or backache are some times reported

EXAMINATION:-

General : assess overall health, maternal pulse, blood pressure and temperature**.**

Abdominal:

May reveal the presence of uterine contraction, tenderness which suggests abruption or chorioamnionitis**.**

Pelvic: A careful speculum examination may yield valuable information; pooling of amniotic fluid, blood and/ or abnormal discharges may be observed. Digital exams should be limited, as they are known to stimulate prostaglandin production and may introduce organisms into the cervical canal.

Investigations:

Fetal fibronectin is a glue like protein binding the choriodecidual membranes. It is rarely present in vaginal secretions between 23 – 34 weeks and possible detection in the cervicovaginal secretions in patient with symptomatic labour.

Cervical length : Transvaginal ultrasound measurement , normal cervix measures 35mm in length and serial U/S measurement is needed started at 18 -22 wks.

Management of high –risk asymptomatic women:

1- Early dating scan which ensures the assessment of gestational age.

2- Treatment of urinary tract infection, asymptomatic bacteriuria.

3- Screening and treatment of antenatal bacterial vaginosis .

4- Detection of fetal fibronectin test at age of 24 weeks increase the risk of preterm labour to the half.

5- Progesterone therapy has been recognized in support of the pregnancy.

6- Lifestyle modification.

7- Elective cervical cerclage may be advised in women with previous history of preterm labour.

Management of symptomatic women

1- Communication and support: This include communication with the mother and her family ensures that they are fully understanding of the risk and management plan , communication with the neonatal unit staff ensures adequate resources are available include neonatal care unit.

2- Maternal steroid : Single course of maternal steroids (two injection 8 mg/12hs apart) given between 28- 34 wks of gestation and received within 7 days of delivery result in markedly improved neonatal outcomes by reduction of (RDS).

3- tocolytics: Suppression of uterine contractions by tocolytics is delaying of preterm labour allows time for steroid administration and in utero transfer that improve outcome.

Types of tocolytics:-

- **Sympathomimetics**

With introduction of beta- sympathomimetics into obstetrics practice in the 1970s associated with great efficacy in inhibiting preterm contractions. More modern studies have shown that ritordine will delay preterm delivery in minority of patients for 24-48hs , beside are associated with significant life –threatening maternal side effects (particularly if given in combination with corticosteroids) that include fluid overload, pulmonary oedema , myocardial ischaemia, hyperglycaemia and hypocalaemia.

- **Non – steroidal anti- inflammatory drugs**

The NSAIDS most widely studied as an acute tocolytic is indometacin , at present there is no evidence that any type of NSAIDS has any advantage as a first –line tocolytic beside it has high major effect on effect on fetal renal function ,fetal cardiovascular system in particularly on ductus arteriosus.

- **Magnesium sulphate**

Beside its use for management of per-eclampsia can be used in preterm labour with equal efficacy findings with sympathomimetics.

Oxytocin antagonists

Atosiban which is oxytocin antagonists was no better than placebo in prevention of preterm delivery.

Calicum channel blockers

The central role of calcium in the biochemistry of myometrial contractions led to the exploration of the use of ca channel blockers specifically nifedipine as a tocolytic drugs.

Antibiotics :

Meta analysis of the use of antibiotics in symptomatic preterm labour show that do not delay delivery or improve any aspect of neonatal morbidity or mortality. Its benefit is reduction of maternal infection if associated with rupture membrane.

Neonatal outcome after preterm delivery

1- Respiratory distress syndrome : Introduction of surfactant therapy improved the neonatal respiration.

2- Hypocalcaemia

3- Hypoglycemia

4- Hypomagnesaemia

5- Hypothermia

6- Failure of thrive

Conduct of preterm delivery

Rates of neonatal morbidity and mortality are higher in babies transferred ex utero to neonatal intensive care units compared with those born in a tertiary referral centre.

1- Every effort should therefore be made to transfer a woman to an obstetric unit linked to a neonatal intensive care unit prior to a preterm delivery.

2- Continuous electronic fetal heart rate monitoring once preterm labour is clearly established.

3- Cesarean section indicated in breech presentation.

4- availability of pediatrician and expert midwife and obstetrician at time of labour.