

Incidence and Management of Chorioamnionitis in Cases with Preterm Rupture of Membranes.

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This study was carried out to evaluate the efficacy and time gained by expectant management and related complications in cases with Preterm rupture of membranes (PROM) and the incidence of chorioamnionitis. This included prospective study of 35 cases with PROM, in labour, with no signs or symptoms of chorioamnionitis and with no contraindications to conservative management, Over a period of 33 months from March 1993 to December 1995. Incidence of PROM was found to be 0.2% of all hospital deliveries. Previous history of PROM was evident in 8.57% of patients and 17.14% of patients had fever due to other causes. High vaginal swab revealed E.Coli as most common organism in 22.85% of cases. Antibiotics were not prescribed in 42.85% of patients, while 25.75% cases received ampicillin alone. Prolongation of pregnancy achieved was 38 days in one (2.85%) case, who delivered a fetus with pressure deformities. Another patient had 30 days prolongation with conservative management with no complications. Ten patients developed clinical chorioamnionitis. Eighty percent patients had spontaneous delivery and 20% underwent caesarean section. None of the new born babies developed sepsis. Only 2 patients developed postpartum fever. Expectant and conservative management can be adopted safely in cases with PROM along with meticulous fetal and maternal monitoring and without extra risks to the fetus or the mother.

Key words: Preterm rupture of membranes, Chorioamnionitis.

Preterm rupture of membranes (PROM) is an uncommon but important obstetric complication and its incidence varies between 30 and 40% for all deliveries¹. The Cause is usually not known, however an infectious etiology is suspected in most of the cases². Other factors include membrane defects³, deficiency of Vit C⁴ and Zinc⁵.

Controversies exist in diagnosis, management, and prognosis. Selective conservative management is currently favored over active intervention in uncomplicated cases⁶. This entails meticulous fetal and maternal monitoring until initiation of labour and / or chorioamnionitis. Amniotic fluid (AF) is subjected to culture and sensitivity tests. The presence of a positive gram stain or AF culture is considered an indication for prompt delivery⁷.

Factors now thought to have more bearing on the incidence of chorioamnionitis include ascending infection, maternal predisposition to infection, frequency of digital cervical examination and bacterial colonization of AF. It increases neonatal infection to 8.7%⁸. The role of corticosteroids, tocolytics and antibiotics is controversial having their risks and benefits. Several randomized trials of antibiotics in the presence of PROM have demonstrated benefits in terms of pregnancy prolongation and / or fetal morbidity⁹. However their use should be restricted to selected patients.

Material and Method:

The aim of this study was to evaluate efficacy of expectant management of PROM between 28 and 37 weeks of gestation in patients without labour or chorioamnionitis and with no immediate indication for induction, to observe the time gained by the patient on conservative management and to find out the incidence of chorioamnionitis with this management. Fetal and

maternal complications were also evaluated.

Expectant management in these patients included patient counseling, initial hospitalization, assessment of fetal heart rate abnormalities, onset of chorioamnionitis and labour. Bedrest was advised,

Cervical swabs were taken for culture studies and vaginal examination was prohibited. Total and differential leukocyte counts and C-Reactive protein estimations were carried out for detection of clinical and sub clinical infection. Ultrasound scanning was performed in every case for determination of fetal well being, evaluation of fetal anomalies and estimation of amniotic fluid index. None of the patients received prophylactic antibiotics, tocolytics and steroids. Vaginal delivery was the plan in all cases. Caesarean section was reserved only for obstetric reasons.

Results

Thirty-five patients were enrolled during the study period. The mean age of the patients was 25.74 years. Majority of patients were nullipara and primipara. Thirty (85.71%) patients belonged to poor socioeconomic status.

The incidence of PROM in this study was found to be 1.02% of all deliveries. For period of gestation at the time of PROM see Table No. 1. History of PROM in previous pregnancies was evident in 8. 57% of cases. Scanty liquor was revealed in only 40% of cases on ultrasonography (USG). Duration of rupture of membranes is evident by Table No. II.

Hypertension was the most common associated medical disorder in 4 (11.42%) of cases. Diabetes mellitus and UTI was present in one case each. The results of high vaginal swab (HVS) bacteriological study are evident by Table No. III, E.Coli being the most common organism.

Leucocytosis was evident only in 22.85% of patients

In this series 42.85% of cases received no antibiotics. However in remaining cases, the most common used antibiotic was ampicillin (alone in 25.71% patients), with either positive AF cultures, or clinical chorioamnionitis. Table No. IV highlights the prolongation of pregnancy achieved in these cases. Maximum period achieved was 38 days in one patient who later on delivered a fetus with pressure deformities who died 2 hours after birth. Another patient with 30 days prolongation of pregnancy delivered an alive and healthy fetus. Mild oligohydramnios did not have a major impact on further fetal growth as it recovered by time.

Ten (28.57%) patients developed clinical chorioamnionitis, while receiving antibiotics during conservative management. Eighty percent patients had vaginal delivery and 20% underwent caesarean section for obstetric reasons. Neonatal outcome is revealed by table V. None of the newborns developed sepsis. Only 2 patients had postpartum fever and were recovered completely after adequate antibiotic cover. No other complications were noted.

Discussion:

PROM is one of the most common complications of pregnancy that has major impact on maternal and neonatal health, so proper diagnosis and management is of prime importance to achieve optimum outcome.

The management of a patient with PROM is controversial as regards to active intervention, use of antibiotics, steroids and tocolytics¹⁰. In the absence of labour, amnionitis, or fetal compromise, expectant management is a reasonable alternative to permit fetal weight gain and lung maturation¹¹.

We, in this series, prohibited digital vaginal examination, as it may shorten the latency period significantly by introduction of infection¹². High vaginal swab (HVS) was the basic test for evaluation of chorioamnionitis. Patients with positive AF gram stain, who fail to show any growth on a culture usually do not develop infection if the fetuses are delivered promptly.

We restricted the use of antibiotics in selected cases only and did not use steroids or tocolytics. This has been practiced widely in 1950,s and was again adopted during 1970,s. Most obstetricians today elect such management. However a subsequent study by Morales and coworkers (1989) revealed the benefit of steroids and antibiotics to decrease respiratory distress syndrome (RDS)¹³.

Our study showed clear benefits for the expectant management in terms of pregnancy prolongation (table IV) and neonatal outcome (table V). It also suggests that favourable maternal and neonatal outcome can be achieved without the use of tocolytics, steroids and prophylactic antibiotics. These results are in accordance with the results of study performed by Phillipson EH et al¹⁴. Another study by Matsuda et al concluded that tocolysis and antibiotics are not effective in PROM¹⁵.

The maternal complication from such management perspective is that of chorioamnionitis, the incidence of which, in general obstetric population is between 0.5 and 1.0%¹⁶. With PROM its incidence increases to 3.0 to 31%¹⁷. Incidence in our study was 28.57% and developed in patients already on antibiotics for positive AF cultures. The principle of management in such cases is delivery and antibiotics. Vaginal delivery is clearly the best route.

Renewed accumulation of AF may imply that the woman can return home with a reasonable degree of safety, although this has never been assessed in a controlled comparison. We managed our patients initially at hospital and subsequently at home without compromise in quality of neonatal survival.

Careful attention to identifying this problem, its complications and individualizing management holds the greatest hope for optimizing outcome in patients with PROM.

Conclusion:

The reevaluation during the past decade of this important clinical syndrome of pre-labour PROM reflects its significance. An expectant approach can be adopted almost indefinitely along with careful clinical monitoring. The benefit to the fetus, of prolonging the pregnancy in cases of PROM is immensely worthwhile and should be aggressively pursued if not contraindicated. The point at which expectant management must be replaced by active intervention varies with each specific patient.

Table 1. Duration of pregnancy

Weeks	n=	%age
28-30	10	28.57
31-32	4	11.4
33-39	11	31.4
35-36	2	5.7
37-38	8	22.85

Table 1. Duration of PROM

Hours	n=	%age
Less than 24	17	48.57
25-48	7	2.0
49-72	1	2.85
More than 72	10	28.57

Table 3. Duration of pregnancy

Organisms	n=	%age
E. Coli	8	22.85
E.Coli	+ 1	2.85
Pseudomonas		
Proteus	+ 1	2.85
Pseudomonas		
Staph-Aureus	2	5.71
Strep fecalis	1	2.85
No growth	18	51.42
No report	4	11.42

Chorioamnionitis in Pre-term rupture of membranes

Table 4. Prolongation of pregnancy

Days	n=	%age
1	3	8.57
2-3	11	31.42
4-5	8	22.85
6-8	6	17.14
9-15	5	14.28
30	1	2.85
38	1	2.85

Table 5. Neonatal outcome

A/X	No. of babies	%age	Birth Wt.(Kg)	No. of Babies	%age
7-10	20	57.14	1-2	17	48.57
5-6	13	37.14	2.1-3	17	48.57
Less than 5	2	5.71	More than 3	1	2.85

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