



Study Of Various Risk Factors Affecting Preterm Birth

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Abstract

Aim And Objective : To study risk factors affecting preterm birth.

Materials And Methods : It was hospital based cross-sectional study including 78 women between 28 weeks 37weeks of gestation with threatened preterm labour. Detailed history including complications in previous pregnancy were noted and data analysis was done using Student' s t -test and chi square test.

Results: Among 78 women with threatened preterm labor , 31 had history of vaginosis , 33 had history of threatened abortion , 58 had history of preterm birth in previous pregnancy.

Conclusion : Threatened abortion , history of bacterial vaginosis, previous preterm birth are the major risk factors affecting preterm birth.

Keywords: Vaginosis, threatened abortion , previous preterm delivery

Introduction

Preterm labour is usually defined as regular contractions accompanied by cervical change at less than 37 weeks' gestation. It is the leading cause of neonatal morbidity and mortality; and the second most leading cause of under-five death in the world. Preterm labour is thought to be a syndrome initiated by multiple mechanisms, including infection or inflammation, uteroplacental ischaemia or haemorrhage , stress, and other immunologically mediated processes.¹

Defining risk factors for prediction of preterm birth is a reasonable goal for several reasons. First, identification of risk women allows initiation of risk-specific treatment. Second, the risk factors might define a population useful for studying specific interventions. Finally, identification of risk factors might provide important insights into mechanisms leading to preterm birth. There are many maternal or fetal characteristics that have been associated with preterm birth, including maternal demographic

characteristics, status, pregnancy history, present pregnancy characteristics, etc 1.

Intrauterine infection is a frequent and important mechanism leading to preterm birth. The mechanisms by which intrauterine infections lead to preterm labour are related to activation of the innate immune system.¹

It is a major challenge in perinatal health care. Preterm birth occurs in 5% to 18% of all deliveries worldwide.² It is estimated that 15 million preterm births occur each year with 1.1 million infants dying from preterm birth complications.²

A reliable prediction or identification of women at risk of preterm birth is key to its prevention.

This study demonstrated that preterm delivery is still a challenging maternal health problem in the study area . Early identification of these factors during prenatal care may prevent the risk of preterm

delivery. This calls upon to reinforce antenatal care and services for better birth outcomes.

Aim And Objective : To study risk factors affecting preterm birth.

Materials And Methods: The study was conducted on 78 pregnant female in the department of Obstetrics and Gynaecology , SMS Medical College , Jaipur . Women with singleton pregnancy 28 to 37 weeks of gestation with intact fetal membranes, who presented with threatened preterm labour were included in the study after taking written informed consent. Pregnant women with Preterm premature rupture of membranes (PPROM),advanced preterm labour, those women who require iatrogenic preterm induction of labor were excluded.

All cases were subjected to detailed history including risk factors , complications in previous delivery if any were noted. Abdominal examination was done for presentation of fetus and frequency of uterine contractions.Results were analysed.

Statistical Analysis: The data collected was entered in MS excel sheet . Continuous variables were summarized as mean and were analyzed by using unpaired t test. Nominal / categorical variables were summarized as proportions and were analyzed by using chi-square/Fischer exact test. Pvalue <0.05 was taken as significant.Diagnostic accuracy was assessed using following terms : Sensitivity,Specificity, PPV and NPV .Medcalc 16.4 version.

Table no 1: Socio -demographic factors :

Variable	Preterm delivery		p-value
	Yes	No	
Age			0.143
18-25years	33(63.5%)	12(46.2%)	
26-30years	17(32.7%)	10(38.5%)	
>30years	2(8.8%)	4(15.4%)	
Socio-economic status			0.223
Upper	6(11.5%)	2(7.7%)	
Middle	43(82.7%)	19(73.1%)	
Lower	3(5.8%)	5(19.2%)	
Residence			0.150
Urban	29(55.8%)	10(38.5%)	
Rural	23(44.2%)	16(61.5%)	
BMI			0.709
<18.5kg/m2	12(63.2%)	7(36.8%)	
18.5- 22.9kg/m2	40(67.8%)	19(32.2%)	

Table no2: Association of history of vaginosis with preterm delivery (n- 78)

History of bacterial vaginosis	Preterm delivery		
	Yes	No	Total

Yes(31)	24(77.4%)	7(22.5%)	31
No(47)	28(59.5%)	19(40.4%)	47
Total (78)	52	26	78

p-value – 0.102

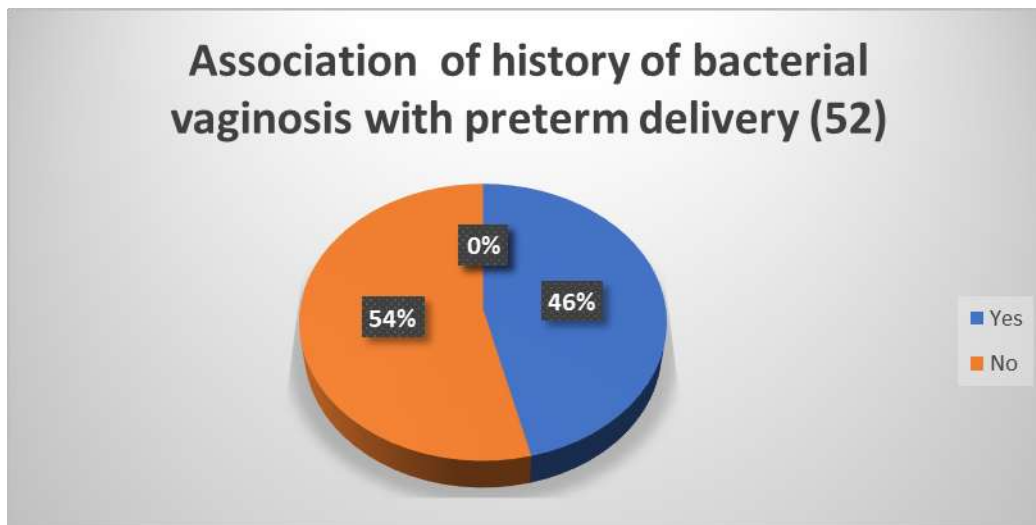


Table3- Association between history of threatened abortion with preterm delivery (n =78)

History of threatened abortion	Preterm birth		
	Yes	No	Total
Yes(33)	24(72.7%)	9(27.2%)	33
No(45)	28(62.2%)	17(37.8%)	45
Total (78)	52	26	78

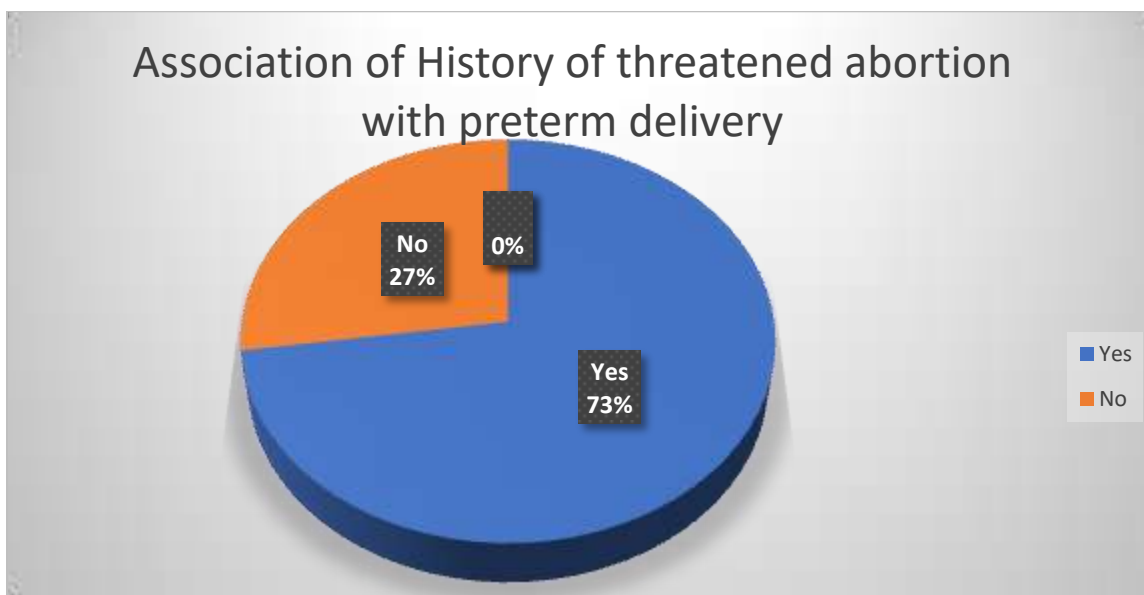
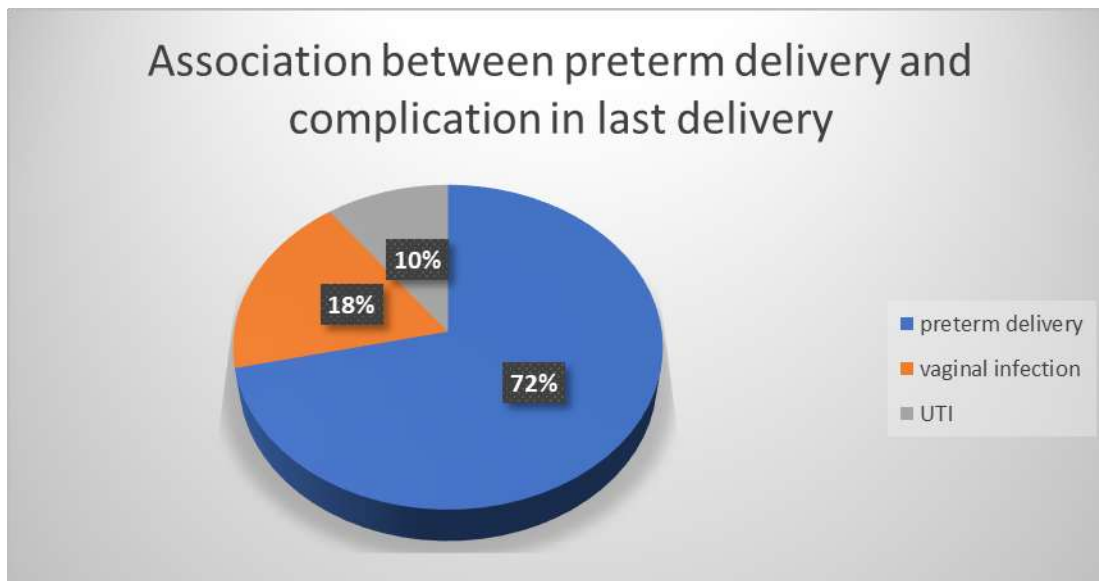


Table no 4- Association between complication in previous delivery with preterm labor (n =78)

Complication in previous delivery	Preterm delivery		
	Yes	No	Total
Preterm delivery (58)	35(60.3%)	23(39.6%)	58
Vaginal infection (12)	9(75%)	3(25%)	12
UTI(5)	5(100%)	0(0.00%)	5
Total(75)			

p-value- 0.200



Results And Discussion:

An accurate diagnosis of preterm labor is clinically difficult. It is the second leading cause of neonatal mortality and morbidity after birth defects.

In the study, majority of the participants (78) belonged to age group 18-25 years (45) and among this group, around 63.5% (33) had preterm delivery . Maximum preterm delivery around 82.7% (43) were in middle socio-economic group. In this study, 75.6% (59) women had BMI between 18.5 -22.9 kg/m2 and among them 67.8% (40) had preterm delivery.

In our study, among participants (78) around 66.7% (52) delivered preterm. Among preterm delivered 77.4% (24) had a history of vaginosis and 72.7% (24) had a history of threatened abortion in the present pregnancy. As per many popular theories, one of the most important cause of preterm labor has been

intra-uterine infection. A number of clinical studies suggested that the asymptomatic genital tract infection may play a significant role in preterm birth. As per Kurki et al(1992)², Bacterial vaginosis had 2-6 times increased risk for preterm labor.

As per the study by Salah Roshdy(2012)³, women with threatened abortion had a significantly increased risk of preterm labor. The literature reports on the association between bleeding in early pregnancy and preterm labor is a conflicting one. There is evidence that later pregnancy complications like preterm labor may be due to impaired placentation a result of early pregnancy bleeding.

In the present study, those who delivered preterm, 71.4% (35) had a history of previous preterm delivery, 18.4% (9) had a history of vaginal infection in previous delivery and 10.2% (5) had a history of UTI in previous pregnancy. So a patient in a study

had multiple complications in previous history contributing preterm delivery in present pregnancy. As per the study by Yang (2016)⁴ a prior preterm birth increases the risk for a subsequent preterm birth with higher odds.

Conclusion: History of preterm birth, spotting and bleeding, urinary infection, vaginal infection, low social status were identified as the most important risk factors for preterm birth. Identifying pregnant women at the risk of preterm delivery and providing quality healthcare may decrease the rate of preterm birth and its consequences.

Informed Consent Statement: All subjects here were already informed and gave consent.

Provenance And Peer Review : Not commissioned, externally peer-reviewed .

References:

1. Robert L Goldenberg, et al (2008) - Epidemiology and causes of preterm birth.
2. Pallavi S. Vishwekar, Anahita R. Chauhan, Naju Turakhia, International Journal Of Reproduction, Contraception, Obstetrics And Gynecology, Vol 6, No 8 ,2017- Prediction of preterm delivery with a novel bedside test
3. Kurki, Tapio MD (1992). Bacterial vaginosis in preterm labour.
4. Pregnancy Outcome in Women with Threatened Miscarriage-(2012) a Year Study-Salah Roshdy Ahmed, Mohamed El-Khatem El-Samman.
5. Juan Yang (2016)-Recurrence of Preterm Birth and Early Term Birth.