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Research Article

THE INCIDENCE OF EARLY ONSET SEPSIS IN PROM MOTHERS

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ABSTRACT
Premature rupture of membranes (PROM) is one of the most common problems in Obstetrics complicating approximately 5% to 10% of term pregnancies. Preterm premature rupture of membrane (PPROM) occurs approximately 1% of all pregnancies. PROM has major impact on neonatal outcome. PROM is a major risk factor for the development of early onset sepsis. The knowledge of incidence of early onset sepsis in relation to PROM and its effect on neonatal outcome is essential, in order to prevent the neonatal morbidity and mortality. Diagnosis of early onset sepsis, close observation for early signs of sepsis, aggressive evaluation and early treatment has decreased the incidence of early onset sepsis associated with PROM. Because of lack of previous studies on this topic in our hospital, this study has been taken up.

Key Words: *PROM, Early Onset Sepsis, Obstetrics, Risk Factors*

INTRODUCTION
Premature rupture of membranes (PROM) is one of the most common problems in Obstetrics complicating approximately 5-10% of term pregnancies. Preterm premature rupture of membranes (PPROM) occurs approximately in 1% of all pregnancies. The neonatal morbidity risks are significantly affected by duration of latency and gestation at PROM. 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 (F-Nilli and Ansari, 2003). The knowledge of incidence of early onset sepsis in relation to PROM and its effect on neonatal outcome is essential in order to prevent the neonatal morbidity. Diagnosis of early onset sepsis close observation for early signs of sepsis, aggressive evaluation and early treatment has decreased the incidence of early onset sepsis associated with PROM. The present study was undertaken to evaluate newborns born to mothers with PROM for early onset sepsis.

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.

Selection of Cases
All neonates born to healthy mothers with PROM more than 18 hours during their hospital stay were studied 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 history and antibiotics before labour were evaluated. Detailed birth history including resuscitation details, Apgar score 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 are 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

- Meconium aspiration syndrome
- Rh or ABO hemolytic disease
- Major congenital malformations
- Neonates with hyaline membrane disease
- 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 head ultrasound (if required)
- Cervical swab from selected mothers with PROM of more than 18 hours who have not received antibiotics before labour for culture.

RESULTS

Total of 60 neonates were included in this study.

Table 1: Comparison according to the duration of PROM

Duration	Woranart et al	Kifah Al-Q Qa & Fatin Al-Awayshah study	Present study
<72 hrs	92.3%	74%	91.6%
>72 hrs	7.69%	26%	8.3%

In Kifah Al-Q Qa and Fatin Al-Awayshah study (2005) 74% cases had PROM of <72hrs duration and 26% had PROM of >72 hrs.

In the present study 91.6% case had PROM of <72 hrs duration, which is consistent with Woranart *et al.,* study.

Table 2: Neonatal morbidity in relation to duration of PROM

Complication	<24 hrs			>24 hrs		
	Nili and sham study	Taylor study	Present study	Nili and sham study	Taylor study	Present study
Septicemia	18.4%	1.3%	0	15.3%	13.3%	3.3%
Meningitis	0	0	0	0	0	1.7%
Pneumonia	1.2%	0	0	2.5%	0	1.7%

Nili and Ansari (2003) observed that the risk of pneumonia and mortality were much higher in group with > 24 hrs of PROM.

Taylor and Garite (1984) claimed that as latent period increased from 12 hours to more than 24 hours neonatal infection rate also increase from 1.3% to 13.3%. The present study shows that complications are more as the duration of PROM increases (Taylor and Garite, 1984).

Shubeck *et al.*, (1996) observed growth of Staphylococcus in 50% of cases followed by *Klebsiella* in 14% of cases and Pseudomonas in 4% of cases.

Asindi *et al.*, (2002) isolated coagulate negative Staphylococcus in 29% cases, *Klebsiella* in13% and In the present study *Staphylococcus* (42.8%) was the most common organism causing sepsis followed by *Klebsiella* (14.2%), *E. coli* (14.2%), *Pseudomonas* (14.2%) and Coagulate negative *Staphylococcus* (14.2%).

Conclusion

Premature rupture of membranes is a high-risk Obstetric condition. Active management is needed to enable delivery within 24 hrs of premature rupture of membranes as it offers better neonatal outcome.

Premature rupture of membranes though common in term patients, is not responsible for increased maternal and fetal morbidity and mortality in them.

Premature rupture of membranes is responsible for increased perinatal morbidity among preterm neonates.

Morbidity increases as the duration of premature rupture of membranes increases, *Pseudomonas* in 11.3% cases (Asindi *et al.*, 2002).

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