



PERINATAL OUTCOME OF PRETERM PRELABOUR RUPTURE OF MEMBRANES BETWEEN 32-37 WEEKS OF PREGNANCY – A PROSPECTIVE STUDY

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ABSTRACT

AIM: The aim of this study is to systematically compare the induction of labour and expectant management in case of preterm premature rupture of membranes between 32 and 37 weeks in terms of neonatal sepsis, RDS, maternal health, health-related quality-of-life and costs.

OBJECTIVES:

- 1) To study active versus expectant management in preterm premature rupture of membranes (PPROM) between 32-37 weeks of pregnancy.
- 2) To estimate the prevalence, identify the risk factors & perinatal outcome of preterm premature rupture of membranes.

MATERIALS AND METHODS: This study was conducted in Govt Thiruvavur Medical College, Thiruvavur from December 2018 to November 2019 with ethical committee approval. 108 patients with gestational age of 32-36 completed weeks with confirmed ROM, Singleton pregnancy, primi, multigravida in the age group between 15-35 years were randomly allocated to active and expectant management groups. The admission, management procedures and events during delivery, puerperium and neonatal outcome were studied.

RESULTS: The incidence of PPRM was 3.56%. It was high in 34-36 weeks of gestation. The mean MRO duration during admission was 14.91 hours, admission to delivery interval 15.81 hours. The incidence of LSCS in active management is 32.12% whereas in expectant group is 16.9%. The duration of mother hospitalization and post-operative complications like fever, abruption placenta were not statistically associated with active and expectant management ($p > 0.05$). A statistically significant ($p = 0.007$) differentiation in neonatal hospitalization, RDS were noted in both groups. Admission delivery interval was significant in both 32-34 as well as 34-36 weeks preterm PPRM.

CONCLUSION: The incidence of PPRM is comparatively low because of improved living conditions and regular obstetric care. Active management by means of induction of labour between 34-36 completed weeks and expectant management between 32-34 weeks is safer for mother and fetus in pregnancies complicated by PPRM.

KEYWORDS : Preterm premature rupture of membranes, RDS, Active management, Expectant management

INTRODUCTION :

PPROM is defined as rupture of the amniotic membranes before 37 weeks of gestation and before the onset of labour. It is one of the high risk factor leading to approximately 1/3 rd of preterm births and it complicates about 3% of pregnancies. It is associated with many neonatal, maternal complications including neonatal sepsis, hyaline membrane disease (HMD), placental abruption, and eventually fetal death.

It is estimated 15 million preterm births occur worldwide and is associated with significant perinatal morbidity and mortality rates. About 35% of preterm birth follows preterm pre-labour rupture of membrane. The early detection of preterm labour or preterm rupture of membranes in traditional antenatal care is problematic because symptoms or signs may vary only a little from the normal physiological symptoms and signs of pregnancy. Hence detailed guidelines required to screen or manage pre-term labour. Around 60% of preterm births in the world occur in Africa and South Asia, and it is truly a global problem.

PPROM occurs in approximately 5–10 % of all pregnancies, out of which around 80 % occur at term (term PROM). It is an important clinical problem and the management option creates a dilemma for the obstetrician. On one hand, waiting for spontaneous onset labour (Expectant management) may lead to an increase in infectious disease for both mother and child, whereas on the other hand induction of labour (Active management) leads to preterm birth with an increase in neonatal morbidity and a possible rise in the number of instrumental deliveries.

MATERIALS AND METHODS:

This study was conducted in Govt Thiruvavur Medical College,

Thiruvavur for the period of 1 year from December 2018 to November 2019 after Ethical Committee approval.

This was a prospective study which was carried out among pregnant women who came with preterm premature rupture of membrane from 32 weeks to 36 weeks 6 days of gestational age. Sample size was calculated to 108 by using 7.72% prevalence of PPRM with 5% precision.

The study participants were divided into 2 groups

1. 32-34 weeks completed gestational age group
2. 34-36 weeks completed gestational age group

All the study participants enrolled in both the groups were further randomised to active and expectant management group. The outcomes were studied.

Inclusion criteria :

Pregnant Women with Gestational age between 32-36 weeks 6 days with

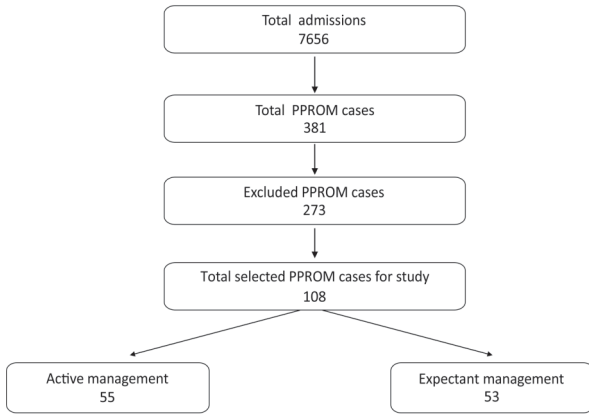
- Singleton pregnancy
- Primi and multigravida
- Previous LSCS
- Age group between 15-35 years
- Confirmed cases of leaking

Exclusion criteria:

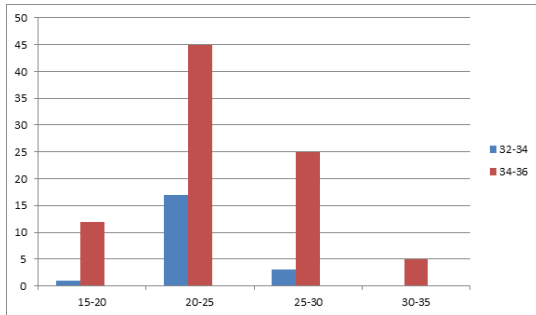
- Multiple pregnancies
- Features of chorioamnionitis
- Meconium stained liquor
- Severe oligohydramnios
- Non reassuring fetal heart rate in CTG
- Major congenital anomalies
- Medical or obstetric complications.

OBSERVATION & ANALYSIS :

Study participants in the study



Distribution of age-group & PPRM:



Management of PPRM and gestational group

Pre-term group	Active management	%	Expectant management	%	Total %	P value
32-34	7	33.33	14	66.67	21(100)	0.72
34-36	48	55.17	39	44.83	87(100)	0.72
Total	55	50.93	53	49.07	109(100)	0.72

DISCUSSION :

Among the participants studied for preterm premature rupture of membranes has shown that the incidence of PPRM is more common in younger age group of 20-25 years (57%) and less in > 30 years (5%). The same results were noted in study by shehla et al where the incidence of PPRM in women < 25 years was 58.8%. The incidence of PPRM is more common in low socio economic group of 61.1% in our study which is similar to the study by shehla et al is 68.2%. The high prevalence in younger age and low socio economic group is due to early marriages and poverty leading to poor nutrition which is one of the risk factor for PPRM. The incidence of PPRM was 3.56% in our study. The low incidence of PPRM is due to regular antenatal check-ups, increased living condition and wide use of antibiotics.

Around 85% of patients in both groups are admitted within 24 hours of membrane rupture in the study. In PPRM, most of the patients get into labour within few hours. In PPRM labour generally occurs within 24 hours in 35-50% , within 72 hours in 70% , and 90% of patients will deliver within two weeks (Daftary et al). In the present study, in expectant group out of the 53 patients 19 patients (35.84%) were delivered within 24 hours and 10 (18%) patients have the latency period of > 48 hours . A study by Neerhof et al shows that only 10% of the women managed expectantly had latency period greater than 48 hours. In active management group, about 52 (94%) of patients delivered within 24 hours. The incidence of LSCS in active management is 32.12% whereas in expectant group is 16.9%. In the study by Naef et el the incidence of LSCS in both groups are equal.

The incidence of chorioamnionitis is 5.6% (3 patients) in conservative group and none in active group whereas the incidence of chorioamnionitis is 2% in active group and 16% in expectant group in the study by Naef et al. The decrease in incidence was probably due to prophylactic antibiotics usage. The mean duration of hospitalisation in active management group is 3.61 in labour natural and 7.67 in LSCS whereas in expectant group is 5.14 in labour natural and 10.44 in LSCS.

There was no reported case of puerperal sepsis or postpartum endometritis. The incidence of growth in high vaginal swab culture in active management was 7.2% and 20% in expectant management however this difference was not statistically significant.

The mean duration of hospitalisation of new born was 7.10 days in active management and in expectant management 8.49 days which is statistically significant. There was no significant difference in 1 minute and 5 minutes Apgar score in both the groups. In the study by Naef et al, shows that there is no significant difference in hospital stay in both groups. The incidence of RDS was high in active (73.90%) than in expectant management (26.10%) whereas the incidence of sepsis is 80% in expectant and 20% in active management. The incidence of Low birth weight is 70.59% in expectant group whereas it is 29.41% in active group which is not statistically significant. Even though there is increased incidence of hospitalisation in both the groups there was no neonatal mortality. This is due to the early detection of the complications and timely intervention and appropriate treatment.

The maximum admission –delivery in this group was 128 hours. There was only 1 reported case of chorioamnionitis in expectant management. The mode of delivery, duration of hospitalisation the incidence of fever & abruptio placenta was not statistically significant in both the groups.

The incidence of RDS was 83.3% in active and 16.7% in expectant group in 32 to 33 weeks 6 which is statistically significant whereas in 34 to 36 weeks 6 days group RDS incidence was 70.6% and 29.4% in active and expectant group which is not statistically significant. The incidence of sepsis, prematurity and other neonatal complications in both the groups and both modes of management were not statistically significant. Overall there is increased adverse outcomes were noted in active management in 32 to 33 weeks 6 days. However in 34 to 36 weeks 6 days there was no significant hospitalisation and the neonatal outcome in both mode of management was similar . In the study by Neerof et al also suggested that there needs a natural break point at 34 weeks of gestation in the mode of management in preterm premature rupture of membranes between 32 and 36 completed weeks pertaining to the view of neonatal morbidity.

CONCLUSION:

PPROM is not uncommon in pregnancy. The incidence of PPRM was 3.56% in our study. It is common in lower socio economic status & 20-25 years of pregnant women. The management of PPRM depends upon the time of admission after MRO, clinical condition of fetus and mother and the gestational age of the mother.

Expectant management is the suggested management in PPRM patients with gestational age of 32-33weeks 6 days and active line of management is for 34-36 weeks 6 days. Also conversion from expectant to active management is also considered based upon maternal and fetal conditions. This will reduce the the neonatal complications and duration of hospitalization.

RDS, LBW and sepsis are major complication of PPRM in

preterm babies and the maternal complication was less evident in both the treatment groups.

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