

Research Article**Incidence of meningitis in preterm's born to mothers with premature rupture of membranes**N. Chowdareddy¹*, Chandrashekar¹, Anil Kumar Y.C¹, Shivanand Bhimalli²¹Assistant Professor, Department of Pediatrics, MVJ Medical College, Bangalore, India²Professor, Department of Pediatrics, MR Medical College, Gulbarga, India***Corresponding author**

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Abstract: Prolonged rupture of membranes (PROM) is a common and significant cause of preterm labour and has a major impact on neonatal morbidity and mortality. Preterm premature rupture of membrane (PPROM) occurs approximately 1% of all pregnancies. Neonatal meningitis is a serious problem with a high mortality and frequent neurological sequelae. The aim of this study was to determine incidence of meningitis in preterm born to mothers with premature rupture of membranes.

Keywords: PROM, Meningitis, Preterm

INTRODUCTION

Premature rupture of membrane (PROM) is the spontaneous rupture of membrane before the onset of labour. It is a relatively common obstetric event, occurring in approximately 5-10% of all pregnancies [1]. The primary complication for the mother is risk of infection, complications for the newborn consists of prematurity, fetal distress, cord compression, deformation and altered pulmonary development [2]. For patients with PPRM the most likely outcome is preterm delivery within one week with its associated morbidity and mortality risks such as reparatory distress, necrotizing enterocolitis, intraventricular hemorrhage, sepsis and meningitis [3].

MATERIALS AND METHODS

This is a prospective study conducted from December 2007 to May 2009 in Sagameshwar Hospital and Basaveshwar Teaching and General Hospital, attached to M.R. Medical College, Gulbarga. All neonates born to healthy mothers with PROM more than 18 hours during their hospital stay were included in this study. A detailed history was taken including age, parity, Obstetric history of the mother with emphasis on exact time of rupture of membranes, duration and antibiotics before labour were evaluated. Detailed birth history including resuscitation details, Apgar scores and gestational age assessment were evaluated. In examination of the neonate the pulse, respiratory rate, CFT and temperature were noted followed by systemic examination. Required investigations were done for the neonate and followed during their hospital stay.

Inclusion Criteria:

All neonates born to healthy mothers with PROM more than 18 hours.

Exclusion Criteria:

- Antepartum hemorrhage
- Toxemia of pregnancy
- Medical disease in mother other than infection
- Rh or ABO hemolytic disease
- Major congenital malformations
- Neonates with respiratory distress requiring ventilator support
- Mother with PROM of more than 18 hours who have received antibiotics before labour.

Following investigations were carried out:

- Hb% was estimated by automated analyzer
- Total leukocyte count (TLC) estimated by automated analyser.
- Differential leucocytes count (DLC) done by peripheral smear
- Band count estimated by peripheral smear
- Toxic granules estimated by peripheral smear
- CRP semi quantitative estimation by latex agglutination technique
- Blood culture and sensitivity
- Urine analysis, urine culture and sensitivity
- Chest x-ray (if required)
- CSF analysis and cranial ultrasound

RESULTS AND DISCUSSION

Total of 32 preterm neonates were included in this study.

Table-1: Distribution of cases according gestational age and neonatal morbidities

Morbidity	Gestation age in weeks		Total cases
	< 34	34-37	
RDS	5	9	14(43.7%)
Septicemia	3	1	4(12.5%)
Meningitis	0	1	1(3%)
Pneumonia	0	1	1(3%)
NEC	0	0	0
IVH	0	0	0
Total	8(25%)	12 (37.5%)	20(62.5%)

Out of 32 preterms 20 cases (62.5%) had morbidity. Out of 20 cases of RDS 14 (43.7%), 4 cases (12.5%) had septicemia, meningitis and pneumonia were seen in one patient each respectively.

Merenstein GB and Weisman LE observed that when PROM is accompanied with prematurity the incidence of proven sepsis is 4-6% [4].

Miller HC and Jekel F observed that neonatal morbidity is affected mainly by prematurity itself, rather than by the occurrence of PROM [5].

CONCLUSION

PROM is one of the commonly encountered problem by the neonatologists. Although prematurity and its associated problems is the most common complication of PROM but the incidence rate of sepsis, asphyxia and RDS were also increased. Even though intrapartum antibiotics were administered to the mothers with PPRM incidence of pneumonia and meningitis were significantly seen in preterms.

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