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Short Report

A Study of Feto-Maternal Outcome in Patients with Prelabour Rupture of Membranes at Term (>37 Weeks)

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Abstract

To determine the fetomaternal out come in patients with premature rupture of membrane after 37 completed weeks, but before onset of labour. Prospective case control study of 66 patients. Incidence of PROM was 8.09 % during study period, 1.79 % applicable for study. No correlation found between PROM and delivery interval and mode of delivery. No correlation between mode of delivery and gravida status and labour induced with Misoprostol or not. 54.5 % (36) induced with Misoprostol 25µg and more, 7 (10.61%) developed minor side effects, like nausea in 6 (9.09%) patients and vomiting and fever (100.2ºF), 5(7.58%) patient. No significant difference in mode of delivery in cases and control. Mean PROM-delivery interval 11.67 hrs in induced versus 8.05 hrs in spontaneous group. Hospital stay in cases was 6.87 days, is higher in study group compare to controls, mostly due to antibiotics given to baby, so mother was kept ward. Neonatal CRP is significantly higher around 30.30 % & almost all required antibiotics. 20 babies had CRP and 2 had raised total count in case group. Only 1 baby in the case with MBA, kept in NICU for observation for one day. These are not comparable due to small sample size in the study.

Key words: PROM, Fetomaternal outcome, induction of labour

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Introduction

Spontaneous rupture of membranes at any time beyond 28th week of pregnancy but before 37 weeks is called prelabour rupture of membranes (PPROM) and when it occurs after 37 completed weeks but before onset of labour k/a PROM. Most Indian studies document incidence of 7 to 12 % for PROM of which 60-70% occurs at term.

PROM can cause maternal complications, increased operative procedures and neonatal morbidity and mortality. Increasing the obstetrician's trouble where better neonatal care, strict asepsis is followed and appropriate antibiotics are used when necessary. If unrecognized / inadequately treated it can lead to maternal chorioamnionitis. Neonatal complications include higher Incidence of non reassuring CTG patterns (7.9%) due to cord compression subsequent to leaking and higher incidence of sepsis. It can cause dilemma for diagnosis also. The causes may be: Genetic factors, Intra amniotic infection leads to increased bacterial invasion also causes secretion of cytokines and chemokines, that causes increase in proteolytic enzymes, with elevated IL-6. In literature, positive amniotic culture of these cases varies from 14.6% to 38.0%. The mechanism of ascending infection is not clear. Colonization of lower genital tract by Chlamydia, Neisseria gonorrhea, Group B Streptococcus, Trichomonas and Bacteriods have been found to increase the risk of PROM.

The cause of PROM is mostly difficult to establish. Nutritional as Vitamin C, tobacco smoking, cervical incompetence, ante-partum hemorrhage, trauma, polyhydramnios, multiple gestation and idiopathic may contribute.

Aim of this study was to evaluate the incidence of PROM, induction required, the effect of vaginal PG E1 (Misoprostol), the maternal and perinatal morbidity and mortality in cases of PROM and to compare with controls.

Material and Methods

This prospective case control study was conducted over one year from July 2007 to April 2008 at Sri Sayaji General Hospital, attached with Medical College, Baroda. All patients of PROM at term were studied and matched against suitable controls of women during the same period according to predesigned proforma. On admission detailed history was taken, in whom LMP not known gestational age confirmed by USG. Menstrual and Obstetric, Personal, Past and Family history were taken. General and Systemic examination were done including Per Abdomen, Per Speculum and per vaginum carried out and investigations were done as per protocol. Diagnosis of PROM was confirmed by any of this method. Leaking was demonstrated by P/S examination, pH Test and Fern Test. On admission P/V done and Bishop's Scoring done and correlated with duration of PROM to decide management like induction. Continuous monitoring of maternal and fetal condition done, antibiotics was given intra/ post natal period. P/ V exam were done when necessary. Neonatal management: CRP and Blood culture were taken in all cases of PROM >18 hours or those with signs and\or symptoms suggestive of Early Neonatal Sepsis and even with lesser hours of PROM. Those who had only CRP positive, injectable antibiotics were started and given for 7 days and those with blood culture positives antibiotics were given for 14 days. Antibiotics were changed depending upon culture and sensitivity reports and if no clinical response with above mentioned antibiotics. Cases and controls were followed as per protocol. Investigations done and maternal and fetal outcome were noted, for sepsis, rashes, or fever also.

Statistical analyses were performed EPIINFO version 6.04 D. All categorical data were reported as number and percent.

Table 1. Incidence of PROM

Total number of confinements during study period	3681
Total number of cases with PROM	298 (8.09%)
Total number of cases with PROM applicable in study	66 (1.79%)

Table 2. Distribution of cases

	Cases	Controls
Emergency	24	28
Booked	18	22
Referred	24	16
Total	66	66

Table 3a. Mode of delivery-A.

PROM to delivery interval	Vaginal			LSCS	Total
	Normal	IVD	Total		
≤ 6 hours	03		03		03
6-11 hours	09		09	5	14
12-17 hours	14		14	3	17
18-23 hours	11	3	14	2	16
≥24 hours	12		12	4	16
Total	49	3	52	14	66

Table 3b. Mode of delivery-B.

Mode of delivery	Vaginal			LSCS	Total
Type	Normal	IVD	Total		
Spontaneous	23	01	24	06	30
Induced	26	02	28	08	36
Total	49	03	52	14	66

Table 3c. Mode of delivery-C.

MOD	Vaginal			LSCS	Total
Gravida	Normal	IVD	Total		
Primigravida	28	2	30	9	39
Multigravida	21	1	22	5	27
Total	49	3	52	14	66

Table 4. Misoprostol dose requirement side effects

Total dose of Misoprostol in micrograms	Total number of cases
25	8
50	10
75	13
≥ 100	5
Total	36

Table 5. Mode of delivery in cases and controls

	Vaginal			LSCS	Total
	Normal	IVD	Total		
Cases	49	3	52	14	66
Controls	52	2	54	12	66
Total	101	5	106	26	132

Table 6. Total duration of Hospital Stay

	Average stay in hospital in days	Induced	Spontaneous
Cases	5.99	6.87	5.12
Controls	4.36		

Table 7. Feto–Maternal outcome

Outcome	Cases			Controls
	Spontaneous	Induced	Total	
Maternal -				
Nausea/vomiting	3	6	9	
Fever	2	5	7	2
TC raised	-	2	2	0
CRP Positive	1	2	3	0
AF C\S and Gram stain	0	-	-	-
Wound Gap - LSCS -Episiotomy	- 1	 1 2	 1 3	 0 1
Neonatal -				
CRP Positive	9	11	20	3
Blood C\S Positive	3	3	6	2
Antibiotics given	13	15	28	6
MBA\SBA	1	1	2	-
Conjuctival discharge	-	-	-	-

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Results and Discussion

Overall incidence of PROM was 8.09 % in our hospital during study period,which is comparable with other 7-12%. The distribution of cases whether they are emergency, booked or referred was statistically not significant in the study. 80% of the Term PROM cases enter in labour spontaneously within 24 hours and 95% within 72 hours .in our study 45.45% delivered spontaneously, 75.75 % delivered within 24 hours of PROM. There is no correlation with PROM delivery interval & mode of delivery in the study. Also there is no correlation of mode of delivery with gravida status of the patient and whether labour was induced with Misoprostol or not. 54.55% (N=36) cases were induced with Misoprostol. 10.61% (N=7) patients developed side effects, all of which were minor consisting of nausea in 9.09 (N=6) % patients & vomiting and fever (100.2ºF) in 7.58% (N=5) patient.

Mean PROM-delivery interval 11.67 hrs in induced versus 8.05 in spontaneous group. Hospital stay in cases was average 6.87 days, was significantly higher in study group as compare to controls and mostly it was due to antibiotics given to baby due to which mother was kept in ward for baby's antibiotics treatment only. Neonatal CRP positivity rate was around 30.30 % and consequently antibiotics given to all of them which were significantly higher in cases.

20 cases had CRP positivity and 2 had raised total count, only 1 baby in the study group was moderate birth asphyxia, for which baby was kept in NICU for observation for one day. These all can not comparable due to small sample size in the study. However if cervical dilatation and effacement are towards poor side than induction with mechanical methods and now more commonly prostaglandins for induction of labour are used along with above measures. More and more institutions worldwide now accept the early induction in cases of PROM to improve perinatal outcome. Definite diagnosis of PROM has to be established in certain cases without delay with the most simple and accurate methods available. In the early 20th century Gold et al test to detect PROM on the principle of change in vaginal pH from acidic to alkaline with leaking of Amniotic fluid.

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