RESEARCH ARTICLE

Fetal Outcome From Expectant and Active Management of Premature Rupture of Membrane

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Abstract :

Background: Premature rupture of membrane(PROM) is a condition of spontaneous rupture of membrane any time beyond 28th week of pregnancy but before onset of labour. PROM is the leading cause of preterm births, newborn complications and perinatal morbidities. Incidence of PROM occurs commonly in primigravida (62.7%) . Term PROM is higher approximately (70.92%) than preterm PROM. PROM occurs in 5-10% of all pregnancies of which approximately 80% occur at term. **Objective :** To evaluate the fetal outcome from expectant and active management of PROM. **Materials and Methods :** This is a cross-sectional study conducted in the Department of Obstetrics and Gynecology in Shaheed Monsur Ali Medical College and Hospital from January 2020 to June 2020 for a period of 6 months. During this study period 73 patients with PROM between 37-40 weeks were admitted to the hospital. Of those 37 women were selected for active management and 36 women were chosen for expectant management. Informed written consent was taken, sociodemographic and clinical data were obtained. Feto-maternal outcome were also recorded. **Results:** Mean age for group with active management was 26.08 years and that for the expectant management group was 25.61 years. Primigravida was 64.9 % among active management group and 61.1 % among expectant management group. NICU admission was 10.8% among active management group and 11.1% among expectant management group. Analysis indicated that there were no significant difference in neonatal outcome between the two groups. **Conclusion :** There was no statistically significant difference between rate of maternal and neonatal morbidity between the two groups.

Keywords: PROM (Premature rupture of membrane), preterm births, perinatal morbidities

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Introduction:

Premature rupture of membrane is defined as spontaneous rupture of membranes after 28 completed weeks of gestation but before the onset of regular, painful uterine contractions. Incidence of PROM occurs commonly among primigravida.[1] Incidence of Prom occurs commonly in primigravida (62.7%) . Term PROM is higher approximately (70.92%) than preterm PROM. [2] PROM occurs in 5-10% of all pregnancies of which approximately 80% occur at term. [3] The aetiology of PROM is multifactorial. At term, PROM can be a physiological variation rather than a pathological event. PROM occurs when intrauterine pressure overcomes membrane resistance. [4] This happens due to weakening of the membrane either congenital or acquired or because of damaging factors, either mechanical during amniocentesis or by infection. Failure of mechanical support such as cervical dilatation can lead to PROM, Other etiological factors are overdistended uterus, big baby, polyhydramnios, multiple pregnancy. Several external factors are thought to cause PROM such as drop in barometric pressure and sexual intercourse. [5]

The management of patients with PROM has changes

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markedly in the past years. Combination of better understanding of newborn physiology has improved neonatal care. Refinements in antibiotic therapy and widespread use of maternal and fetal monitoring has improved maternal and fetal outcome in PROM.[6]

Materials and Methods :

This is a cross-sectional study conducted in the Department of Obstetrics and Gynecology in Shaheed Monsur Ali Medical College and Hospital from January 2020 to June 2022 for a period of 2 years. During this study period 73 patients with PROM between 37-40 weeks were admitted to the hospital. Of those 37 women were selected for active management and 36 women were chosen for expectant management. Informed written consent was taken, sociodemographic and clinical data were obtained. Feto-maternal outcome were also recorded. The cases were selected on alternative way and divided into two groups – Group A (actively managed group) and Group B (expectantly manage group). Sample size was calculated by using Fruchure and Guilford formula considering 5% level of significance, 5% precision level and prevalence of term PROM 10%.

Results :

This was a cross-sectional observational study carried out in the Obstetrics and Gynaecology Department of Shaheed Monsur Ali Medical College and Hospital, Dhaka. The general objective of the study to observe the fetal outcome in expectant and active management in PROM. A total 73 patients with PROM within 37 to 40 weeks who admitted during the study period were included in the study and divided into two groups- Active Management (n=37) and Expectant Management (n=36) by alternative method.

Table-3.1: Distribution of study population according to age (N = 73)

Age (in years)	Active management (n = 37) No. (%)	Expectant management (n = 36) No.(%)	P value
<20	8 (21.6%)	7 (19.4%)	
20-25	9 (24.3%)	10 (27.8%)	
25-30	11 (29.7%)	12 (33.3%)	
30-35	7 (18.9%)	4 (11.1%)	
>35	2 (5.4%)	3 (8.3%)	
Total	37(100.0%)	36(100.0%)	
Mean±SD	26.08±5.79	25.61±4.87	0.708 ns

Unpaired student t-test was performed to compare between two groups ns = not significant

Table 3.1 shows the age distribution of the study patients. Majority of women in both the groups belonged to 20-25 years (29.7% and 33.3% in active and expectant management respectively). The mean age in active and expectant group was 26.08 plus/minus 5.79 years and 25.61 plus/minus 4.87 years. There was no significant difference of age between two groups (p = 0.708).

Table-3.2: Distribution of the study population according to occupation between two groups (N=73)

Occupation	Active management (n=37) No. (%)	Expectant management (n=36) No. (%)	P value
Housewife	21 (56.8%)	25 (69.7%)	
Service holder	7 (18.9%)	4 (11.1%)	0.496ns
Others	9 (24.3%)	7 (19.4%)	
Total	37 (100.0%)	36 (100.0%)	

Chi-square test was performed between two groups ns = not significant

Table-3.8: Distribution of the study population according to mode of delivery between two groups (n=73)

Mode of delivery	Active management (n = 37) No.(%)	Expectant management (n = 36) No.(%)	P value
LSCS	8 (21.6%)	12 (33.3%)	
Instrumental delivery	4 (10.8%)	6 (16.7%)	0.312ns
Vaginal delivery	25 (67.6%)	18 (50.0%)	
Total	37 (100.0%)	36 (100.0%)	

Chi-square test was performed between two groups ns-not significant

Majority of the antenatal women 67.6% patients of actively managed group and 50% of expectantly managed group were delivered through vaginal route. 21.6% patients of actively managed group and 33.3% of expectantly managed group underwent cesarean delivery. There was no significant difference found in the mode of delivery of both groups on applying chi square.

Table 3.9: Distribution of cases according to indications of caesarean section (n=20)

Indications	Active management (n = 8) No.(%)	Expectant management (n = 12) No.(%)	P value
Foetal distress	3 (37.5%)	5 (41.7%)	
Prolonged 2nd stage	2 (25.0)	3 (25.0%)	0.9195ns
Cervical dystocia	0 (0.0%)	1 (8.3%)	
Non-progress of labour	1 (12.5%)	1 (8.3%)	
Failure of induction	2 (25.0%)	2 (16.7%)	
Total	8 (100.0%)	12 (100.0%)	

Chi-square test was performed between two groups
s = significant

The most common indication of caesarean section was foetal distress. Among 8 cases in Active management group 37.5% foetal distress and 41.7% foetal distress in Expectant management group.

Discussion :

In our study, the women in both the Active management group and Expectant management group were comparable with respect to mean maternal age, gestational age, parity, educational status, socio-economic background, neonatal outcome distribution. Since their socio-demographic profile was similar, therefore, any difference in outcome in these two groups was primarily due to different management protocols and not due to demographic differences. In present study about two thirds of women were house wives. 56.8% in Active management and 69.7% in Expectant management. This finding may clarify that house wives carry heavy house duties in addition to caring for children or other family member, so they are liable to have PROM. These data are in agreement with Shetty et al. (2002) who reported -in their studies about "Occupational fatigue and preterm premature rupture of membranes"- that occupational fatigue was independently associated with a significant increased risk of PROM. El-Sayed et al. (2013) reported in active and expectant management 65.0% & 66.3% were housewives respectively. [6] In present study majority of the antenatal women 67.6% patients of actively managed group and 50% of expectantly managed group were delivered through vaginal route. 21.6% patients of actively managed group and 33.3% of expectantly managed group underwent cesarean delivery. There was no significant difference found in the mode of delivery of between two groups. In agreement with present study Shanthi et al. (2015) reported forty nine women (88.6%) in the expectant group had a spontaneous vaginal delivery as compared with 35 (70%) in the active group. [7] Yasmin et al. (2013) reported about 80% of patients in active management group delivered by normal vaginal delivery as compared to 60% in expectant management group. In present study the rate of caesarean section and instrumental delivery was high in expectant management group compared to active management group as foetal distress or prolonged labour developed in expectant management but statistically no significant difference was found (p= 0.312). This study was similar to the study done by Rawat et al. (2017), Chaudhari et al. (2006), daGraca et al. (2005). In Mukharya et al. (2018) study, percentage of spontaneous vaginal delivery was 63% in active management group and 71% in expectant management group. 20% patients of active management group and 32% patients of expectant management groups underwent caesarean section. most common indication of caesarean section was meconium stained liquor/non reassuring foetal heart rate. There was no significant difference in the present

study regarding indication of LSCS. Similar study was done by Krupa et al. (2012). [8]

In present study the most common indication of caesarean section was foetal distress. Among 8 cases 37.5% in Active management group and 41.7% in Expectant management group developed foetal distress. Javaid et al. (2008) reported indications of caesarean delivery majority were due to fetal distress both active and expectant management groups.

Conclusion :

Immediate labour induction in patients with term PROM resulted in significant shortening of latent period and PROM to delivery interval without any increase in caesarean section rate as compared to expectant management group. There was no statistically significant differences in the rate of maternal and neonatal morbidity between two groups.

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