ACTIVE VERSUS CONSERVATIVE MANAGEMENT OF PRELABOUR RUPTURE OF MEMBRANES AT TERM

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ABSTRACT

Objective: *To compare maternal and foetal outcome of active versus conservative management of premature rupture of membranes after 37 completed weeks of pregnancy.*

Methodology: *This quasi-experimental study was carried out at Gynae unit, Lady Reading Hospital, Peshawar from September 2004 to September 2005 and included 100 patients out of which 50 were managed conservatively and 50 actively. After confirming the leakage of amniotic fluid, patients were randomized by lottery method to conservative or induced group. The patients in the group that was managed conservatively were shifted to obstetrical ward to await the onset of regular uterine activity for at least 48hrs. After Bishops scoring, patients were induced with vaginal prostaglandin E2 tablet. Both groups received intravenous antibiotics.*

Results: *Total number of patients with PROM at term was 3.84%. Total cost of stay in hospital and management was greater in induced group (P. value <0.05%). Latent time was short in induced group whereas hospital stay was prolonged in induced group. About 80% of patients in conservative group delivered by NVD as compared to 60% in induced group. Among complications mild fever and PPH were significantly (P. value <0.05) more common in conservative group. There was neither neonatal death nor stillbirth in both groups. No statistically significant difference (P. value >0.05) was observed in respect of perinatal outcome and infectious morbidity in babies.*

Conclusion: *Conservative management of PROM at term should be viewed more positively for at least 48hrs under appropriate antibiotic cover and with active management of 3rd stage of Labour.*

Key Words: *Labour, Premature Rupture of Membranes (PROM), Prelabour*

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INTRODUCTION

Prelabor rupture of membranes (PROM) is the rupture of the fetal membranes with a latent period before the onset of spontaneous uterine activity. The length of this period varies in different definitions from not being specified to up to 8 hours[1]. Premature rupture of membranes (PROM) occurs in 10% of all pregnancies, about 80% of these occurring in term pregnancies and only 10% occurring at less than 37 weeks of gestation[2].

The management of prelabor rupture of membranes at term is still a matter of debate, and varies from centre to centre. While active induction of Labor after prelabor rupture of membranes has resulted in a lower risk of maternal and fetal sepsis in some studies, it has also been associated with a higher caesarean section rate in others[3].

The result of largest randomized controlled trial on prelabour rupture of membranes to date found that active labour induction with oxytocin or vaginal prostaglandin E_2 (PGE_2) versus expectant management resulted in similar rates of caesarean sections and neonatal infections; although the risk of maternal infection was lower with oxytocin induction[4].

This reduction in maternal infections was not seen with vaginal PGE_2, and was probably due to a greater No of vaginal examinations in this group. Women with active management had shorter PROM to delivery intervals as compared with the expectant group and mostly women prefer active management.

Since early 1970's the use of

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prostaglandins in obstetrics has been refined and over the past 10 years, preparations contains PGE_2 as vaginal paste, viscous gel, dry vaginal tablets, lipids or waxed vaginal pessaries and non biodegradable pessaries have proved to be safe and effective for induction of labour[5].

The aim of the study was to compare the active and expectant management of PROM at term regarding maternal and fetal outcome. Maternal and fetal outcomes were measured in terms of maternal complications, fetal complications, duration of stay in hospital, mode of delivery and cost of management in the two afore mentioned groups.

METHODOLOGY

It was a one year study carried out at Gynae Unit postgraduate Medical Institute, Lady Reading Hospital, Peshawar from September 2004 to September 2005.A total number of one hundred patients with prelabour rupture of membranes were included in the study Out of which 50 patients were managed conservatively and 50 patients were managed actively.

Patients presenting with Singleton pregnancies with PROM after 37 completed weeks were admitted in the ward. Rupture of membranes was confirmed by pooling of amniotic fluid in post fornix of vagina, by sterile speculum examination. All those patients who presented with PROM before 37 completed weeks and with complicated PROM i.e. PROM associated with mal-presentations, placental abruption, twin pregnancy, history of injection and drips, hypertension, diabetes mellitus, IUGR were excluded from the study. Furthermore patients with previous caesarean section were not included.

After taking detailed history and performing obstetrical examination, leaking membranes was confirmed the leakage of amniotic fluid by sterile speculum examination.

Patients were randomized to the Active or Conservative groups, after full informed consent. The expectant management group was managed conservatively. After 2 hours of monitoring to rule out labor or fetal compromise. These patients were shifted to obstetrical ward to await the onset of regular uterine activity. Patients were observed till 72 hours with fetal and maternal monitoring.

Second group was managed actively. Bishop scoring performed and patient induced with vaginal prostaglandin E_2 tablet. Chi-square and students t test were used to compare the two groups.

RESULTS

Total numbers of obstetrical admissions during one year were 6398. Total no of prelabour rupture of membranes at term were 246giving frequency of 3.84%. There was no significant difference between the two groups with respect to parity P-Value is >0.05. Most of the patients in both groups were between 20-30 years of age i.e. 58% in conservative and 60% in induced group (Table 1). Majority of patient i.e. 87% belonged to lower and middle socioeconomic status Most of patients i.e. 87% were unable to decide about their mode of delivery after counseling. They left the decision on wishes of doctor. About 11% of patients opted for induction group of management. A statistically significant result P-Value <0.05% (O.R. 4.548, 95% C.I1.335-15.446) was observed regarding total cost expenditure in two groups. The total cost of stay in hospital and management was greater in induced group as compared to conservative group (Table 2). In conservative group 90% of patients delivered in 48 hrs. Whereas in induced group 23 patients delivered after 72hrs, so hospital stay was prolonged in induced group (Table 3). There were less frequent pelvic examinations in conservative group. Latent period was short in induced group i.e. 76% started uterine activity within 48 hours of PROM, as compared to 60% in conservative group (Table 4). Regarding mode of delivery, a statistically significant difference was obtained for normal vaginal delivery i.e., p-value<0.05, among 2 group. The rest i.e. vacuum, forceps and C-section had no

Table 1: Age distribution of two groups (n=100)

Age in years	Conservative		Induced		Total
	Number	% age	Number	%age	
< 20	10	20%	6	12%	16%
21-30	28	56%	30	60%	58%
> 30	12	24%	14	28%	26%
Total	50	100%	50	100%	100%

Table 2: Distribution of cases according to total cost of management (n=100)

Cost in Rs.	Conservative		Induced	
	Number	%age	Number	%age
<2000	21	42.0%	10	20.0%
2000-6000	23	46.0%	27	54.0%
>6000	6	12.0%	13	26.0%
Total	50	100%	50	100%

Odd Ratio (Conservative=2.465, Induced= 4.548); Confidence interval (Conservative=967-6.285, Induced= 1.335-15.496); P Value (Conservative=<0.05%, Induced= <0.05%)

Table 3: Distribution of cases according to stay in hospital in hours (n=100)

Stay in hospital	Conservative		Induced	
	Number	%age	Number	%age
24 hours	21	42%	12	24%
48 hours	24	48%	15	30%
72 hours and more	5	10%	23	46%
Total	50	100%	50	100%

Table 4: Distribution of cases according to rupture of membrane to delivery time (n=100)

Latent period	Conservative		Induced	
	Number	%age	Number	%age
24 hours	23	46%	18	36%
48 hours	7	14%	18	36%
>72 hours	20	40%	14	28%
Total	50	100%	50	100%

Table 5: Distribution of cases according to mode of delivery (n=100)

Mode of Delivery	Indication	Conservative		Induced		p-value	Odd-Ratio	95% C.I
		Number	%age	Number	%age			
NVD	Total	40	80%	30	60%	0.04	2.67	1.00-7.21
Vacuum	Total	3	6%	4	8%	1.00	0.73	0.10-4.61
	Poor maternal efforts	*2*		*3*				
	Fetal distress	*1*		*1*				
Forceps	Total	1	2%	5	10%	0.47	1.2	0.01-88.68
	Poor maternal efforts	*1*		*2*				
	Fetal distress	*0*		*3*				
C-Section	Total	6	12%	11	22%	0.28	0.48	0.13-1.60
	Fetal distress	*1*		*4*				
	Failed induce	*2*		*2*				
	chorioamnionitis	*3*		*5*				

Table 6: Neonatal outcome

Indication	Conservative		Induced	
	Number	%age	Number	%age
Need for Resusitation	7	14%	13	26%
Need For Antibiotics	2	4%	1	2%
Neonatal Death	Nil	Nil	Nil	Nil
Neonatal Sepsis	1	2%	1	2%
Meconium Aspiration	1	2%	Nil	Nil

statistically significant difference. However, in induced group 8% delivered by vacuum , 10% by forceps and 22% by c-section as compared to 6%, 2% and 12% in conservative group respectively. The most frequent indication for C-section was chorioamnionitis followed by fetal distress (Table 5). About 80% of patients in conservative group delivered by normal vaginal delivery as compared to 60% in induced group. Among maternal complications a statistically significant difference p-value <0.05 was seen in respect of mild Fever, which was more common in conservative group (O.R 9.33, C.I 1.15-42739). There was a difference i.e., (p-value 0.06) in occurrence of post partum haemorrhage, being more common in conservative group. Among conservative group one patient had wound infection one had depression and one went into psychosis.

There was no significant difference regarding neonatal outcome in afore mentioned groups. The details are given in Table 6.

DISCUSSION

In our study intrapartum pyrexia in conservative group was 16% as compared to 2-4% in induced group. Neonatal antibiotic requirement in our study was 4% in conservative group as compared to 2% in induced group. In our study PPH was 14% as compared to 2% in induced group. There was also decreased latent period when induced with prostaglandin E2. But the hospital stay in our study was prolonged in induced group it might be due to increased incidence of failed induction, instrumental delivery and c-section rate.

In Lahore, at Allama Iqbal Medical College, a study was conducted on 200 patients where they concluded that induction with prostaglandin E2 decreases the latent period[6]. There was decrease in intrapartum pyrexia, antibiotic requirement and PPH in induced group. No neonatal mortality was encountered in both groups. Intrapartum pyrexia in conservative group was 9% as compared to 6% in induced group. Antibiotic requirement was 20% in conservative group as compared to 14% in induced group. PPH was also more is conservative group i.e. 5% as compared to 3% in induced group. In induced group more patients that is 74% had spontaneous vaginal delivery, less number had forceps application and c-section. These results were comparable with our studies. The intervals between PROM and the onset of uterine contractions and delivery were lower in induction group than conservative group (9.6 vs. 14.8 hours; p<0.001) and (11.6 vs. 17hours ; p<0.001), respectively[6].

A study conducted on 61 patients at Aberdeen Maternity Hospital, United Kingdom showed that active management results in shorter pre-labour rupture of membranes to delivery time with significantly more patients going into labour and delivering within 24 hrs of PROM[3]. There was no difference in mode of delivery or in neonatal and maternal outcome. About 54% Women in expectant group went into active labour in <24hrs of PROM, where as 93% of induced group went into active labour in <24hrs of PROM. There was no significant difference in modes of delivery in two groups. This was comparable to our study.

A study by Flenady V et al at university of Mississippi Medical Centre studies 96 patients, in order to determine best treatment for parturients at term with an unfavorable cervix and PROM. The latent period was significantly longer (p <.01) in expectant arm than in prostaglandin group[7]. This is comparable to our study. The length of maternal hospital stay was longer in the group managed expectantly than in induced group (p <.05) which was in contrast to our study in which maternal hospital stays was longer in induced group.

There was no significant difference in neonatal outcome No statistically significant difference P-Value >0.05 was observed in respect

of perinatal outcome and infectious morbidity in babies. There was neither neonatal death nor stillbirth. Resuscitation was required in 26% of babies in induced group as compared to 14% in conservative group. About 4% of babies in conservative group required parenteral antibiotics as compared to 2% in induced group, 3 babies in conservative group admitted in Nursery. Two among them were for neonatal sepsis, whereas one was for meconium Aspiration. Among induced group only one baby was admitted in Nursery for neonatal sepsis. The results comply with a study by Javaid MK at services hospital Lahore in which there was no difference between two groups regarding neonatal morbidity and nursery admission[8].

Another study in department of obstetrics and Gynecology at Faculty of Medical Sciences Brazil by da Graca Krupa F et al compared the active management with expectant management[9]. The total number of patients were 150. Induced group had a significantly shorter latency period and shorter period of maternal hospitalization[9]. Shorter latency period is comparable to our study but maternal hospitalization in induced group was prolonged.

Another study by Akyol D et al in Turkey compared active management with conservative. It included 126 women the C-section rate was higher in group ii that is 28.4%. The rate of C-section in group was 19%. It is comparable to our study in which c-section rate in induced group is 22% whereas in conservative group is 12%[10].

Hannah ME et al studied 5041 women with PROM who were randomly assigned to active and expectant management[11]. The researchers concluded that in women with PROM, induction of labour and expectant management resulted in similar rates of cesarean delivery and neonatal infection[7]. In Hannah's sub-analysis of the intimation of term PROM study, 650 women were expectantly managed in hospital. The conclusion of this on analysis were that expectant management at home, rather than in a hospital, might increase the likelihood of adverse outcome (e.g. C-section rate, neonatal sepsis)[11].

Another study in European literature on 154 patients concluded that expectant management is safe and resulted in fewer operative deliveries[12].

CONCLUSION

There is no significant difference in neonatal outcome in both groups. Delivery time was shorter in the induced group but the total cost of management was higher in the induced group.

RECOMMENDATIONS

Conservative management of PROM at term should be viewed more positively for at least 48 hours under appropriate antibiotic cover and with active management of 3rd stage of Labor, until a large multi center trial is done.

REFERENCES

1. Savigos JM, Robinson JS, Vigneswaran R. Prelabor rupture of the membranes. In: James DK, Steer PJ, Weiner CP, Gonik B, editors. High Risk Pregnancy: management options. 3rd ed. Philadelphia: Elsevier; 2006. p. 1321-33.
2. Karim F, Mushtaq M. Term prelabour ruptures of membranes: management and outcome. Pak Armed Forces Med J 2006;56:232-8.
3. Shetty A, Stewart K, Stewart G, Rice P, Danielian P, Templeton A. Active management of term prelabor rupture of membranes with oral misoprostol. BJOG 2002:109:1354-8.
4. Tan BP, Hannah ME. Prostaglandins versus oxytocin for prelabour rupture of membranes at term. Cochrane Database Syst Rev 2000;(2):CD000159.
5. Shoaib F. Management of premature repture of membranes with unfavourable cervix at term by protaglandins. Pak J Med Sci 1994;10:228-32.
6. Ayaz A, Saeed S, Farooq MU, Ahmad F, Bahoo LA, Ahmad I. Prelabor rupture of membranes at term in patients with an unfavorable cervix: active versus conservative management. Taiwan J Obstet Gynecol 2008;47:192-6.
7. Flenady V, King JF. Antibiotics for prelabour rupture of membranes at or near term. Cochrane Database Syst Rev 2002;(3): CD001807.
8. Javaid MK, Hassan S, Tahira T. Management prelabour rupture of membranes at term, induction of labour compared with expectant. Profressional Med J 2008;15:216-9.
9. da Graça Krupa F, Cecatti JG, de Castro Surita FG, Milanez HM, Parpinelli MA. Misoprostol versus expectant management in premature rupture of membranes at term. BJOG 2005:112:1284-90.
10. Akyol D, Mungan T, Unsal A, Yüksel K. Prelabor reupture of membranes at term. Aust N Z J Obstet Gynaecol 1999;39:291-5.
11. Hannah ME, Hodnett ED, Willan A, Foster GA, Di Cecco R, Helewa M. Prelabor rupture

of the membranes at term: expectant management at home or in hospital? The TermPROM Study Group. Obstet Gynecol 2000;96:533-8.

12. Grant JM, Serle E, Mahmood T, Sarmandal P, Conway DI. Management of prelabour rupture of the membranes in term primigravida: report of a randomized prospective trial. Br J Obstet Gynecol 1992;99:557-62.

CONTRIBUTORS

SY conceived the idea, planned the study and wrote the manuscript. AY did the data collection and analysis. NNK, RK & MR helped in data collection & writeup of the study. All the authors contributed significantly to the research that resulted in the submitted manuscript.