

Comparative prospective study of outcome between aggressive and expectant management of premature rupture of membranes

Shivamurthy H M **, N Spandana *, Y Anusha Sunkara *, Ahswini Konin *, V Sridivya Chowdary *

** Professor, * Postgraduates, Department of Obstetrics and Gynaecology, JJM Medical College, Davangere-577004, Karnataka, INDIA.

Email: dr_shivamurthy2003@yahoo.com

Abstract

Background: Premature rupture of membranes (PROM) is the loss of integrity of membranes before onset of labor. PROM occurs in approximately 5–10 % of all pregnancies and is a significant obstetric problem and is an important cause of maternal and neonatal morbidity. When PROM occurs at term, labor typically ensues spontaneously or is induced within 12 to 24 hours. **Objectives:** To compare the expectant and aggressive management and its neonatal and maternal outcomes. **Material and Methods:** This is a prospective study carried out in the Obstetric and Gynecology Department of J.J.M Medical College, Davangere, Karnataka. **Results:** There were 573 cases of PROM giving incidence of 8.15%. The incidence was found to be higher in case of rural, young, primigravida. Out of these PROM cases 81.5% were managed aggressively (group A), 18.4% were managed expectantly (group B). Mode of delivery was as follows. Group A (Expectant management) Vaginal delivery in 70.75%, LSCS in 29.25 %. Group B (Aggressive management) Vaginal delivery 83.7% LSCS 27%. Perinatal mortality, Group A 7.54 %, Group B 1.28%. Perinatal morbidity, Group A 7.54 % group B 4.49%. Maternal morbidity, Group A was 18.86% Group B 1.07%, Maternal mortality Group A 0.94% one, Group B was zero. **Conclusion:** Aggressive management by induction of labor within 12 hours in PROM reduced the time of delivery and the rates of chorioamnionitis, endometritis, and admission to the neonatal intensive care unit. A proposed plan of "Aggressive management" is the final answer to decrease maternal and neonatal morbidity and mortality. **Keywords:** Premature Rupture of Membranes, Maternal and Neonatal morbidity and mortality, Obstetric outcome, Induction of Labour.

*Address for Correspondence:

Dr. Shivamurthy, H M, Door No 4006/1, 17th Main, 6th Cross, M C C "B" Block (Extended) Behind Bapuji High School, Davangere 577004, Karnataka, INDIA.

Email: dr_shivamurthy2003@yahoo.com

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INTRODUCTION

Premature rupture of membranes (PROM) refers to the loss of integrity of membranes before onset of labor, results in leakage of amniotic fluid and establishment of

communication between the amniotic cavity and the endocervical canal and vagina. PROM occurs in approximately 5–10 % of which 80 % occur at term (Term PROM). PROM occurs when intrauterine pressure overcomes membrane resistance. This happens as a result of weakening of membrane either congenital or acquired (smoking and vitamin C deficiency), or because of damaging factors either mechanical (amniocentesis or amniocopy) or physical–chemical damage by infection (Trichomonas, group B Streptococci, bacterial vaginosis, etc.). Failure of mechanical support such as cervical dilatation can lead to PROM, favoring bacterial contamination as well. Interestingly, at term, PROM can be a physiological variation rather than a pathological event. Approximately in 60–70 % of term PROM cases, labor sets within 24 h and in additional 20–30 % cases it

will start within 72 hours. Diagnosis and proper management is very important as it may lead to various fetal and maternal complications generally due to infection. To avoid such a complication, labor is usually induced, once PROM is confirmed. Different methods of induction of labour exist, of which prostaglandins are used for cervical ripening and myometrial stimulation. However, there remains the risk of increased Cesarean section due to either failure of induction or hyperstimulation.

MATERIAL AND METHODS

This was a prospective study conducted in the Department of Obstetric and Gynecology, J.J.M Medical College, Davangere from January 2013 to December 2013. There were 573 women admitted with PROM as per selection criteria mentioned below:

Inclusion Criteria

1. Singleton pregnancy.
2. Gestational age between 37 and 42 completed weeks.
3. Spontaneous PROM confirmed by history and examination

Exclusion Criteria

1. PROM before 37 completed weeks.
2. Features of chorioamnionitis.
3. Meconium stained liquor.
4. Medical or obstetric complications indicating prompt delivery.
5. Multiple pregnancies

Subjects were categorized into two groups like Group A Expectant Management, Group B Aggressive management by Induction of labour. In group A, Expectant management was done by monitoring for onset of spontaneous uterine contractions for 24 hours. The vaginal examination was done only if uterine contractions were good to decide labor progress. Induction was only done by prostaglandins or oxytocin after 24 hours where labor was not established. Group A, was subdivided into A1 group where spontaneous labor started within 24 hours and A2 group where induction was required after 24 hours. The group B was monitored for uterine contractions and fetal heart activity following induction till delivery. Pervaginal examination was done to confirm labor progress or induction failure after 6 hours of induction. Reinduction was done after 10 hours of initial induction. In cases of induction failure emergency LSCS were performed. Again group B was subdivided into B1 group, where induction was successful, and group B2 where reinduction was required because of failure of primary induction, with prostaglandin or oxytocin. In both the groups LSCS were performed for fetal distress, nonprogress of labor, and failure of induction with/without chorioamnionitis. In puerperium, all patients were followed clinically and investigated for evidence of infection. Clinical parameters like fever, tachycardia, abdominal tenderness, foul smelling lochia, subinvolution of uterus, and evaluation of stitch line for maternal morbidity. Laboratory parameters such as complete blood count, urine culture and sensitivity were done. Foetal morbidity was assessed admission to NICU. Foetal mortality was also taken in to account.

RESULTS

Distribution according to gravidity

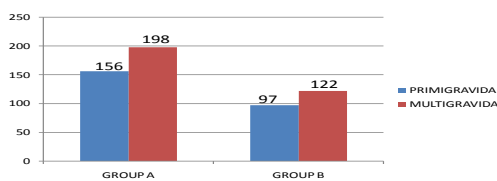


Figure 1:

Number of cases in expectant group (n=106)

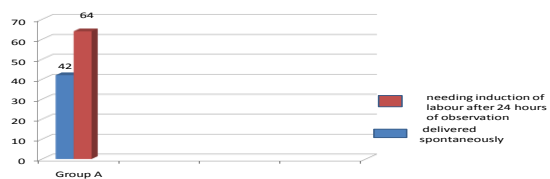


Figure 2:

Number of cases in aggressive management group (n=467)

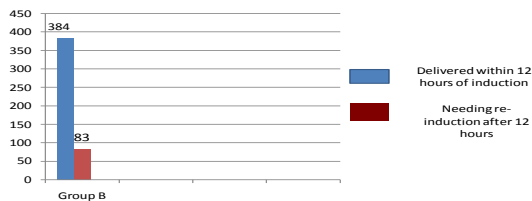


Figure 3:

Number of LSCS and Vaginal in both the groups

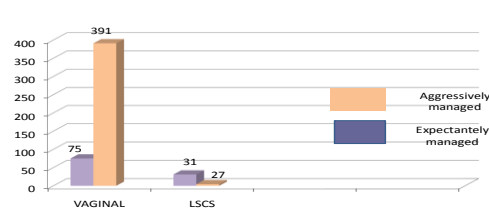


Figure 4:

Perinatal outcome of the two groups

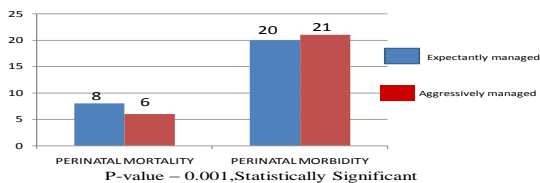


Figure 5:

Maternal outcome of the two groups

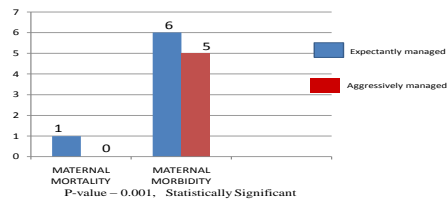


Figure 6:

DISCUSSION

The benefit of active management in cases with PROM at term has been shown to reduce latency following development of PROM. This is beneficial in terms of reduction of maternal and neonatal infection without much fear of increase in LSCS incidence due to labor induction. Several studies have shown benefit of oxytocin, prostaglandin E2, or prostaglandin E1 as an important method of cervical ripening in cases of unripe cervix. There was difference in incidences of cesarean delivery in expectant and immediate induction groups which were 29.2 and 5.7%, respectively, which outcome was in agreement with the study in the literature which showed higher cesarean rates in expectant management.

Maternal

Neonatal morbidity was higher in expectant group, which can be reduced by limited pervaginal examinations, proper aseptic precautions, and appropriate antibiotic coverage. Hospital stay can be reduced by active management.

CONCLUSION

Active management of PROM by early induction is superior to expectant management irrespective of cervical status. It shortens PROM to delivery interval and decreases maternal, neonatal morbidity and mortality. Aggressive management by induction of labor within 12 hours in a case of prom reduced the time of delivery and the rates of chorioamnionitis, endometritis, and admission to the

neonatal intensive care unit. A proposed plan of "Aggressive management" is the final answer to decrease maternal and neonatal morbidity and mortality.

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