

Obstetric Outcomes In Premature Rupture Of The Membrane (Prom)

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Citation

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Abstract

Premature Rupture Of The Membrane PROM is significant obstetric problem and is important cause of maternal and neonatal morbidity. The etiology, pathogenesis, management and prevention of PROM are still burning problems.

AIMS

: The main aims of present study were to understand incidence, etiopathogenesis, subsequent course of pregnancy, neonatal morbidity and mortality, maternal morbidity and mortality in case of PROM and its effective management and prevention strategy.

MATERIALS AND METHODS:

This study was carried out in the Obstetric and Gynecology Department of Guru Gobind Singh Hospital, M.P.Shah Medical College Jamnagar, Gujarat, India where 7372 deliveries during the study period were considered.

RESULTS:

There were 384 cases of PROM giving incidence of 5.2%. The incidence of PROM was higher in case of rural, young, primigravida patients. PROM more commonly occurred after 37 weeks and majority of patients delivered vaginally. The indications for LSCS were mainly fetal distress and non progressive first stage. Patients were managed aggressively and 355 (92.5%) of them were delivered within 24 hours. Maternal morbidity was 3.12% and maternal mortality was 0.26%. Neonatal morbidity was 3.38% and neonatal mortality was 2.86%. The majority of neonatal deaths occurred in preterm infants and newborns with low birth weight.

CONCLUSIONS:

PROM was associated with low birth weight and prematurity and thus led to high perinatal mortality. Maternal and neonatal morbidity were also increased. A proposed plan of "Aggressive management" irrespective of term of gestation is final answer to decrease maternal and neonatal morbidity and mortality.

INTRODUCTION

Premature rupture of membranes (PROM) remains a subject of great clinical relevance and intense interest and is day to day problem for each and every obstetrician. Despite exhaustive research, most aspects of PROM remain enigmatic. The mechanism of PROM is unknown, no standards for diagnosis exist and most facets of management are controversial. PROM is a major cause for prematurity which leads to increased perinatal morbidity and mortality. As prevention of PROM is difficult due to obscurity of etiology, one has to concentrate more on management of PROM to reduce its complications. Ultimate goal of obstetrics is a pregnancy that results in healthy infant and minimally traumatized mother. This study was aimed to understand incidence, etiopathogenesis, subsequent course of pregnancy, neonatal morbidity and mortality, maternal

morbidity and mortality in case of PROM and its effective management and prevention strategy.

MATERIALS AND METHODS

This was a prospective study carried out from August 2009 to August 2010 at Guru Gobindsingh Hospital, M.P.Shah Medical College, Jamnagar, Gujarat, India.

All patients were admitted and selected on the following criteria.

EXCLUSION CRITERIAS:

All patients were admitted and detail history was taken. Thorough clinical examination and necessary laboratory investigations were done. Per-speculum examination was done to confirm diagnosis. Presence or absences of membranes were noted. Pre-induction Bishop's score was

noted in all cases. After written consent induction of labor was done with Foley’s catheter. After expulsion of catheter, if satisfactory cervical dilatation and effacement did not occur PGE₂gel application was done. All patients were assessed after 6 hours and 12 hours of gel instillation and corresponding Bishop's score were noted. Observation was made regarding the mode of delivery. The babies were observed just after birth, Apgar score was recorded at 1 and 5 minutes. Baby was examined for maturity and any congenital anomaly and followed up till discharge. All the puerperium patients were observed for any adverse outcomes.

OBSERVATIONS AND RESULTS

The observation tables of 384 cases of PROM admitted in G.G Hospital, M.P.Shah Medical College, Jamnagar, Gujarat, India.

Figure 1

TABLE – I: INCIDENCE OF PROM

Total number of birth in duration of study	7372
Total No. of PROM cases	384
Percentage	5.2%

Figure 2

TABLE – II : AGEWISE DISTRIBUTION OF PATIENTS (N-384)

Age groups	No. of patients	Percentage
15 - 20	76	19.8%
21 - 25	228	59.4%
26 - 30	70	18.2%
> 30	10	2.6%

Figure 3

TABLE – III: GRAVIDITY (N-384)

Gravidity	No. of patients	Percentage
Primigravida	233	60.7%
Multigravida	151	39.3%

Figure 4

TABLE – IV: GESTATIONAL AGE (N-384)

Gestational age in weeks	No. of patients	Percentage
Preterm (28-36 weeks)	44	11.5%
Term (≥ 37 weeks)	340	88.5%

Figure 5

TABLE – V: ASSOCIATED CONDITIONS

Associated conditions	No. of patients	Percentage
Anemia	15	3.90%
PET	19	4.94%
Rh negative	09	2.34%
RVD positive	02	0.52%
HBsAg positive	02	0.52%
Nestroff positive	01	0.26%
Bronchial asthma	01	0.26%
Pulmonary TB	01	0.26%
Diarrhea	08	2.08%
Fever	09	2.34%

Figure 6

TABLE – VI: MATERNAL MORBIDITY

Morbidity	No. of patients	Percentage
Post partum fever	11	2.86%
Abdominal distension	01	0.26%
Total	12	3.12%

Figure 7

TABLE – VII: NEONATAL OUTCOME

<i>Outcome</i>	<i>Present study</i>
Birth Weight	
1.0 – 1.5 kg	0.25%
1.6 – 2.0 kg	7.55%
2.1 – 2.5 kg	43.8%
> 2.5 kg	48.4%
Apgar Score	
Below normal	3.9%
Normal	96.1%

Figure 8

TABLE – VIII: NEONATAL MORBIDITY

<i>Morbidity</i>	<i>No. of patients</i>	<i>Percentage</i>
septicemia	03	1.04%
RDS	07	1.56%
TTN (Transient tachypnea of newborn)	01	0.26%
Neonatal jaundice	02	00.52%
Total	13	03.38%

Figure 9

TABLE – IX: NEONATAL MORTALITY

<i>Gestational age</i>	<i>PROM delivery interval</i>	<i>Wt. in Kg.</i>	<i>Cause of death</i>
30 weeks	26 hrs	1.3 kg	RDS with prematurity
38 weeks	8 ½ hrs	2.75 kg	Birth asphyxia (septicemia)
38 weeks	10 hrs.	3.2 kg	Birth asphyxia
40 weeks	7 hr	3.25 kg	Perinatal asphyxia and HIE
40 weeks	10 hr	2.3 kg	Perinatal asphyxia with 3 tight loops of cord around neck
40 weeks	35 hr	3.0 kg	RDS
34 weeks	6 hr	1.8 kg	RDS with prematurity
30 weeks	10 hr	1.6 kg	RDS with prematurity
30 weeks	31 hr	1.6 kg	RDS with prematurity
32 weeks	10 hr	1.5 kg	RDS with prematurity
28 weeks	18 hr	1.5 kg	RDS with prematurity
OVERALL MORTALITY	11(2.86%)		

RDS = Respiratory distress syndrome

DISCUSSION

The incidence of PROM was 5.2% (Table I). 237 (61.7%) patients came from rural area and 147 (38.3%) were from urban area. The PROM was frequent among patients belonging to low socioeconomic class. Residential area definitely makes difference in incidence of PROM. In rural area because of unhygienic conditions, there are more chances of infection, which is an independent risk factor for PROM^(1,2,3,4). Lower socio-economic condition also predispose to malnutrition. The maximum incidence of PROM (77.6%) was between age group off 21-30 years, being highest in 21-25 year group (Table II). It was evident that no age was immune for PROM. The apparent higher incidence of PROM in age group 21-25 years was due to fact that our patients complete their child bearing in 3rd decade. The incidence of PROM was 60.7% in primigravda while it was 39.3% in multigravida patients (Table III).340 (88.5%) cases were associated with term PROM while incidence of preterm PROM was 11.5% (Table IV). In the present study 18.17% cases were associated with some other disorders of

pregnancy like anemia, PET and Rh negative pregnancy. In anemia, the chances of infections are more thus there are more chances of PROM. The conditions which cause irritation of uterus may lead to preterm labor or PROM. In present series due to diarrhea and fever 17 (4.42%) cases developed PROM (Table V). All patients were managed aggressively. Out of 384 patients 355 (92.5%) patients were delivered within 20 hours. Only 29 (7.5%) patients were delivered between 21-48 hours. No patient in this study was delivered after 48 hours. Normal vaginal delivery was the commonest mode of delivery (338 cases, 88. %), while instrumental delivery rate was only 0.5 % (2 cases) and caesarean section rate was 11.5% (44 cases). The common indications of LSCS were fetal distress in 1st stage of labor (50.0%)⁽⁵⁾ and failure to progress in 1st stage of labor (31.8%). Maternal morbidity was 3.12% in form of post partum fever and abdominal distension (Table VI). From these patients, 11 (91.7%) patients had PROM delivery interval of more than 20 hrs. All these patients were treated with broad spectrum antibiotics for 7 days. Maternal morbidity increased with increased PROM delivery interval. 98 (51.6%) babies were 2.5 kg or less, and 186 (48.4%) neonates were more than 2.5 kg (Table VII). So, it was evident that PROM was associated with prematurity and low birth weight. 15 neonates (3.90%) had low Apgar score at 1 and 5 minutes (Table VII). Out of these 15 neonates having low Apgar score, 11 expired in neonatal period. There were no ante partum or intrapartum fetal deaths. Out of 384 newborns, 11 (2.9%) neonates expired in neonatal period. Perinatal mortality was 2.86%. 13 (3.38%) neonates had developed morbidity (Table VIII). Out of them 2 (0.52%) babies died. From these 13 neonates 9 newborns had low birth weight and had gestational age of less than 37 weeks. So, neonatal morbidity increases significantly in prematurity and low birth weight. Neonatal mortality was 2.86%. 7 neonates expired from RDS and 4 neonates expired from birth asphyxia. Out of them 6 babies were preterm having birth weight of less than 2 kgs and expired due to prematurity and RDS. 4 babies expired from perinatal asphyxia and 1 baby from RDS. (Table IX).

SUMMARY AND CONCLUSIONS

As the etiology of PROM remains obscure, prevention is difficult and so one has to concentrate more on its management. The ultimate goal of obstetrics is a pregnancy that results in healthy infant and minimally traumatized mother. The art of good obstetric care involves balance of

avoiding caesarean section with its attendant complications. Women who are given aggressive management have less chances of chorioamnionitis, neonatal infection and morbidity and thus less hospital stay. There is increased maternal morbidity with PROM, but with availability of broad-spectrum antibiotics, it has decreased. Maternal morbidity is directly related to PROM delivery interval. It would appear that the optimal condition for perinatal survival in a pregnancy complicated by PROM would be a birth weight greater than 2000 grams and a latent period less than 24 hrs in absence of any infection. Therefore the delivery should be within a reasonable period of time. PROM is one of the major associated factors in prematurity and thus leading to high perinatal mortality. Neonatal morbidity is also increased by PROM due to prematurity. Looking after a premature infant puts immense burden on the economic and health care resources of the country. Therefore risk scoring strategies involving the demographic variables along with previous history of preterm deliveries should be developed to identify high risk cases and treating them prior to rupture of membranes. PROM is much more detrimental to baby rather than to mother the fact that has altered the management of PROM in modern obstetrics. A proposed plan of "Aggressive management" irrespective of term of gestation is final answer to decrease maternal and neonatal morbidity and mortality⁽⁶⁾.

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