



A COMPARATIVE STUDY OF ACTIVE VS EXPECTANT MANAGEMENT OF PREMATURE RUPTURE OF MEMBRANES AT TERM PREGNANCY

Gynaecology

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ABSTRACT

Rupture of foetal membranes occurring at least one hour before onset of labour pain is generally considered as Premature Rupture of Membranes (PROM). **Aims and Objectives:** To analyse the maternal and foetal outcome following either expectant or active management of patients admitted at term with Premature rupture of membranes. **Materials and Methods:** I have performed a comparative study to compare maternal and foetal outcome in pregnancies with prelabour/ premature rupture of membranes (PROM) at term with early induction of labour or expectant management. **Results:** There were 50 mothers; equally divided in two groups (Group 1 and Group 2). Group 1 (n=25) was induced by oxytocin immediately after clinical assessment (Active Management group). In Group 2 (n=25), mothers were watched for spontaneous onset of labour at least for 12 hours (Expectant Management Group). Total number of primigravida was 38 (76%) and rest was multigravida. **Conclusion:** Since outcome of active and expectant management may not be very different², women need to have appropriate monitoring and counselling to make informed choices.

KEYWORDS

Premature Rupture Of Membranes, Term Pregnancy

INTRODUCTION:

Rupture of foetal membranes occurring at least one hour before onset of labour pain is generally considered as Premature Rupture of Membranes (PROM). If the rupture occurs prior to 37 completed weeks (term), it is called Premature Preterm Rupture of Membranes (PPROM). Foetal membrane usually ruptures at the later part of first stage of labour.[1]

In term PROM, labour is likely to follow soon afterwards, but in preterm PROM, about 35-50% cases labour starts within 24 hours, 70% cases starts within 72 hours, about 90% delivery occurs usually within 2 weeks. Perinatal morbidity and mortality is increased while rupture occurs prior to term resulting in delivery of premature foetus.[2]

Approximately 80% of patients with PROM at term go into labour within 24 hours and 95% within 72 hours. The incidence of PROM, is variable, most studies report an incidence of 7 – 12%; but this could vary from 17 -27%; Preterm PROM contributes 2% among them. The factors implicated in PROM include :[3]

1. Focal thinning of the amniotic membranes
2. Reduced elasticity of chorioamniotic membranes due to strain, repetitive stress of uterine contractions
3. Biochemical alteration in the supporting connective tissue leading to local weakness in chorion.
4. Nutritional and dietary deficiencies such as inadequate ascorbic acid, zinc or copper intake (Cherukuri et al³ 1988, Artal et al¹ 1979, Kiiholma et al¹⁰ 1984) (Harger et al⁹ 1990)
5. Smoking, Cocaine abuse
6. Sexual activity
7. Cervical incompetence and pregnancy related condition like multiple gestation, polyhydramnios and marginal insertion of the umbilical cord.
8. Past history of PROM. It is observed that there is 20% chance of recurrence in subsequent pregnancy. (Naeye et al⁴ 1982)
9. Infection of genital tract—Verner et al observed through electron microscopy that Gr. B streptococci cause a progressive decrease in desmosome count and alteration of the basement membranes. An intense inflammatory reaction at the site of prematurely ruptured membranes noted as early as 1950; McGregor et al (1987) demonstrates in vitro exposure to bacterial protease reduce the bursting load of foetal membranes, thus micro-organisms given access to foetal membranes may be capable of causing membrane rupture, preterm labour or both.[5]

Regarding risks associated with PROM—

A. Maternal:

1. Preterm labour : 2/3 rd cases of PTL is associated with PPRM.
2. Abruptio placentae.
3. Intrauterine infection- Chorioamnionitis (30%), endomyometritis, puerperal sepsis.
4. Post Partum Hemorrhage- Due to increased incidence of marginal insertion of umbilical cord, (battledore placenta) and retained bits of placenta.
5. Psychosocial sequelae- PPRM causes dissatisfaction in both mother and relatives.

B. Foetal:

1. Prematurity- Low birth weight and its sequelae.
2. Neonatal sepsis (2 -4%) - Depending on gestational age at the time of rupture of membranes and length of latent period.
3. Oligohydramnios and Oligohydromnios-tetrad in prolonged PPRM - Facial anomalies, limb positioning defects, pulmonary hypoplasia, Impaired foetal growth.
4. Foetal hypoxia- due to cord prolapse, cord compression, abruptio placenta associated with PROM.

In a nutshell, management of PROM has to be stratified according to gestation as it determines the relative risks of expected management in terms of infection versus active management with risks of prematurity (in PPRM) and failed induction of labour with subsequent operative delivery. Lastly, Delivery always has to be expedited with evidence of foetal or maternal compromise or sepsis, irrespective of gestation. [9]

AIMS AND OBJECTIVES:

The goal of my study to analyse the maternal and foetal outcome following either expectant or active management of patients admitted at term with Premature rupture of membranes in Bettiah Medical College, for a span of one year from May 2019 to April 2020

MATERIALS AND METHODS :

I have performed a comparative study to compare maternal and foetal outcome in pregnancies with prelabour/ premature rupture of membranes (PROM) at term with early induction of labour or expectant management. 50 women with singleton pregnancy, cephalic presentation, favourable bishop's score (≥ 6) and gestational age ≥ 37 weeks are randomized either to immediate induction of labour with oxytocin i.e. active management (Group 1 ; n=25) or expectant management (Group 2; n=25). I have excluded those cases having poor Bishop's score (less than 6), associated high risk factors or

clinically revealed chorioamnionitis. Preterm labour, PPROM and abruptio placentae are excluded. Prophylactic antibiotic (Injection Ampicillin 2gm) was given. Group 1 patients undergo immediately induction and/or augmentation of labour following admission starting with 2 mIU/min oxytocin charged in Ringer's lactate solution with half hourly increment of doses until frequency of uterine contraction is at least 3/10 minutes with monitoring Foetal Heart Rate in every 15 minutes; oxytocin is stopped in presence of nonreassuring foetal heart rate and/or manifestation of tachysystole. Group 2 patients are waited for spontaneous onset of labour, no intervention is done for induction and augmentation of labour for 12 hours. If spontaneous labour does not start within this time period, labour is induced with oxytocin. The outcome of this comparative study is evaluated from maternal outcome (clinical chorioamnionitis, fever before or during labour, post partum fever), foetal outcome (Number of admission of neonate in nursery and poor apgar score). These primary outcomes are based on clinical effectiveness (mode delivery, induction- delivery interval, mean admittance-delivery interval) and safety (uterine hyperstimulation, caesarean delivery, maternal and neonatal morbidity).

RESULTS:

A comparative study is performed between two groups of pregnant mothers admitted in our labour room at term with features of Premature Rupture of Membranes – for a span of one year from May/2018 to April/2020.

There were 50 mothers; equally divided in two groups (Group 1 and Group 2). Group 1 (n=25) was induced by oxytocin immediately after clinical assessment (Active Management group). In Group 2 (n=25), mothers were watched for spontaneous onset of labour at least for 12 hours (Expectant Management Group). Total number of primigravida was 38 (76%) and rest was multigravida. All the patients went in labour within 12 hours. Every patients of Group 2 delivered vaginally. Whereas rate of caesarean delivery among induction group was 12%; indication was foetal distress or nonprogress of labour. Instrumental vaginal delivery was almost same in both groups (Group 1=12% , Group 2=8%).

Table – 1

The result of mode of delivery with study groups in primigravida

Group	Mode of delivery		
	Caesarean	Vaginal	Total
Expectant	0	17	17
Active	3	18	21
Total	3	35	38

Chi-square value 2 tailed P = (x2) 0.3; (p>0.05)

Table – 2 Outcome measurement in study groups

Outcome measurement	Group	
	Active	Expectant
Maternal distress	0	0
Clinical chorioamnionitis	0	0
Foeto-placental compromise	3	0
Duration of labour in hours (average)	7	7.25
Post partum pyrexia	3	0
Total	45	5

DISCUSSION:

Though term PROM is a common problem in day to day obstetric practice, there is no standard management protocol yet established. Among the 50 women who were included in this study, 76% were primigravida.

In the study of Kodanky & Telang and Someznec- Sikora et al they had also greater number of primigravida.

In the immediate induction group all goes in labour within 6 hours; on the other hand in expectant group also none had to wait for induction after 12 hours. This outcome is contrary to the study of George et al where 35.6% primigravidas went into spontaneous labour within 12 hours; difference can be explained by the difference in inclusion criteria of my study. Here all the mother included in the study had favourable bishop's Score (≥ 6).

The rate of caesarean delivery among primigravida in immediate induction group is 12%; whereas in expectant group no caesarean delivery is needed. There are many studies that have showed a lower caesarean delivery by expectant management for variable periods. In my study there is no statistically significant difference in mode of delivery among expectant and active management groups which is similar with the opinion of Hannah et al in a large RCT over 5041 women in 1993¹⁰.

Many studies have demonstrated shorter duration of active labour with immediate induction but in my study no such advantage is noticed. That may probably due to exclusion of all those patients having unfavourable cervix or obstetric complications which could lead to alteration of duration of labour as well as mode of delivery to avoid foeto maternal adverse outcome.

Hannah et al¹⁰ in their study concluded that immediate induction with intravenous oxytocin and conservative management result in similar rates of neonatal complication but immediate induction results in lower risk of maternal infection in an observation up to four days. In my study I have observed the patient for 48 hours. Maternal infection and neonatal infection as well as neonatal morbidity in both groups of my study were low which is observed in other studies too. However, interval from rupture of membranes to admission affects the postnatal period significantly (p=0.002, p<0.05).

CONCLUSION:

In case of premature Rupture of Membranes at term –both expectant and active management leads to similar maternal and neonatal outcome.

Since outcome of active and expectant management may not be very different⁵, women need to have appropriate monitoring and counselling to make informed choices.

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