

Can Expectant Management Gives Better Outcome than Immediate Delivery in Females Presenting with Preterm Premature Rupture of Membrane Close to Term

SHAGUFTA JABBAR¹, GHAZALA IFTIKHAR², FARIHA ARSHAD³, AMNA ASIF⁴, NAILA KHAWAR⁵, SADAF KASHIF⁶¹Consultant Gynaecologist, ²Chief Consultant Gynaecologist, ³⁻⁵Gynaecologists, Social Security Hospital, Multan Road, Lahore⁶Senior Registrar, Fatima Memorial Hospital, LahoreCorrespondence to: Shagufta Jabbar, Email: shaguftakamran310@gmail.com, Cell: 0300-4204398

ABSTRACT

Objective: To compare the outcome of expectant management versus immediate delivery in females with preterm premature rupture of membrane close to term.

Study Design: Randomized controlled trial

Place and Duration of Study: Department of Obstetrics & Gynaecology Unit III, Fatima Memorial Hospital Lahore from 20th June 2018 to 20th December 2018

Methodology: Three hundred females were included through emergency. They were divided in two groups; females of group A managed conservatively and females of group B were induced for delivery and immediate delivery was conducted. After delivery in both groups, outcome was recorded i.e. neonatal distress, poor Apgar score or NICU admission.

Results: The mean age of group A was 27.53±4.99 years and group B was 25.81±4.92 years. The mean gestational age of group A was 33.92±1.41 weeks and group B was 33.88±1.40 weeks. In group A there were 28 (18.7%) women with parity 1, 40(26.7%) with parity 2, 42 (28%) with parity 3 and 40 (26.7%) with parity 4 whereas in group B there were 28(18.7%) women with parity 1, 40 (26.7%) with parity 2, 42 (28%) with parity 3 and 40 (26.7%) with parity 4. In group A there were 54 (36%) women with normal BMI, 44 (29.9%) were overweight and 52 (34.7%) were obese while in group B there were 63 (42%) women with normal BMI, 38 (25.3%) were overweight and 49 (32.7%) were obese. There was no significant (P=0.329) association between neonatal distress and study groups and also no significant (P=0.202) association between poor APGAR score and study groups.

Conclusion: Incidence and rate of neonatal distress in complicated pregnancies by PPRM within 34 and 37 weeks of gestation is very low

Keywords: Delivery, Preterm, Premature, Rupture of membrane, Term, Outcome, Expectant, Management

INTRODUCTION

Premature pre-labour rupture of membrane (PPROM) is defined as fetal membrane rupture before labor induction and premature membrane rupture is defined as fetal membrane rupture before 37 weeks of gestation. It is one of the leading causes of neonatal morbidity and mortality.¹

The frequencies of term, preterm, and mid-trimester PROM are approximately 8, 3, and less than 1 percent of pregnancies, respectively.² Management of PROM depends upon several factors, most importantly the gestational age at occurrence and the maternal- fetal clinical condition.^{2,3}

Premature pre-labour rupture of membrane close to term is associated with increased risk of neonatal infection, but immediate delivery is associated with risks of prematurity. The balance of risks is unclear.⁴ One study showed that the frequency of fetal distress was 28% with immediate delivery while 16% with expectant management. The difference was insignificant (P=0.14). Similarly, poor Apgar score (4% vs. 4%, p>0.999) and NICU admission was (6% vs. 8%, p=0.70).⁵

One more study showed that frequency of fetal distress was 7.8% with immediate delivery while 6.3% with expectant management. The difference was insignificant (P=0.486). Similarly, poor Apgar score (0.7% vs. 0.4%, p=0.558) and NICU admission was (9.0% vs. 5.6%, p=0.128).⁶

MATERIALS AND METHODS

This randomized controlled trial was conducted at Department of Obstetrics & Gynaecology Unit III, Fatima Memorial Hospital Lahore from 20th June 2018 to 20th December 2018. Females of age 18-35 years, parity <5, gestational age 32-36 weeks (on LMP) presenting with PPRM were included. All females with active labour (>3 contractions in 10 min and cervical opening >4cm), meconium stained liquor required emergency delivery and females with Group B streptococcus were excluded. Demographic data (name, age, gestational age, parity and BMI) was recorded. A total of 300 were enrolled. They were randomly divided in two groups; females of group A were conservatively managed (expectant

management) and females of group B were induced for delivery and immediate delivery was conducted. Females in expectant management group was admitted in gynecology wards and followed-up there until active labour and delivery time. Female in immediate delivery group was induced with misoprostol and were admitted in labour room for delivery. After delivery in both groups, outcome was recorded i.e. neonatal distress, poor Apgar score or NICU admission. The data was entered and analyzed through SPSS-20. Both groups were compared by using chi-square test. P≤0.05 was considered as significant.

RESULTS

The mean age in group A was 27.53±4.99 years and in group B was 25.81±4.92 years. The mean gestational age in group A was 33.92±1.41 weeks while in group B was 33.88±1.40 weeks (Table 1).

Table 1: Descriptive statistics of the females

Variable	Expectant Management	Immediate Delivery
Age (years)	27.53±4.99	25.81±4.92
Gestational age (weeks)	33.92±1.41	33.88±1.40

Table 2: Demographic information of women in both groups (n=300)

Variable	Expectant Management	Immediate Delivery
Parity		
1	28(18.7%)	39(26%)
2	40(26.7%)	36(24%)
3	42(28%)	35(23.3%)
4	40(26.7%)	40(26.7%)
Body Mass Index		
Normal	54(36%)	63(42%)
Overweight	44(29.3%)	38(25.3%)
Obese	52(34.7%)	49(32.7%)

In group A there were 28(18.7%) women with parity 1, 40(26.7%) with parity 2, 42(28%) with parity 3 and 40(26.7%) with parity 4 whereas in group B there were 28(18.7%) women with

parity 1, 40(26.7%) with parity 2, 42(28%) with parity 3 and 40(26.7%) with parity 4. In group A there were 54(36%) women with normal BMI, 44(29.9%) were overweight and 52(34.7%) were obese while in group B there were 63(42%) women with normal BMI, 38(25.3%) were overweight and 49(32.7%) were obese (Table 2).

There was no significant ($P=0.3229$) association between neonatal distress and study groups (Table 3). Also there was no significant ($P=0.202$) association between poor APGAR score and study groups (Table 4).

Table 3: Comparison of neonatal distress in both groups

Neonatal distress	Group A	Group B	P value
Yes	12 (8%)	17 (11.3%)	0.329
No	138 (92%)	133 (88.7%)	

Table 4: Comparison of Poor APGAR score in both groups

Poor APGAR score	Group A	Group B	P value
Yes	27(18%)	36(24%)	0.202
No	123(82%)	114(76%)	

DISCUSSION

Being born too early can increase the chance of problems linked to prematurity, such as breathing difficulties and longer stays in the neonatal intensive care unit. However, staying in the womb may cause infections for both mother and baby that can lead to serious health problems and even death.⁵ The findings of Morris et al⁴ prove that ruptured membranes women between 34-36 weeks of pregnancy with single fetus, immediate delivery enhanced fetus complications such as sepsis.

Therefore, in contrast to recent guideline recommendations,^{7,8} expectant management is preferred in ruptured membranes. Careful monitoring is required to avoid the risk of antepartum haemorrhage.

The previous study showed that women with PPRM at preterm gestational period did not reduce distress in neonatal with expectant management or immediate delivery.⁵ These findings are similar to the findings of our study as in our study there was no significant association between neonatal distress and treatment groups. Results of two different studies also reported the similar results that immediate delivery not help in reduction of neonatal distress as compared to expectant management.^{9,10}

One study showed that the frequency of fetal distress was 28% with immediate delivery while 16% with expectant management. The difference was insignificant ($P=0.14$). Similarly, poor Apgar score (4% vs. 4%, $p>0.999$).⁵ Another study showed that frequency of fetal distress was 7.8% with immediate delivery while 6.3% with expectant management. The difference was insignificant ($P=0.486$). Similarly, poor Apgar score (0.7% vs. 0.4%, $p=0.558$).⁶

In our study the neonatal distress was 8% in expectant management and 11.3%. These findings in our study are greater than the findings of the above mentioned study. While according to Van Der Ham¹⁰ neonatal sepsis is observed in 2.6% of newborns as to 4.1% of newborns in expectant reduction group. This was comparatively less than reported in our study.

Quist et al¹¹ found no significant variation in neonatal distress among treated groups. These findings are similar to the findings of our group as in our group there was no significant difference between the neonatal distress and treatment groups ($p=0.32$). Nonetheless, spontaneous delivery decreases the chances of sepsis in positive vaginal culture patients. Vaginal culture contained 14 different pathogens. Risks are thought to be associated with both gestational age and biological factors associated with the preterm birth, including PPRM.¹²

Immediate delivery might exacerbate the chances of premature baby. Though EM in intrauterine should be

circumvented in a mother with no history of chorioamnionitis. EM provides better opportunity over spontaneous labor in a reduction of neonatal respiratory illness.^{13,14}

Waiting for spontaneous delivery in many cases enhanced the chances of infectious diseases both for child and mother. Contrary, induced labor often leads to preterm birth with increased chances of neonatal morbidity. In this study the incidence of PROM between 34 and 37 weeks was 10% which is comparable to incidence of 5-10% in most studies.¹⁵

CONCLUSION

Incidence and rate of neonatal distress in complicated pregnancies by PPRM within 34 and 37 weeks of gestation is very low.

REFERENCES

1. Elshamy E. Immediate Delivery versus Expectant Management in Pregnant Women with Preterm Premature Rupture of Membranes at 34 Weeks: A Cohort Study. *ARC J Gynecol Obstet* 2016; 1(1):8-13.
2. Middleton P, Shepherd E, Flenady V, McBain RD, Crowther CA. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more). *Cochrane Database Syst Rev* 2017; 1: CD005302.
3. Scorza WE. Management of premature rupture of the fetal membranes at term. 2017[cited 2017]; Available from: <http://www.uptodate.com/contents/management-of-premature-rupture-of-the-fetal-membranes-at-term>.
4. Morris JM, Roberts CL, Bowen JR, Patterson JA, Bond DM, Algert CS, et al. Immediate delivery compared with expectant management after preterm pre-labour rupture of the membranes close to term (PPROM trial): a randomised controlled trial. *Lancet* 2016; 387(10017):444-52.
5. Poornima B, Reddy DD. Premature rupture of membranes at term: immediate induction with PGE2 gel compared with delayed induction with oxytocin. *J Obstet Gynecol India* 2011;61(5):516-8.
6. van der Ham DP, Vijgen SMC, Nijhuis JG, van Beek JJ, Opmeer BC, Mulder ALM, et al. Induction of labor versus expectant management in women with preterm prelabour rupture of membranes between 34 and 37 weeks: A randomized controlled trial. *PLoS Med* 2012;9(4):1-16.
7. Committee on Practice Bulletins-Gynecology A. ACOG Practice Bulletin No. 79: Pelvic organ prolapse. *Obstet Gynecol* 2007;109(2 Pt 1):461.
8. Steer P, Flint C. Preterm labour and premature rupture of membranes. *BMJ* 1999; 318(7190):1059-62.
9. Buchanan SL, Crowther CA, Levett KM, Middleton P, Morris J. Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy outcome. *Cochrane Database Syst Rev* 2010(3).
10. Van Der Ham DP, Vijgen SM, Nijhuis JG, Van Beek JJ, Opmeer BC, Mulder AL, et al. Induction of labor versus expectant management in women with preterm prelabour rupture of membranes between 34 and 37 weeks: a randomized controlled trial. *PLoS Med* 2012;9(4):e1001208.
11. Quist-Nelson J, De Ruigh AA, Seidler AL, Van Der Ham DP, Willekes C, Berghella V, et al. Immediate delivery compared with expectant management in late preterm prelabour rupture of membranes: an individual participant data meta-analysis. *Obstet Gynecol* 2018;131(2):269-79.
12. Kenyon S, Boulvain M, Neilson JP. Antibiotics for preterm rupture of membranes. *Cochrane Database Sys Rev* 2003;2:11-3.
13. Lee J, Seong HS, Kim BJ, Jun JK, Romero R, Yoon BH. Evidence to support that spontaneous preterm labor is adaptive in nature: neonatal RDS is more common in "indicated" than in "spontaneous" preterm birth. *J Perinat Med* 2009;37(1):53-8.
14. Lee J, Sseong H, Kim B, Jun J, Romero R, Yoon B. Evidence in support that spontaneous preterm labor is adaptive in nature. *Am J Obstet Gynecol* 2007;197(6).
15. Novy MJ. Transabdominal cervicoisthmic cerclage for the management of repetitive abortion and premature delivery. *Am J Obstet Gynecol* 1982;143(1):44-54.