

# **ASSOCIATION OF PRETERM DELIVERIES AND PLACENTAL PATHOLOGY WITH THE NEONATAL OUTCOME- AN INDIAN PROSPECTIVE OBSERVATIONAL STUDY**

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## **ABSTRACT**

Preterm premature rupture of the membranes (PPROM) occurs in 3% of pregnancies and causes around 25-30% of all preterm deliveries. Since PPRM is associated with lower latency from membrane rupture until delivery, it is an important cause of perinatal morbidity and mortality. During the latency period, the ascent of pathogenic microorganisms from the lower genital area could create complications such as intrauterine infections.<sup>4-8</sup> Also; some studies introduced PROM as a pathologic process that often occurs following membrane inflammation and infection. Bacterial infection in choriodecidual levels with brief amnion involvement has been observed after PROM. It has been demonstrated that as many as 25-30% of women with PPRM have a higher incidence of positive amniotic fluid culture obtained by amniocentesis even when there is no clinical doubt for chorioamnionitis.<sup>1,9</sup> However, one of the most common complications in PPRM patients is intrauterine infection, which can lead to chorioamnionitis, metritis after delivery and perinatal outcome such as neonatal sepsis.<sup>1,7</sup> Other complications are cord compression leading to fetal distress, cord prolapse during rupture of membranes and placental abruption.<sup>1,7</sup> Perinatal outcomes constitute prematurity, neonatal sepsis, respiratory distress syndrome (RDS), intraventricular hemorrhage (IVH), risk of fetal and neonatal death.<sup>2</sup> When PROM occurs earlier from term, there are significant risks of maternal and perinatal morbidity and mortality, therefore the attending physicians play an important role in the management of PPRM. The present study aims to correlate placental pathology in preterm birth and to investigate the association of placental pathology with the neonatal outcome. A prospective observational study was conducted at Bangalore Medical College and Research Institute between 2005 to Sept 2006. Placentae from 100 deliveries of less than 37 weeks gestation period were considered.

The relevant data was obtained from various labor wards. Collected data was analyzed by using Minitab-6.50 version. Multiple linear regression model was used to draw the significant inference. Forecasted Models of PROM was estimated in the form of  $Y_t (\text{PROM}) = 10.3 + 2.77 \text{ Gravida} + 0.302 \text{ gestn} + 0.398 \text{ OBG History} - 1.1 \text{ Pl.WT Kgs} - 0.97 \text{ Chorioamnionitis} - 1.24 \text{ Deciduitis} - 0.439 \text{ Infarct} - 0.39 \text{ Retro placental hematoma} - 0.452 \text{ Perivillous fibrin} + 0.51 \text{ Chorionic vasculitis} + 0.622 \text{ Calcification} + 2.13 \text{ Villous edema} - 0.89 \text{ APGAR Score} < 7 - 0.23 \text{ RDS} + 0.48 \text{ I V H}$  (Coefficient of determination  $R^2=78.10\%$ ). The late preterm PROM group is associated with increased risk of chorioamnionitis, deciduitis and infarction in the mother and NICU admission in the neonates. Present study suggested that an acceptable management plan should be expectant management in the 1st 24 hours in carefully selected patients and subsequent induction of labour thereafter if spontaneous labour has not commencement.

**KEYWORDS:** PROM, PPRM, Minitab, APGAR Score, RDS, IVH, NICU