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Original Research Article

Analysis of Cases of Premature Rupture of Membranes

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Abstract: The objective of this study is to analyze of cases of premature rupture of membrane. A prospective hospital based analytical study including 50 cases, was conducted between June 2007 to August 2008. Women fulfilling the inclusion criteria were subjected to confirmation of diagnosis of PROM by pH analysis test, ferning test, ultrasonography. Urine routine microscopy and culture and vaginal culture were done for causal diagnosis. After antibiotic prophylaxis to all, women with PROM prior to 32 weeks were given steroids and then allotted to either conservative or active management. The mode of termination in each, maternal and fetal complications and outcome, hospitalization to delivery interval, PROM-delivery interval, were analysed. Data was subjected to analysis by Chi square & 't' test. PROM far from term was associated with a higher neonatal complication rate, lower survival rate and higher maternal complication rate. A statistically significant correlation was found between PROM-delivery interval and maternal and neonatal complications. Correlation between gestational age (wks) and neonatal complications and outcome was also found to be significant.

Keywords: PROM , Antibiotic prophylaxis, PROM –Delivery interval, neonatal outcome.

INTRODUCTION:

Premature rupture of membranes is rupture of membranes prior to onset of labour. When it occurs prior to 37 completed weeks of gestation, it is termed preterm premature rupture of membranes (PPROM) and when it occurs before and around the period of viability, it is termed midtrimester PROM. The incidence of term and preterm PROM is 10% and 3% respectively. The etiology is multifactorial. Diagnosis is preliminarily by speculum vaginal examination followed by a variety of non invasive and invasive tests. Both the mother and the fetus depending on the gestational age are exposed to multiple dangers. The optimum management protocol still remains a subject of debate ranging from conservative to active intervention. Antibiotic prophylaxis is given to all and steroids prior to 32 wks in the absence of infection. In general, prognosis is good after 32 weeks of gestation in the absence of infection.

METHODS:

Study Period : June 2007-August 2008
No of Cases : 50

Selection Criteria : Pregnant women presenting with leaking.

The cases were interrogated and investigated by pH analysis, ferning test, ultrasonography, urine and vaginal swab culture. All cases received prophylactic antibiotics and those with PROM before 32 weeks were given steroids. The cases were divided into-

Group 1 : For conservative management
Group 2 : For intervention

Maternal and fetal outcome was recorded and the data was analysed statistically.

RESULT:

The incidence of PROM was 6.04%, of which 24% was term PROM, 66% PPROM and 10% midtrimester PROM.

78% were unbooked and 78% belonged to low socioeconomic class.

Common causes were PIH in 14% (7/50), cervical incompetence in 6% (3/50), severe anemia in 4% (2/50), urinary infection in 4% (2/50), multiple pregnancy, polyhydramnios in 2% (1/50) each and no cause could be documented in 56% (28/50).

The LSCS rate was 34%, 37.93% with conservative management and 28.57% with active management.

Maternal and fetal complications were 6% (3/50) and 28% (14/50) respectively.

With either line of management 76% (38/50) delivered within 48 hours and only 20% (10/50) took>72 hrs.

Table 1 depicts the statistically significant ($p < 0.01$) correlation between gestational age in weeks and neonatal complications with a higher complicationrate with lower gestation. Midtrimester PROM accounted 35.7% (5/14), PPROM for 42.8% (6/14) and term PROM for 21.4% (3/14) of complications.

Table-1: Correlation between gestation age (wks) and neonatal complication

GA	Neonatal Complications				Total	
	Yes		No			
(wks)	No	%	No	%	No	%
20-24	2	14.3	0	0	2	4
22-28	3	21.4	0	0	3	6
29-32	3	21.4	9	25	12	24
33-36	3	21.4	18	50	21	42
37-40	3	21.4	9	25	12	24
Total	14		36		44	

Table 2 shows satistically significant correlation between gestational age and fetal outcome. Survival with midtrimester PROM was 0% (5/5 deaths), 90% (3 deaths out of 33 cases) with PPROM and 100% (no deaths) with term PROM.

Table 2: Correlation between GA and fetal outcome

GA	fetal outcome				Total	
	Died		Live Born			
(wks)	No	%	0	%	No	%
20-24	2	25	0	0	2	4
22-28	3	37.5	9	0	3	6
29-32	3	37.5	21	21.4	12	24
33-36	0	0	12	50	21	42
37-40	0	0	0	28.6	12	24
Total	8		42		50	

Table 3shows the statistically significant correlation between PROM- Delivery interval and maternal complication with 66.67% (2/3) occurring with interval > 72 hrs.

Table 3: Correlation between PROM delivery interval and maternal complications

PROM Del.	Maternal Complications				Total	
	Yes		No			
Interval (Hrs.)	No	%	No	%	No	%
<12	0	0	12	25.5	12	24
12-24	1	33.3	15	31.9	16	32
25-48	0	0	10	21.3	10	20
49-72	0	0	2	4.3	2	4
> 72	2	66.7	8	17	10	20

Table 4 shows the statistically significant correlation between PROM delivery interval and neonatal complication rate, 64.3% (9/14) occurred when interval was > 24 hrs.

Table 4: Correlation between PROM delivery interval and neonatal complications

PROM Del.	Neonatal Complications				Total	
	Yes		No			
Interval (Hrs.)	No	%	No	%	No	%
<12	1	7.1	11	30.6	12	24
12-24	4	28.6	12	33.3	16	32
25-48	3	21.4	7	19.4	10	20
49-72	0	6	2	5.6	2	4
> 72	6	42.9	4	11.1	10	20

Table 5 shows the statistically significant correlation between PROM delivery interval and fetal outcome. 75% (6/8) of fetal deaths occurred with interval >24 hrs and only 25% (2/8) with interval < 24 hrs.

Table 5: Correlation between PROM delivery interval and fetal outcome

PROM Del.	Live born		Died		Total	
Interval (Hrs.)	No	%	No	%	No	%
<12	11	26.2	1	12.5	12	24
12-24	15	35.7	1	12.5	16	32
25-48	8	19	2	25	10	20
49-72	2	4.8	0	0	2	4
> 72	6	14.3	4	50	10	20

DISCUSSION

The incidence of PROM in the study was 6.04% with a higher (78%) association with low socioeconomic class which was consistent with the works of Sarah E. Ferguson *et al*[1].

There was a higher LSCS rate (37.93%) with conservative than active management (28.57%) which was in contrast to Hannah *et al*[2] and Naef III RW [3] who found a similar LSCS rate with both strategies.

Oxytocin was found to be the most successful ecobolic agent with vaginal delivery rate of 77.8% as supported by Mary Hannah *et al*[2].

Chorioamnionitis was found in 33% similar to findings of C.Yang *et al* [4] who reported an incidence of 37%.

Neonatal respiratory complication rate was lower (12%) than that reported by Nilli and Shams A.A. Ansar[5].

A higher incidence of sepsis (10%) was found in our study as compared to Dreyfus M. *et al*[6].

Perinatal survival rate was 93.3% which was much higher than that reported by Lee C. Yang *et al*[4](52%) as they included abortion as well but was consistent with works of Moretti[7]& Beydoun[8].

76% women delivered within 48 hrs of PROM which is in acccordance with Cammu *et al* [9] and Dreyfus M. *et al*[6] that 80-90% deliver within 24-48 hrs of PROM.

PROM far from term is associated with a higher neonatal complication rate, lower survival rate and higher maternal complication rate. This is consistent with the works of Beydoun and Yasin[8] and Lee C. Yang *et al*[4], Schlievert *et al*[10] and Blanco J.B. *et al*[11].

A statistically significant correlation was found between PROM delivery interval and maternal and neonatal complication rate which is support by the works of Linder *et al*[12], Gunn *et al*[13], Johnson *et al*[14] that increase in latent period significantly increases the neonatal morbidity and mortality.

CONCLUSION

This study helped us in emphasisng the importance of judicious timely intervention in cases of PROM to decrease the maternal and neonatal morbidity and mortality.

REFERENCES

1. Ferguson SE, Smith GN, Salenieks ME, Windrim R, Walker MC. Preterm premature rupture of membranes: nutritional and socioeconomic factors. Obstetrics & Gynecology. 2002;100(6):1250-6.
2. Hannah ME, Ohlsson A, Farine D, Hewson SA, Hodnett ED, Myhr TL, Wang EE, Weston JA, Willan AR. Induction of labor compared with expectant management for prelabor rupture of the membranes at term. New England Journal of Medicine. 1996;334(16):1005-10..
3. Naef III RW, Albert JR, Ross EL, Weber BM, Martin RW, Morrison JC : Premature rupture of membranes at 34-37 weeks gestation : Aggressive versus conservative management. Am. J. Obstet. Gynecol. 1998; 178: 126-30.
4. Yang LC, Taylor DR, Kaufman HH, Hume R, Calhoun B. Maternal and fetal outcomes of spontaneous preterm premature rupture of membranes. The Journal of the American Osteopathic Association. 2004;104(12):537-42.
5. Shams AA Ansari, Nilli F. Neonatal comlication of premature rupture of membranous. Acta Medica Tranica 2003, 41 (3) : 175-179.
6. Dreyfus M, Baldauf JJ, Boesinger F, Tissier I, Andrianivo J, Lehmann M, Ritter J. [Premature rupture of membranes at term. Retrospective study of 88 cases]. Revue francaise de gynecologie et d'obstetrique. 1994;90(5-6):275-80.
7. Moretti M, Sabai BM. Maternal and perinatal outcome of expectant management of PROM in midtrimester. Am J. Obstet Gynaecol; 1998; 59:390-396.
8. Beydown SN, Yasin SY. Premature rupture of membranes before 28 wks. Conservative management. Am J. Obstet. Gynecol. 1986; 155: 471-79.

9. Marowitz A, Jordan R. Midwifery management of prelabor rupture of membranes at term. Journal of Midwifery & Women's Health. 2007;52(3):199-206.
10. Schlievert P, Johnson W, Galask RP; Bacterial growth inhibition by amniotic fluid, VI : Evidence fore inopeptide antibacterial system. Am J. Obst. And Gynae 1976;125:906.
11. Blanco JD, Gibb RS, Krebs CF, Castaneda YS. The association between absence of amniotic fluid bacterial inhibitory activity and intra-amniotic infection. Am Hobstet Gynaecol, 1982; 143:749.
12. Linder N, Ohel G, Gazit G, Keidar D, Tamir I, Reichman B. Neonatal sepsis after prolonged premature rupture of membranes. J Perinatol, 1995;15(1):36-38.
13. Gunn GC, Mishel, Mortor DG; Premature Rupture of Membrances; A review. Am J. Obstet. Gynaecol, 1970; 106:469.
14. Johnson JW, Daikoku NH, Niebyl JR, Johnson Jr TR, Khouzami VA, Witter FR. Premature rupture of the membranes and prolonged latency. Obstetrics & Gynecology. 1981;57(5):547-56.