Original Article

Evaluation of Risk Factors of Premature Rupture of Membrane (PROM) in SBMCH

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ABSTRACT:

Background: Premature Rupture of membrane (PROM) refers to a patient who is beyond 37 weeks gestation and has presented with rupture of membranes prior to the onset of labor. Preterm Premature rupture of membranes (PROM) is rupture of membranes prior to 37 weeks gestation. Clinical factors associated with PROM include low socioeconomic status, low body mass index, tobacco use, history of preterm labor, urinary tract infection, history of cerclage operation and amniocentesis, vaginal bleeding at any time in pregnancy. Objectives: To find out the risk factors of premature rupture of membranes (PROM) cases. Material & Methods: This cross-sectional study was done at the Obstetrics and Gynecology Department of Sher-E-Bangla Medical College Hospital, Barisal. Women admitted in labor and antenatal ward with premature rupture of membranes after completion of 28 weeks of gestation. Total 100 patients were included. Data were collected by predesigned data collection sheet. Data were analyzed by using statistical package for social science (SPSS) version 14. Results: In this study the risk factors of PROM had been identified in 56% cases. Among them, most common associated disease was found urinary tract infection 37.50%, next common was found lower genital tract infection (19.64%). Relevant past obstetrics history was found in 38% of cases and 75% women reported about last sexual contact within 01 week before development of PROM 56% of PROM patient were multigravida and 89% belonged to below average income group. About one-Third (72%) of the patient were in the age group of 21-30 years, of which most were housewives (62%). Majority of the patient (68%) delivered by vaginal delivery which were either spontaneous or induced and only 32% underwent caesarean section. Common indication for cesarean section was fetal distress (34.37%). Conclusion: PROM is Common complication during pregnancy some of the risk factors for PROM found in this representative study are preventable and thus provide guidance about how pregnancies should be managed to reduce the occurrence of PROM in the future.

Keywords: *Premature Rupture of membrane, risk factors, pre-term birth*

(The Planet 2020; 4(2): 46-51)

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INTRODUCTION:

To give birth to a healthy child is the most awaited event in a woman's life. At the same time, it imposes the greatest risk of life. Premature Rupture of Membranes (PROM) is responsible for about 25-33% of preterm births. [1]

Under normal circumstances, the fetal membranes rupture during active phase of labor. PROM is said when the membranes rupture

before the onset of labor. When membranes rupture before the onset of labor it is called premature rupture of membranes (PROM). PROM at term is common and occurs in approximately 6 to 10 percent of all pregnancies [2].

Numerous risk factors are associated with PROM. Other patients are at higher risks include those who have lower socioeconomic status, are smokers, have a history of sexually transmitted infections, have had a previous preterm delivery,

have vaginal bleeding, or have uterine distention (eg. polyhydramnios, multifetal pregnancy [3].

Choriodecidual infection or inflammation may cause PROM. A decrease in the collagen content of the membrane has been suggested to predispose patients to PROM. It is likely that multiple factor predisposes certain patients to PROM.

PROM occurs in 8% pregnancies, usually followed by spontaneous onset of labor and delivery. In a large randomized study 50% of patients managed expectantly; 5% delivered in 5 hours and 95% did so in 48 hours. Major maternal risk of PROM is infection. Major fetal risks are malpresentation, cord compression, oligohydromnios, necrotizing enterocolities, neurologic impairment, intraventricular hemorrhage and respiratory distress syndrome.

The main objectives of this study are the risk factors of PROM and to correlate them which current though and ideas.

METHODS AND MATERIALS:

This was cross-sectional study which involved interviewing women admitted with premature rapture of membranes after complication of 28 weeks of gestation, irrespective of their who are admitted in labor and antenatal ward during the study period to SBMCH, Dept. of Obstetrics & Gynecology with PROM during study (June 2020 – December 2020) period. All patients were observed with the help of a standard data record from containing relevant information about the study topic.

Sample: the power calculation formula was applied calculate the sample size;

RESULTS:

A total of 100 women of different age underwent this PROM during this period. Among the total patients them 44 were primigravida and 56 were multigravida.

Table-01: Distribution of mode delivery (n=100)			
Gravida	**Delivery**		
	Vaginal No. (%)	Assisfed vaginal	Caesarean section (%)
Primi (n=44)	24 (54.54%)	2 (4.54%)	18 (40.92%)
Multi (n=56)	39 (69.64%)	3 (5.36%)	14 (25%)

Table-01 shows mode of delivery in 100 patients. Among them 44 were primigravida and 56 were multigravida. Spontaneous vaginal delivery was achieved in 54.54% in case of primigravida and 69.64% in cases of multigravida.

Data Analysis: Data were analyzed by using computer based software- Statistical Package for Social Science (SPSS) version 14.

Table-02: Associated risk factors		
Associated risk factors	**Number of Patients**	**Percentage**
Urinary tract infection	21	37.50
Lower genital tract infection	11	19.64
Multiple Pregnancy	2	3.57
Polyhydramnios	2	3.57
Anemia	10	17.86
Malnutrition with low BMI	5	8.92
Congenital anomalies of the uterus	1	1.79
Others	4	7.15

Table-02 shows that out of 100 patients, 44 had no identifiable risk factors and 56 had associated disease during their present pregnancy. Most common associated disease was urinary tract infection (37.50%) and next common was lower genital tract infection (19.64%).

Table-03: Gestational age at presentation (n=100)		
Gestational age (weeks)	**umber of Patients**	**Percentage**
28-32	13	13
33-36	50	50
37	37	37

Table-03 shows that 63% of PROM patients were before the age of 37weeks of gestation and 37% were at 37 weeks of gestation.

Table-04: Distribution of past obstetrics history (n-100)		
Past History	**Number of Patients**	**Percentage**
No relevant past history	62	62.0
PROM	18	18.0
Preterm Delivery	9	9.0
Abortion	7	7.0
Multuple pregnancy	2	2.0
Polyhydramnios	1	1.0
Congentinal anomalies	1	1.0

Table -04 shows that out of 100 patents 38 had relevant past obstetrics history and 62 had no such history. Among them 18% had previous history of PROM and 9% had previous history of preterm delivery

DISCUSSION:

The present study was a cross- sectional study on risk factors of PROM. Total 100 cases were include in this study at Obstetrics & Gynecology Department of Sher-E-Bangla Medical College Hospital, Barisal during the period of June 2020 to December 2020.

The aim of this study was to identity the risk factors of PROM. It had given an opportunity to analyze the magnitude of problems caused by PROM. In this study, Mean (±SD) age found (27.28±5.13) years, which is similar to other studies done by Begum N [4], Tasnim S [5], Moreti and Sibai [6]. In this study, the incidence of PROM was more in multigravida, it was

about 56 percent. Begum A and choudhury S [7] observed the incidence in multigravida in about 70 percent.

The study showed that 89 percent of PROM patients were in below average income group.

Maternal diseases have significant impact on PROM. In this study, 56 percent of PROM cases had associated maternal risk factors, among which 37.30 percent had UTI, 9.0 percent had lower genital tract infections, 17.86 percent had anemia, 8.92 percent no malnutrition with low BMI, 3.57 percent had multiple pregnancy, polyhydramnios was cases. d 3.57 percent cases, congenital anomalies of uterus was ln 1.79 percent cases. These results correlate with Most. Afroja Sarkar's [8] findings.

In this study, PROM in pervious pregnancy was found as a risk factor. The recurrence in the study was 18 percent compared to 21 percent observed by Naeye RL [9].

In this study, 32 percent of PROM patients delivered by caesarean section and 68 percent or PROM patients delivered vaginally. Spontaneous vaginal delivery was achieved in 54.54% in case of primigravida and 69.64% in case of multigravida. Common indication for caesarean section was fetal distress (34.37%). Gilson et al [10] study found that 20.3% of PROM patients delivered by caesarean section. The UN recommends LSCS rate of 5-5% to optimally decrease maternal and neonatal morality [11].

CONCLUSION:

In Bangladesh PROM and their consequences, pre-term labor continues to have a significant impact of neonatal outcome. The principal cause of PROM is till obscured. But in the present study certain risk factors have been identified in relation to PROM, some of which are avoidable. But lack of health education, low socioeconomic condition, lack of adequate facilities to deal with the emergencies situation, inadequate referral and transfer system are important contributing factors of consideration. The ultimate goal of management of PROM must be towards the safety of mother and optimum neonatal outcome.

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