SUMMARY AND RECOMMENDATIONS

Premature rupture of fetal membranes (PROM) is an unpredicatable event, which constitutes one of the most important dilemmas in obstetric practice and it is defined as the rupture of the amniotic membranes with release of the amniotic fluid more than 1 hour prior to the onset of labour. PROM may be subdivided into term PROM (TPROM, i.e., PROM after 37 weeks of gestation) and preterm PROM (PPROM, i.e., PROM prior to 37 weeks of gestation) .

Premature rupture of membranes can result from a wide array of mechanisms acting individually or jointly

The etiology of PROM is still unclear ,and there is no single cause of PROM for all practical purposes ,but the main exogenous factor is infection with consequent host inflammatory response, reduction in membrane strength by the effect of bacterial proteases and other factors that may facilitate ascending of infection such as cervical incompetence and repeated pelvic examinations. Group B streptococci are one of the most important organisms isolated in cases of PROM.

The diagnosis of PROM can be easily made if the pregnant women give a history of watery vaginal discharge of sudden onset or small intermittent vaginal leak, clinical examination using single sterile speculum examination will reveal AF in the vaginal vault and can be helped by gentle fundal pressure.

Although several diagnostic tests for the detection of PROM have been recommended, non is completely reliable. Laboratory tests include Nitrazine test, Fern test, and the evaporation test can be used.

Vaginal fluid HCG can confirm the diagnosis, detection of fetal fibronectin in cervicovaginal secretion prior to membrane rupture may be a marker of impending preterm labour. AFP test has a sensitivity of 98% and specificity of 100% in diagnosis of PROM.

U/S examination should not be used as a primary means of diagnosis of PROM . Injection of flourescein into the amniotic cavity is rarely indicated for the diagnosis of PROM.

The major maternal complications associated with PROM are the development of chorioamnionitis,postpartum endometritis, abruption placentae ,preterm labour and increased cesarean section rate.

The major fetal complications are prematurity with all its hazards, respiratory distress , pulmonary hypoplasia , congenital abnormalities, and respiratory distress syndrome.

The management of patients with PROM remains controversial. Immediate delivery carries the risks of prematurity and its complications, whereas conservative management puts the mother and fetus at risk of sepsis, so such patients must be observed and managed at a tertiary care hospital with adequate neonatal intensive care unit facilities.

Management of PROM depends after confirmation of the rupture upon the gestational age, some cases require immediate delivery such as

patients in labour , patients with mature fetal lungs, patients with fetal distress, patients with overt infection or with subclinical amnionitis and patients at high risk of infection.

Multiple options are available for management of at term PROM in absence of fetal distress, overt intrauterine infection and maternal indications for delivery, but recent clinical trials have shown that immediate labour induction for women with PROM at term and an unfavorable cervical scores is preferable in the context of maternal and neonatal outcome, cost effectiveness, and patient satisfaction.

But management of preterm PROM is considered more complicated and requires meticulous evaluation of gestational age, fetal position, presence of infection and feto-maternal well-being.

Patients with PROM after 36 weeks:

There is little to be gained by conservative management as fetal lung maturity is complete or almost complete, so these patients should be delivered.

Patients with PROM between 34-36 weeks:

Corticosteroids are not given to accelerate fetal pulmonary maturity after 34 weeks, and conservative management increases the risk of chorioamnionitis and maternal hospital stay, so these patients should be delivered but in a tertiary care hospital with adequate neonatal intensive care unit facilities.

Patient with PROM between 32-33 weeks:

According to pulmonary maturity, if fetal pulmonary maturity is documented it is generally best to proceed to delivery before infectious complications occur. If fetal pulmonary immaturity is suspected, conservative management with close fetal monitoring, adjunctive antibiotic therapy and single course antenatal corticosteroid administration is appropriate either 2 doses of 12 mg betamethasone are given I.M one day apart or 4 doses of 6 mg dexamethasone are givem I.M 12 hours apart.

Patient with PROM before 32 weeks:

In absence of indications for delivery, women with PROM at 23 to 31 weeks should be managed conservatively to prolong pregnancy and reduce the risk of gestational age dependent morbidity.

Patient with PROM at <26 weeks :

Oligohydramnios resulting from preterm PROM leads to a high risk of perinatal and long term neurologic outcomes, this can be prevented by transabdominal amnioinfusion with restoration of an adequate amniotic fluid volume for>48 hours.

Only 30% of patients retained the infused solution and benefited from the procedure**.**

The process of amnioinfusion can be repeated if the patient did not retain the infused volume of fluid for $\geq$48 hours.

Amnioinfusion was considered successful when a pocket of >2 cm was maintained for at least 48 hours

Patient with PROM at <24 weeks :

Intracervical fibrin sealants may prevent leakage of fluid resulting in an increase in amniotic fluid volume and decreases the occurrence of pulmonary hypoplasia and skeletal anomalies.

Also fibrin sealants may act as a barrier preventing ascending infection**.**

Patients with cervical cerclage and PROM:

With current management scheme for PROM, cerclage retention significantly increases duration of latency without significant altering maternal or neonatal outcome.

Antibiotics is an important part in the treatment of PROM. Many studies have demonstrated that antibiotic administration with PROM was associated with prolonged latency period and decreased both maternal and neonatal morbidity

The most effective antibiotic regimen was aggressive intravenous therapy for 48 hours with ampicillin 2 gm intravenous every 6 hours and Erythromycin 250 mg intravenous every 6 hours, followed by 5 days oral therapy with amoxicillin 250 mg oral every 8 hours and enteric coated Erythromycin base 333 mg oral every 8 hours.

With this regimen of antibiotic administration for 7 days the likelihood that women would remain undelivered increased two folds, and this effect persisted for up to 3 weeks after discontinuation of antibiotics**.**

Corticosteroid administration in patient with PROM before 34 weeks gestation is associated with decreased neonatal RDS without any increase in perinatal infectious morbidity

Antenatal steroids therapy should not routinely be repeated in patients with PROM as the weekly courses of antenatal steroids in women with PROM did not improve neonatal outcome beyond that achieved with single course therapy and was associated with an increased risk of chorioamnionitis.

Higher doses don't increase the benefit and could increase the side effects.The fetus will gain the maximum benefit if delivered within 3- 7 days after the administration.

No studies have evaluated tocolysis given concurrently with antenatal corticosteroids and antibiotics administration. It is plausible that short term pregnancy prolongation with prophylactic tocolysis could enhance the potential for corticosteroid effect and allow time for antibiotics to act against subclinical decidual infection. It is not unreasonable to administer tocolysis under such circumstances.

Tocolytics have been evaluated in the conservative management of PPROM and have been found to be of limited value.Aggressive tocolysis after PPROM causes significant maternal morbidity, but doesn’t increases latency or decrease neonatal morbidity compared with either very limited tocolysis or no tocolysis at all.