

A Study on Socio-Demographic Profile of The Women Presenting with Preterm Premature Rupture of The Membrane at a Tertiary Health Care Centre in Rajasthan

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Abstract- Preterm premature rupture of membrane (PPROM) is defined as spontaneous rupture of the membrane anytime but before the onset of labour. It is one of the common causes of prematurity. A hospital-based observational study was carried out in the Department of Obstetrics and Gynecology at NIMS Medical College, Jaipur, after getting clearance from the ethics committee in February 2021 to January 2022. The majority of the women presented with PPRM in our studies were Muslim (74.7%), literate (54.7%), belonging to lower middle socio-economic status (68.7%), residing in rural areas (59.3%) and had normal BMI (80.7%). Out of 150 women studied, 96 (64%) were unbooked. By encouraging women for regular antenatal checkups and counseling them for early admission to the hospital in the event of PROM will reduce the maternal and perinatal complications.

Index Terms- PROM, Prematurity, socio-demographic, antenatal checkups.

I. INTRODUCTION

Preterm premature rupture of membrane (PPROM) is defined as spontaneous rupture of the membrane anytime but before the onset of labour. It is one of the common causes of prematurity. Term PROM -When membrane rupture occurs beyond 37 weeks but before the start of labour. PPRM-Spontaneous rupture of membrane before 37 weeks and before the start of labour. It complicates up to 2%- 4 % of all pregnancies and 40% of all preterm births. It is multifactorial in aetiology, and several different risk factors may be associated with PPRM, which include- infections UTI, Group B streptococcal colonisation and bacterial vaginosis, Polyhydramnios, low socioeconomic status, nutritional deficiencies, cervical shortening. Excessive collagen degradation or decreased membrane collagen content, localised membrane defects, excessive membrane stretch (uterine over distension), precocious programmed amniotic cell death and choriodecidual infection.

Perinatal outcomes constitute prematurity, neonatal sepsis, respiratory distress syndrome, intraventricular haemorrhage, and risk of fetal and neonatal death. Expectant management with antenatal antibiotic and corticosteroid administration is the recommended standard of care in the setting of PPRM at a gestational age of ≤ 34 weeks. PPRM is an obstetric condition that requires timely and guided intervention by a skilled attendant to avert adverse outcomes. Very few studies have been done to date regarding the socio-demographic characteristics of the women presented with PPRM. Keeping this in mind, this study was planned to study socio-demographic characteristics of the presentation timing to the health facility following the onset of PROM.

II. MATERIAL & METHODS

A hospital-based observational study was carried out in the Department of Obstetrics and Gynecology at NIMS Medical College, Jaipur, after getting clearance from the ethics committee in February 2021 to January 2022. After obtaining written informed consent, the study included one hundred fifty women with PPRM. A detailed history was taken, including past and present obstetric history and the socio-demographic profile of the women. PPRM was confirmed by history, along with a sterile per speculum examination observation of pooling of amniotic fluid in the posterior fornix of the vagina or active leakage of amniotic fluid from the cervix, Ultrasonography for the amount of liquor & fern test, atrazine test, CRP if required. Women were assessed by clinical signs and symptoms together with one of the following tests:

Maternal pulse and temperature, white blood cell count in CBC, C reactive protein and fetal heart rate monitoring to diagnose the presence of intrauterine infection.

Antibiotics and betamethasone have managed PPRM.

Labour was induced in pregnancies complicated with PPRM at and after 34 weeks of gestation or earlier in women at imminent risk of delivery within the next seven days.

Data were entered in Microsoft Excel sheet and analysed statistically.

III. OBSERVATION & RESULTS

- The Mean age of the women was 24.02 ± 3.24 years, with a range of 19 to 35 years.
- Most of the women (56%) in our study were aged 21 to 25 years.
- This reflects that early marriage is still prevalent in our state.

- The majority of the women presented with PPRM in our studies were Muslim (74.7%), literate (54.7%), belonging to lower middle socio-economic status (68.7%), residing in rural areas (59.3%) and had normal BMI (80.7%). Out of 150 women studied, 96 (64%) were unbooked.

Variables	Number	Percentage
Age		
<20	21	14.0
21-25	84	56.0
26-30	34	22.7
≥31	11	7.3
Religion		
Muslim	112	74.7
Hindu	38	25.3
Booking Status		
Booked	54	36.0
Un-booked	96	64.0
Residence		
Urban	61	40.7
Rural	89	59.3
Literacy Status		
Literate	82	54.7
Illiterate	68	45.3
Socio-economic status		
Upper	47	31.3
Middle	42	28.0
Lower	61	40.7
BMI		
18.5 - 24.9	121	80.7
25.0 - 29.9	25	16.7
30.0 - 34.9	4	2.6

Table 1 shows the socio-demographic profile of the women presented with PPRM.

- Most of the women were primigravida (44.7%) with a range of gravidity 1 to 5.
- In 98 women (65.3%), gestational age was 34 weeks or above (between 34 to 36.6 weeks), and in the remaining 52 women, gestational age was below 34 weeks (between 26 to 33.6 weeks).
- PPROM to delivery interval varied from 3 hours to 80 hours.
- PPROM to the delivery interval was ≤ 24 hours in the majority of them (52%).

Variables	Number	Percentage
Gravidity		
Gravida 1	67	44.7
Gravida 2	36	24.0
Gravida ≥ 3	47	31.3
Parity		
Para 0	53	35.4
Para 1	44	29.3
Para 2	36	24.0
Para \geq	17	11.3
Past history of preterm delivery	13	18.6
Past history of abortion	9	12.9
Past history of LSCS	13	18.6
Gestational age		
≥34	98	65.3
<34	52	34.7
PROM to delivery interval		
≤12 hours	27	18.0
13-24 hours	51	34.0
25-36 hours	26	17.3
37-48 hours	13	8.7

>48 hours	33	22.0
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Table 2 : Obstetrics profile of the women with PPRM

- Comparative analysis of the socio-demographic and obstetric profile of women in two groups based on PROM-to-delivery interval is shown in Table 3.
- Out of 150 women studied, most (52%) delivered within 24 hours of onset of PPRM.
- In the remaining 48% of women, PPRM to the delivery interval was more than 24 hours.
- Both the groups were comparable in terms of mean age, weight, height, BMI, residence and socio-economic status.

Variables	Within 24 hours (n=8)	>24 hours (n=2)	p value
Mean Age	23.7 ± 3.1	24.2 ± 3.2	0.3
Mean weight	55.3 ± 6.4	56.2 ± 7.9	0.4
Mean Height	154.5 ± 4.4	154.9 ± 4.7	0.5
Mean BMI	23.0 ± 1.9	23.3 ± 2.5	0.4
Literate	41	51	0.02
Urban residence	28	33	0.2
Socioeconomic Status			
Lower	29	32	0.5
Middle	23.	19	
Upper	26	21	
Mean Gravidity	1.7 ± 1.0	2.2 ± 1.1	0.004
Mean Parity	1.2 ± 1.1	1.1 ± 1.0	0.5
Gestational Age	34.02 ± 1.9	33.8 ± 2.0	0.4
Previous preterm birth	7	6	0.8
Previous PROM	1	3.	0.3
Previous CS	8	5	0.4

Table 3 -Comparative analysis of the socio-demographic and obstetric profile of Women in two groups based on PROM-to-delivery interval

IV. DISCUSSION

At present, pre-labour rupture of the membrane (PROM) is one of the challenging and controversial issues.

Socio-demographic characteristics of the women presented with PPRM in our institute were studied.

In our study, the maximum number of women was between 21 and 25 years old.

Women residing in rural areas during pregnancy have been shown to have a slightly higher chance of having PPRM and preterm delivery.

This may probably be due to the lack of accessibility to health facilities in rural areas as compared to urban areas, fewer antenatal visits, and the fact that women living in rural areas are more likely to be involved in hard physical work like farming, which increases the risk of preterm delivery, particularly in women with other risk factors for preterm delivery.

Low socioeconomic status is an imperative risk factor for PROM and preterm labour.

Factors such as malnutrition, overexertion, poor hygiene, stress, recurrent genitourinary infections and anaemia significantly increase the risk.

V. CONCLUSION

PROM is a major cause of preterm birth and an important cause of perinatal morbidity and mortality.

Majority of the women presented with PPRM were in the age group 21-25 years, Muslim, literate, belonging to lower socio-economic status and rural area and unbooked in the hospital.

48% women had PROM to delivery interval >24 hours.

By encouraging women for regular antenatal checkups and counseling them for early admission to the hospital in the event of PROM will reduce the maternal and perinatal complications.

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