

Pre labour Rupture of Membranes at Term: Expectant Management vs Induction of labour

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Abstract:

Objective: To determine the best approach to PROM at term. **Study design:** A randomized control trail. **Place and duration of study:** Obstetrics and Gynecology department of nishtar hospital from may 2017 to march 2018. **Methodology:** 100 women with PROM at term were selected. After consent, they were randomly assigned to expectant or induced group. Expectant group was managed conservatively while in the patients of the induced group induction of labour was done. All the data was entered on already designed Performa. Collected data was analyzed by SPSS software. **Results:** the duration between PROM to delivery was significantly reduced with a p value of <0.001 in induced group compared to the expectant group. Moreover, the difference of maternal morbidity and LSCS between induced and expectant group is not statistically significant. The difference observed in the neonatal outcomes was statistically significant showing higher rates of morbidity (asphyxia and sepsis) in the expectant group compared to the induced group. **Conclusion:** induction of labour is the best approach towards the PROM at term compared to conservative management because of remarkable decrease in PROM to delivery interval and neonatal morbidity without significant rise of LSCS and maternal morbidity. Moreover, it gives the additional advantage of maternal satisfaction and decrease hospital stay time.

Keywords: Pre Labour, Membranes Rupture, Induction.

INTRODUCTION:

the whole process starting from the beginning of regular uterine contractions till the delivery of newborn and expulsion of placenta is termed as labour (1). The leakage of amniotic fluid, due to a breach in fetal membranes forming a communication between amniotic cavity and birth canal, prior to the onset of labour constitutes the term of PROM (2, 3). About 10% of all pregnancies are complicated by breach of membranes without contractions, roughly 80% of these PROM occur at term(4, 5).

Smoking, vitamin c deficiency, amniocentesis, amnioscopy, genital tract infections (including bacterial vaginosis, trichomonas and group b streptococci), cervical dilation, overdistended uterus either due to polyhydromnias or multiple pregnancy, uterine malformation, uterine blunt force trauma, violent sexual intercourse, pregnancy induced hypertention and some congenital problems are thought to be the leading culprits of PROM(5-8). All of these factors contemplate in to weakening and damaging of membranes directly or indirectly or irritation of the uterine wall making the membrane fragile compared to intrauterine pressure, which ultimately results into PROM(3, 9).

Management of PROM is still a burning issue frequently debated among fellows. Though active management is associated with decrease incidence of sepsis and higher maternal satisfaction, but Caesarean section rates have also spiked owing to either failure of induction or hyper stimulation and fetal distress. Increase incidences of c section were reported by Kappy et al. in actively managed PROM of term pregnancies compared to expectantly managed group(10). About 60 to 70% of term PROM and an additional 20 to 30% of cases are succeeded by spontaneous onset of labour within 24 and 72 hour respectively(11). Uncertain prognosis of both mother and child along with the prolong hospitalization without any intervention can result in adverse psychological outcomes in expectant group(12). Despite of the fact that prostaglandrins (PGE1 and PGE2) can cause cervical ripening along with myometrial stimulation, induction of labour with unfavourable cervix still remains a challenge for fellows.

MATERIALS AND METHODS:

Study was conducted in Nishtar hospital, multan. A total 100 patients of term PROM were selected over a period of 10 months as per selection criteria. Women of 20 to 30 years of age with Gestational amenorrhea of

37-40 weeks, Singleton pregnancy, Vertex presentation and adequate pelvis were included included in our study. All of these women were admitted within 6 hour of PROM with no evidence of immediate contractions. Other women of less than 20 years of age or older than 30 years and gestational amenorrhea of less than 37 or greater than 41 weeks were excluded from the study. Women with multiple pregnancy, grandmultipara, medical disorders, previous LSCS, cephalopelvic disproportion, malpresentation, chorioamnionitis, meconium stained liquor or obstetric complications requiring immediate c-section were also excluded.

A thorough history and physical examination was done to include and exclude women as per decided criteria. To note presentation, fetal heart rate, bishop scoring and status of uterine contraction a proper obstetric examination was carried out. For the purpose of confirmation of leaking a speculum examination was performed and in case of any doubt pH estimation and heat test of discharge were carried out. Moreover, a cervical swab was sent for culture and sensitivity. An ultrasound and CTG performed. After informed consent, active or expectant management group was randomly assigned to patients. Flagyl (metronidazole) 500mg/100ml and oxidil (ceftriaxone) 1g was given to all the patients, irrespective of their group.

Patients in expectant group were kept under observation for 24 hours for spontaneous onset of labour. Blood pressure, pulse rate, temperature, uterine contractions, fetal heart rate and colour of liquor was monitored. Frequent vaginal examination was not done and was carried out only after feeling strong contractions to see the progress of labour. Intervention in the form of induction of labour was done where there were no proper uterine contractions after 24 hours.

Bishop's score was used to determine the mode of induction in actively managed group. For bishop's score of less than 5, misoprotol (PGE1) 25 followed by repeat dose of the PGE1 or IV oxytocin after 4 and a half hour. For Bishop's scoring of equal to or greater than 6, IV oxytocin was used diluted in normal saline and titrated to attain desired response. Pulse, blood pressure, temperature, uterine contractions, fetal heart rate and descent of fetal head was regularly monitored and recorded properly. In case of chorioamnionitis, non progress of labour, failed induction, fetal distress LSCS was carried out under emergency circumstances in either group.

Various methods of delivery like normal vaginal delivery, or assisted vaginal delivery by using forceps/ventouse, or lower segment caesarean section were studied. Evaluation of the baby was done by methods like birth weight and Apgar score etc. Followe up of both baby and mother was done in puerperium for early diagnosis of maternal pyrexia, neonatal sepsis. Proper investigation and management of problems was done. Number of deaths were also recorded if any.

RESULTS:

We included 100 patients in the study. Mean age and gestational age was 28.42 ± 4.83 years and 39.11 ± 1.26 weeks in the expectant group; and 30.14 ± 5.41 years and 39.52 ± 1.37 weeks in the induced group ($p=0.097$ and 0.115), respectively. In the expectant group, 22 (44%) patients were primigravida and 28 (56%) were multigravida as compared to 26 (52%) and 24 (48%) primi- and multigravida, respectively, in the induced group ($p=0.423$). Mode of delivery was vaginal, instrumental or LSCS in 34 (68%), 12 (24%) and 4 (8%) of the patients in the expectant group; and in 38 (76%), 4 (8%) and 8 (16%) of the patients in the induced group, respectively ($p=0.062$). Table-I

PROM to delivery interval was <12 hours in 6 (12%), 12-24 hours in 31 (62%) and 13 (26%) of the patients in the expectant group as compared to 36 (72%), 8 (16%) and 6 (12%), respectively, in the induced group ($p<0.001$). Postpartum fever and hemorrhage was observed in 10 (20%) and 3 (6%) of the mothers in expectant mothers; and 4 (8%) and 5 (10%) of the mothers in the induced group, respectively ($p=0.194$). Of the fetal outcomes, mild birth asphyxia was observed in 15 (30%) and 7 (14%); severe birth asphyxia was observed in 7 (14%) and 4 (8%); sepsis developed in 5 (10%) and 3 (6%); death occurred in 2 (4%) and 0 (0%) of the neonates in the expectant and induced groups, respectively. The difference observed in the neonatal outcomes was statistically significant ($p=0.038$). Table-II

Table. I

Demographic Variables

Variables	Expectant n=50	Induced n=50	P Value
Age (years)	28.42±4.83	30.14±5.41	0.097
Gestational age (weeks)	39.11±1.26	39.52±1.37	0.115
Parity, N (%)			
Primi	22 (44)	26(52)	0.423
Multi	28 (56)	24 (48)	
Mode of Delivery,N (%)			
Vaginal delivery	34 (68)	38 (76)	0.062
Ventose/outlet forceps	12 (24)	4 (8)	
LSCS	4 (8)	8 (16)	

LSCS= lower section cesarean section

Table. II

Variables regarding delivery

Variable	Expectant (n=50)	Induced (n=50)	P value
PROM to Delivery Interval, N (%)			
<12 hours	6 (12)	36 (72)	<0.001
12-24 hours	31 (62)	8 (16)	
>24 hours	13 (26)	6 (12)	
Maternal Morbidity, N (%)			
Fever	10 (20)	4 (8)	0.194
PPH	3 (6)	5 (10)	
Nil	37 (74)	41 (82)	
Neonatal Outcomes, N (%)			
Mild birth asphyxia: Apgar <7	15 (30)	7 (14)	0.038
Severe birth asphyxia: Apgar <5	7 (14)	4 (8)	
Sepsis	5 (10)	3 (6)	
Neonatal Death	2 (4)	0 (0)	
Nil Complications	21 (42)	36 (72)	

PROM= premature rupture of membranes, PPH= postpartum hemorrhage

Socioeconomic status, educational status, maternal age, parity **DISCUSSION** and gestational age of the women in both groups was similar and the difference between both groups was statistically insignificant. Therefore, demographic variability played a little role in the differences of outcome and difference of outcome was mainly dependent upon different management plans. In our study, vaginal delivery (both normal vaginal and assisted vaginal) took place in 92% and 84% of PROM patients in expected and induced group respectively. In our study, LSCS was done in 8% of the patients in the expectant group and 16% of the patients in the induced group but this difference was statistically insignificant. In contrast to our study, a study conducted by Shanti et al showed a lower rate of LSCS both in expectant (5.7 %) and induced group (12%) (12).

In our current study, PROM to delivery interval was <12 hours in 12%, 12-24 hours in 62% and > 24 hour in 26% of the patients in the expectant group as compared to 72%,16% and 12% in the induced group respectively. This difference of time interval was statistically significant with a p value of <0.001. Aqueela Ayaz et al, Crane et al and chaudhuri Snehamay et al also reported the decrease time interval between PROM and delivery in induced group(13-15). Our study results are comparable to a study carried out by Shah Krupa et al, in which greater than 24 hour interval between PROM and delivery was reported in 22% of expectant group and 12% of induced group (3).

In our study, postpartum fever was present in 20% and 8% of the patients of expectant and induced group respectively. In comparison to our study, Sumaira Yasmin et al had reported postpartum pyrexia of 16% in expectant and 2-4% in actively managed group (16).

In our current study, post partum hemorrhage was reported in 6% and 10% of mothers of expectant and induced group compared to kolluri et al. who reported a 6.7% of PPH in expectant and 10% of PPH in induced group. Both of these studies authenticate the fact that induction of labour is related to increase occurrence of PPH(17).

As for as the fetal outcomes, mild birth asphyxia was observed in 30% and 14%; severe birth asphyxia was observed in 14% and 8%; sepsis developed in 10% and 6%; death occurred in 4% and 0% of the neonates in the expectant and induced groups, respectively. The difference observed in the neonatal outcomes was statistically significant ($p=0.038$). In contrast to our findings regarding the morbidity of the neonates, results reported by Shetty et al, Javaid et al and Savitha et al showed no statically significant variation in neonatal morbidity among these groups(18-20). Though both of these studies showed an increase incidence of morbidity of neonates in expectant group compared to induced group but their difference was not statistically significant.

CONCLUSION:

Our study showed that induction of labour is associated with a significant shortening of PROM-delivery interval, decrease maternal and fetal morbidity without considerable rise of PPH and LSCS (as LSCS and PPH was increased in induced group but that increase was not statistically significant) .

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