



ASSOCIATION OF MATERNAL AGE, GRAVIDA AND GESTATIONAL AGE WITH PRETERM PREMATURE RUPTURE OF MEMBRANES COMPLICATED WITH OLIGOHYDRAMNIOS (AFI<5) - PROSPECTIVE STUDY

Obstetrics & Gynaecology

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ABSTRACT

Background: PPROM complicates $\approx 3\%$ of pregnancies and leads to 1/3 of preterm births. There are several risk factors of preterm premature rupture of membranes. In this research, the risk factors to be analyzed were maternal age, gravida and gestational age and their relationship in patients with pprom complicated with oligohydramnios (AFI<5).

Objective: the risk factors to be analyzed were maternal age, Gravida and gestational age and their relationship in patients with pprom complicated with oligohydramnios (AFI<5).

Material And Methods: This prospective observational study was carried in Department of Obstetrics and Gynaecology, Patna Medical College and Hospital, Patna, which included pregnant mothers who were admitted through antenatal clinic OPD and Emergency of gestational age less than 37 weeks with PPROM. Total 150 singleton pregnancies with PPROM without any other indications of immediate delivery or other cause of oligohydramnios were studied.

Result: 150 singleton pregnancies with PPROM were studied. 82(54.6%) were with AFI<5 and 68(45.33%) were with AFI ≥ 5 . The result showed that there was no statistically significant difference in maternal age (p=0.827), gravid (p=0.386) and gestational age (p=0.0843) of patients in two groups.

Conclusion: There is no relationship between maternal age, gravida and gestational age with preterm premature rupture of membranes complicated with oligohydramnios (AFI<5).

KEYWORDS

INTRODUCTION:

Rupture of membranes before 37 weeks of gestation is known as preterm premature rupture of membranes. PPROM complicates $\approx 3\%$ of pregnancies and leads to 1/3 of preterm births (Medina TM et al 2006) [1]. It increases the risk of prematurity and leads to a number of other complications, including 1-2% risk of foetal death (Mercer BM 1995) [2]. Because of its association with brief latency from membrane rupture to delivery of foetus, when pprom develops too early, malpresentation, cord compression, necrotising enterocolitis, neurological impairment, intraventricular hemorrhage and RDS are some common complications in the foetus (Alex Sandro et al 2016) [3]. PPROM is multifactorial in nature. In any given patient, one or more path physiologic processes may be evident. Chorioamnionitis or inflammation appears to play an important role in etiology of preterm PROM, especially at early gestational ages (Borna et al 2004) [4]. Oligohydramnios has been traditionally associated with adverse fetal and maternal outcome. (Vidyadhar B. Bangalet al 2011) [5]. Ultrasound has emerged as a useful tool in detecting and predicting prognostic factors. Amniotic fluid index – especially low AFI has been used as a predictor for adverse outcome so much so that estimation of AFI is an integral component of Manning biophysical profile score and modified biophysical profile (Ritu Bawa et al 2017) [6]. Based on studies from various literature that found several risk factors of preterm premature rupture of membranes. In this research, the risk factors to be analyzed were maternal age, gravida and gestational age and their relationship in patients with pprom complicated with oligohydramnios (AFI<5).

MATERIAL AND METHODS:

This was a prospective observational case control study conducted in the dept of obstetrics and gynecology PMCH Patna between Jan 2016 to Dec 2017 on a sample size of 150 patients. All patients were at between 28 and 37 weeks of gestation as best estimated by LMP, and confirmed by ultrasonography. Detailed history was taken at the time of admission and thorough examination was done. In all patients rupture of the membrane was diagnosed by sterile speculum examination using pooled fluid, fern test and Nitrazine paper test.

Patients with Multiple pregnancy, IUGR, Foetal anomaly, Uterine anomalies, Obstetric indications for immediate delivery, Previous surgery, Other causes of oligo except PPROM were excluded. In all eligible women, ultrasound was performed for the evaluation of amniotic fluid index. Patients were then categorized into two groups on the basis of amniotic fluid index <5 or AFI ≥ 5 cm. Statistical analysis was done. Descriptive data were presented as mean $\pm$ sd and range values. chi square test and student t test were used for comparing the

means of two groups. For all tests, the probability value (p-value) of less than 0.05 was considered statistically significant.

RESULTS:

The total number of admission was 18956. Out of which 492 cases of spontaneous pprom was present out of which 150 were in inclusion criteria and studied. 82(54.6%) were with AFI<5 and 68(45.33%) were with AFI ≥ 5 .

Table 1: Distribution Of Cases According To Age

Age(year)	Group1 (n=82) (AFI<5)		Group2 (n=68) (AFI ≥ 5)	
	no	%	no	%
18-22	34	41.46	32	47.05
23-27	34	41.46	26	38.23
28-32	13	15.85	09	13.23
33-37	01	1.2	01	1.4
Mean maternal age	23.27 $\pm$ 3.6		23.91 $\pm$ 3.5	
			p=0.827	

The above table showed that maximum number of patients were in age group 18-27 years. In group 1 68(82.92%) cases and in group 2 58(85.29%) cases were present. But mean maternal age in group 1 was 23.27 $\pm$ 3.6 and group 2 was 23.91 $\pm$ 3.5 which was statistically not significant.

Table 2: Relation Between Parity And AFI

Parity	AFI<5		AFI ≥ 5		P-Value
	no	%	no	%	
nulliparous	34	41.46	33	48.52	0.386
multiparous	48	58.53	35	51.47	0.386

The above table showed that in both groups there were more multiparous patients but there was no significant difference in parity in both groups.

Table 3: Relation Between Gestational Age At The Time Of Admission In Both Groups

Gestational age	Group1 (AFI<5)		Group2 (AFI ≥ 5)	
	No	%	No	%
26-30	15	18.29	15	22.05
31-34	56	68.29	43	63.23
35-37	11	13.41	10	14.70
Mean gest age	32.10 $\pm$ 2.26		32.24 $\pm$ 2.28	
			p=0.0843	

Maximum number of cases at the time of admission were between 31-

34 weeks in both the groups. The statistical analysis showed that there was no significant difference between the two groups.

DISCUSSION:

Premature rupture of membranes complicates 10% of all gestations and 2-4% of preterm pregnancy. Their success in preventing preterm PROM and preterm birth is hampered by limited knowledge of its etiology. This study was done on 150 patients of PPROM in obst. And gynae. Department of pmch patna for a duration of 2 year. Cases were divided in two groups on the basis of AFI after doing USG.

Out of 150 patients 82 (54.6%) were in group 1 (AFI<5) and 68 (45.33%) were in group 2 (AFI≥5) this shows that maximum patients of pprom were complicated with oligohydramnios. In present study majority of patients were in age group 18-27 years, as this is the most common reproductive age group, the number of pprom in this age group is higher (82.92%) in group 1 and (85.29%) in group 2. Which is comparable to the study conducted by Shweta Anant Mohokar et al [7] which had maximum (79%) of cases in the age group of 20-29 years.

Mean maternal age in group 1 was 23.27±3.6 and group 2 23.91±3.5. There was no significant difference between maternal age of different AFI (p=0.827). So it can be said that age of mother is not associated with pprom complicated with oligohydramnios. The mean maternal age in present study was slightly lower than the study done by Borna et al 2004 [4] where mean age was 25.1±5.2 and 24±1.2 for group 1 (AFI<5) and 2 (AFI≥5) respectively. Also in the study done by Ahilya et al 2016 [8] mean age in group A (AFI<5) was 24.41±3.36 and 24.10±3.51 in group B (AFI≥5). And in both the studies there was no significant relation between two groups and age of patients.

In present study group 1 (AFI<5) there was 41.46% nulliparous and 58.53% were multiparous. Whereas in group 2 (AFI≥5) 48.52% were nulliparous and 51.47% multiparous. The overall incidence of multigravida was higher. This is comparable to study conducted by Shweta Anant Mohokar et al 2015 [7] primigravida were 48% and multigravida were 52% but there was no significant relation between two groups and parity of patients with p value 0.386. The result was consistent with the studies done by Tavassoli F et al 2010 [9]. (p value 0.490 for nulliparous and 0.452 for multiparous) And Juliana Martins et al 2016 [10] (p value 0.439)

Present study shows maximum no. Of patients in the gestational age of 31-34 weeks 68.29% in group 1 and 63.23% in group 2 at the time of admission. Mean gestational age in group 1 was 32.10±2.26 and in group 2 was 32.24±2.28 with p value 0.0843. This was in disagreement with the study done by Juliana Martins et al 2016 which showed that Patients with SDP <2cm were noted to have a significantly earlier gestational age at PPROM (p<0.001). But the studies done by Borna et al and Tavassoli F, et al 2010 had same results as this study.

CONCLUSION:

There is no relationship between maternal age, gravida and gestational age with preterm premature rupture of membranes complicated with oligohydramnios (AFI<5).

The conclusion from this study is that the risk of PPROM and associated complication oligohydramnios can be felt by pregnant women in each age group both adolescent and older, can occur in mothers who have primigravida or multigravida groups and based on gestational age variables also PPROM associated low AFI is not related to gestational age of patient.

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