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A Study of Maternal and Perinatal Outcome in Pre Labour Rupture of Membranes at Term

Authors
Dr S. Amala[1*], Prof Dr K.Lavanya Kumari[2], Dr Mirunalini[3]
[1]Final Year Post Graduate, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram
[2]Professor and Head, Department of Obstetrics And Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram
[3]Associate Professor, Department of Obstetrics And Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram
Corresponding Author*
Dr S. Amala
Final Year Post Graduate, Department of Obstetrics and Gynaecology, Rajah Muthiah Medical College, Annamalai University, Chidambaram
Email: *dramala2006@gmail.com*

Abstract
Introduction: *Prelabour Rupture of Membranes (PROM) is defined as the rupture of fetal membranes with a latent period before the onset of spontaneous uterine activity. The length of this latent period varies in different definitions from not being specified to up to 8 to 12 hours. If the membranes rupture after 37 weeks of gestation is termed as Term PROM. If the rupture of membranes (ROM) occur after 28 weeks but before 37 weeks of gestation it is termed as the Preterm Premature Rupture of Membranes (PPROM).*
Aim of the study: *To assess fetal and maternal outcome in prelabour rupture of membranes at term.*
Materials and Methods: *A Prospective hospital based study was conducted between the period of November 2015 and August 2017 on 100 pregnant women after 37 completed weeks with prelabour rupture of membranes admitted in labour room under the Department of Obstetrics and Gynaecology of Rajah Muthiah Medical College and Hospital. They are evaluated using a preset proforma meeting the objectives of the study. They were evaluated by means of a personal interview, by clinical examination and they were managed according to our institutional protocol. After delivery, the maternal and fetal outcome was studied till discharge. The study was performed in accordance with the ethical principles.*
Results: *In this study, the incidence of PROM was more in the age group of 20 – 29 years which was around 85%. In the present study, PROM was more in primigravida, about 78%. In this study, 34% of PROM occurred between 38 to 39 weeks. Among 100 cases of PROM, 85 cases had come with clear liquor and 15 cases had meconium stained liquor. Among 100 patients 66 delivered by LSCS and 34 by vaginal route. Here, the most common indication for LSCS was Fetal distress (39%), followed by CPD (15%). Maternal morbidity was 11%. Maternal complications include postpartum fever (4%), PPH (2%) and wound infection (2%). etc Perinatal morbidity include birth asphyxia (3%), hyperbilirubinemia (4%), Respiratory distress (8%) etc.*
Keywords: *Prelabour Rupture of Membranes (PROM), maternal and perinatal outcome.*

Introduction

The normal development, structural integrity, and function of the fetal membranes are essential for the normal progress and outcome of pregnancy. One of the most important functions of the membranes is to remain intact till the labour starts in order to maintain the protective intrauterine fluid environment. Indeed, in most pregnancies labour begins at term in the presence of intact fetal membranes. PROM is one of the common complications of pregnancy that has a major impact on the fetal and maternal outcome. PROM occurs in approximately 10% of all pregnancies and in 70% of the cases at term (Gunn et al 1970).The onset of labour following PROM is directly related to gestational age at the time of rupture of membranes. Term PROM complicates approximately 5-10% of pregnancies[2]. Among these, in approximately 50% of cases, labour starts spontaneously within 12 hours, 70 % within 24 hours, 85 % within 48 hours and 95% within 72 hours.

The maternal morbidity associated with PROM are risk of cord prolapse, abruptio placenta, retained placenta, postpartum fever, chorioamnionitis, an increased rate of cesarean section, PPH and endometritis, while the problems for neonates include problems of sepsis and respiratory distress if the PROM to delivery interval is more than 12 hours. The aim of the modern obstetrics is early detection of risk factors predisposing to PROM during antenatal period, prompt diagnosis of PROM and timely management of delivery that gives a high rate of successful outcome with least incidence of neonatal and maternal morbidity. The present study was undertaken to evaluate maternal and perinatal outcome in term PROM in our hospital and to review with the recent literature available.

Materials and Methods

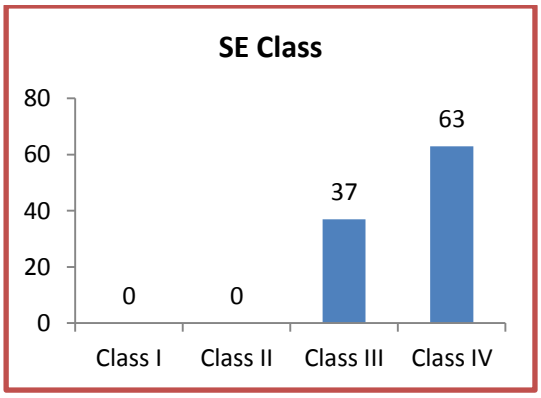
A Prospective hospital based study was conducted between November 2015 and August 2017 on 100 pregnant women after 37 completed weeks of gestation with prelabour rupture of membranes admitted in labour room under the Department of Obstetrics and Gynaecology of Rajah Muthiah Medical College and Hospital. They are evaluated using a preset proforma meeting the objectives of the study by means of a personal interview, by clinical examination and managed according to our hospital protocol. After delivery, the maternal and fetal outcome was studied till discharge. The study was performed in accordance with the ethical principles.

Inclusion Criteria: 1. Singleton pregnancy with a gestational age of >=37weeks confirmed by dates, clinical examination and ultrasound. 2 Primi and Multigravida. 3.Age group 18 – 40 yrs. 4.Cervical dilatation of< 3cms. 5.Pre-labour rupture of membranes confirmed by speculum examination.

Exclusion Criteria:1.Previos caesarean section.2 Multiple gestation. 3.Medical disorders complicating pregnancy.

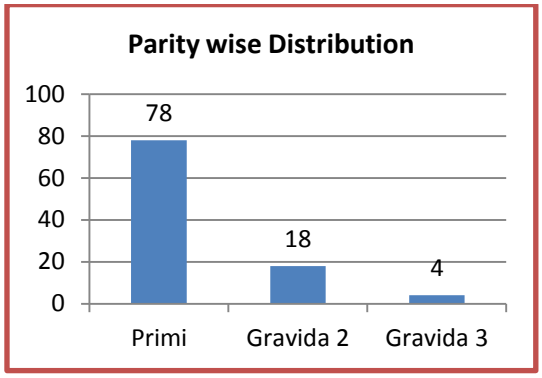
Results

Graph:1 Shows the Distribution of Socioeconomic Status



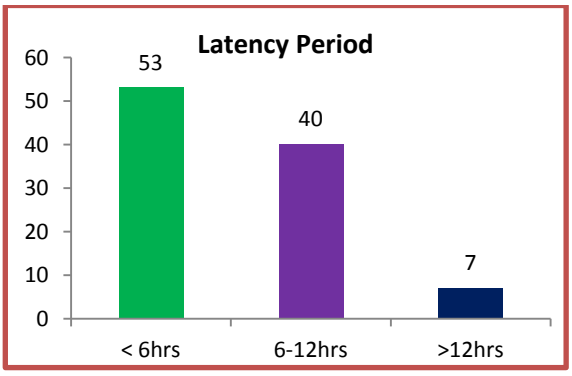
Legend:1 In the present study, the number of cases with term PROM was high in class IV socioeconomic class 63%. Many Studies (Artal et al 1976, Harger et al 1990) have shown that defects in the membrane may arise because of poor nutritional status, which is significantly influenced by SE status.

Graph: 2 Shows the parity wise distribution



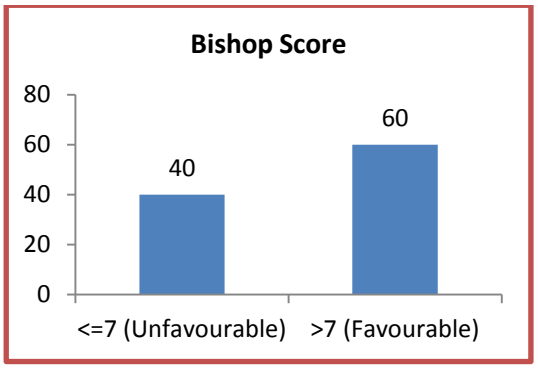
Legend:2 In the present study PROM is common in primigravida 78%. This is different from the study conducted by Bianco A et al in 1996 where PROM is commoner in multigravida.

Graph 3 Shows the latency period wise distribution among the PROM patients



Legend :3 In this study, 53 patients had a latency period of less than 6hrs, 40 patients had 6-12 hrs and 7 patients had >12 hrs.

Graph: 4 Shows the bishop score among the patients



Legend:4 in this study, 40 patients had Bishop's score of less than 7.

Table:1 Showing mode of delivery for the values of Bishop score

Bishop Score	Vaginal Delivery	LSCS	Total no. of cases
Favourable score	22(52%)	20(48%)	42
Unfavourable score	12(21%)	46(79%)	58
Total	34	66	100

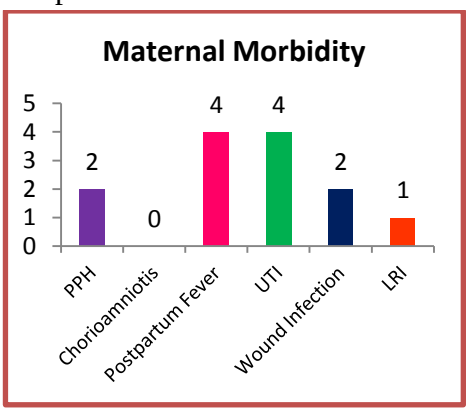
Table 1 : In this study out of 42 patients with favourable Bishop score 22 patients delivered vaginally and out of 58 patients with unfavourable Bishop score 12 patients delivered vaginally.

Table 2 Showing the indications for LSCS

Indication for LSCS	Number of cases	Percentage
Breech	1	1.5
Fetal distress	39	59.1
CPD	15	22.7
Non descent	1	1.5
Non reactive NST	1	1.5
Contracted pelvis	2	3.0
Persistent fetal tachycardia	4	6.1
Severe oligohydramnios	2	3.0
Failed induction	1	1.5
Total	66	100.0

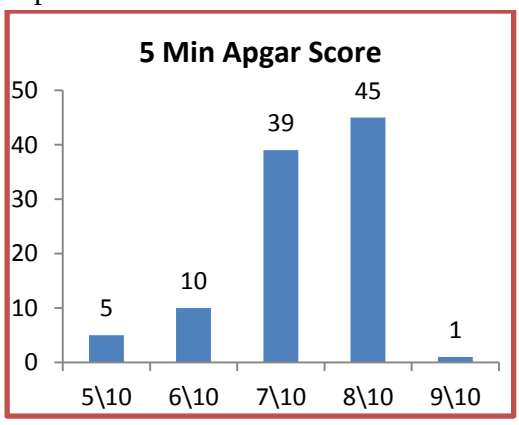
Table 2: In this study, LSCS was done due to fetal distress in 59.1% of patients which coincides with Malay sarkar et al.

Graph: 6 Shows the maternal morbidity among the PROM patients



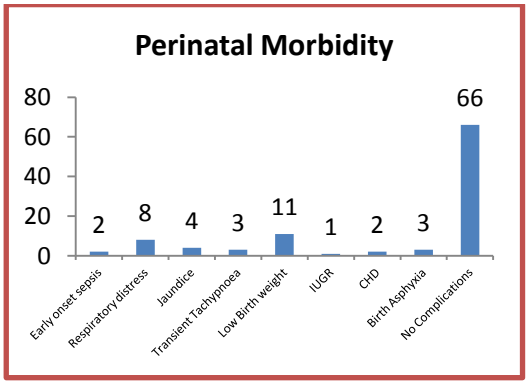
Legend: 6 The most common complication attributed here is Postpartum Fever and UTI.

Graph: 7 Shows the 5 min Apgar score in PROM patients



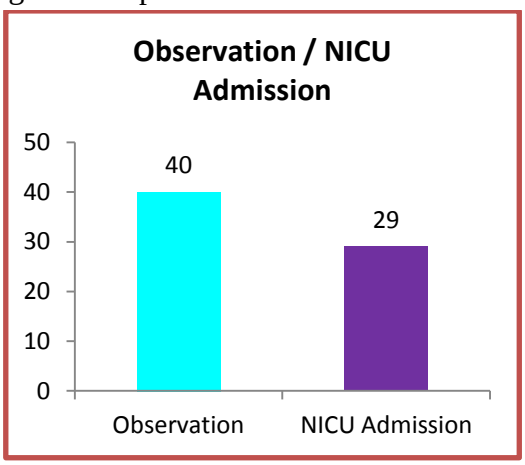
Legend: 7 In this study, 85 babies had normal 5mins APGAR score and 15 babies had APGAR score 5 and less.

Graph: 8 Shows the perinatal morbidity among PROM patients



Legend: 8 in this study perinatal morbidity includes Early onset sepsis (2%), Respiratory Distress (8%), Low birth weight (11%), Birth asphyxia (3%) etc.

Graph: 9 Shows the observation/ nicu admission among PROM patients



Legend: 9 Among 100 babies only 29 babies needed admission and treatment. Other babies (40) were handed over to the mother after some period of observation as they had no complications.

Discussion

Term prelabour rupture of membranes can be associated with maternal and neonatal morbidity and mortality. This study was done in Rajah Muthiah Medical College, Annamalai University taking into account of 100 patients with PROM at Term. Overall incidence at RMMC hospital was found to be 9.06%. General Incidence varies from 2-18% (Gunn et al 1970) 2.7 to 17% (Arias)[7]. In this study, 43 cases were more than 25 yrs of age. High incidence of PROM was reported in low SE group. In this study, 63% of patients were in low SE group[8].

According to various studies (Revathi et al 2015, Malay Sarkar et al 2013), the poor antenatal booking has got a significant role in the risk factors on PROM. But in this study, all the patients were booked and had a regular Antenatal checkup. Bianco A et al in 1996 presented from their study that PROM is commoner in multigravida. Calvin from his extensive studies also showed an increased incidence of PROM in multigravida. But Margret B. Ballard didn't find any difference in parity distribution. In the present study, PROM was more in primigravida (78%) which is different from all other studies[9].

Among 100 patients in this study, 96 patients had absent membranes and leaking liquor and only 4 patients had intact membranes with leaking liquor (HROM). Among the risk factors of PROM in this study, H/O recent coitus was in 7% and Malpresentation in 5% and unknown factors in the majority (85%). Regarding the latency period, 53 patients had a latency period of less than 6hrs and 40 patients between 6 and 12hours which is almost the same as the reports of Donald. S. Greig observed that in 60% of patients labour started by 3 hrs after PROM and it varied from 3–12 Hrs. In this study, 40 patients had Bishop's score of less than 7 which coincides with the Thakor U et al study in 1995 which states that the lowest Bishop's score (4-6) yielded highest LSCS rates[13].

Caesarean deliveries in this study was 66% and normal delivery was 34%. In this study, LSCS was most commonly done due to fetal distress (59.1%) which coincides with Malay Sarkar et Al study in 2013 followed by CPD (22.7%), Persistent fetal tachycardia(6%), Contracted pelvis and severe oligohydramnios 2% respectively. In this study, the maternal morbidity was due Postpartum Fever (4%), PPH (2%), wound infection(2%), UTI (1%) ,etc.Caesarean wound infection and UTI were treated with IV antibiotics for 5-7 days as per the Culture& sensitivity reports. All patients were treated with routine antibiotics prophylactically.

In this study, all the Vaginal delivery patients without complications were discharged on 2nd or 3rd day and LSCS patients without complications are discharged on 7th or 8th day. The duration of stay for the patients with morbidities ranged between 10 and 15 days depending upon the complication.

In this study, 85 babies had APGAR score of >=7 and 15 babies had APGAR score of <7. In this study 45% of babies had perinatal morbidities like Early onset sepsis (2%), Low birth weight (11%), respiratory distress (10%), Birth asphyxia (3%), IUGR, Jaundice, TTN etc. Among 100 babies only 29 babies needed admission and management. In this study, the average hospital stay for neonates admitted in NICU was 3 to 5 days. Among the babies who are admitted, 5 babies (17.2%)were treated with Iv antibiotics for more than 5 days. 55% of the babies are handed over to the mother on second day. There was no perinatal or maternal mortality in this study.

Conclusion

Evaluation of risks of PROM and timely diagnosis is essential to reduce maternal and perinatal morbidity and mortality. This study coincides with other studies and shows that the most important risk factors associated with PROM are low SE status and nutritional deficiency. Active management is needed to enable delivery within 24 hrs of PROM and it offers better maternal and neonatal outcome. Fetal distress is the common indication for cesarean section. Perinatal morbidities encountered in this study were Birth Asphyxia, Respiratory Distress, Low birth weight etc. A healthy neonate, as well as a healthy satisfied mother, are natural aims for the obstetrician.

Source of Support-Nil
Conflict Of Interest -None

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