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Original Research Article.

Retrospective Assessment of Pre-Term Deliveries: A Hospital Based Study

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ABSTRACT

Background: Preterm birth (PTB) is a leading cause of infant mortality and neonatal morbidity. Recent studies have demonstrated that the relationship between obesity and prematurity is influenced by the extent of obesity, type of PTB, presence or absence of comorbidities, parity, and gestational age. Hence; we planned the present study to retrospectively assess various pre-term deliveries in a tertiary care centre.

Materials & Methods: The present retrospective study included evaluation of pre-term deliveries. The data records of 50 patients were included in the present study. Complete demographic details and medical history of all the patients was recorded. Past medical and surgical history along with past obstetrical history especially of preterm births and abortions was taken to determine the causative factor. All the records and investigation reports were separately analyzed. All the results were analyzed by SPSS software.

Results: Active phase of labor was the most common cause of preterm delivery in the present study accounting for 70 percent of the cases. Other causes of preterm delivery included antepartum haemorrhage, acute fetal distress, and eclampsia. History of previous preterm delivery was present as a risk factor in 5 patients while previous history of abortion was present as a risk factor in 10 patients.

Conclusion: Most common cause for occurrence of preterm labor is Active phase of labor. Also past history of abortions and preterm labor constitute a significant risk factor for the occurrence of preterm labor.

Key words: Birth, Delivery, Preterm.

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INTRODUCTION

Preterm birth (PTB) is defined as any birth before 37 completed weeks of gestation since first day of the female's last menstrual period, according to WHO. Preterm birth is a leading cause of infant mortality and neonatal morbidity. Although multiple risk factors have been related to PTB, it continues to be a complex phenomenon without a cure. One of the potentially modifiable risk factors for PTB is maternal body mass index (BMI). Both low (<18.5) and high (>29) BMI are shown to associate with PTB. Recent studies have demonstrated that the relationship between obesity and prematurity is influenced by the extent of obesity, type of PTB, presence or absence of comorbidities, parity, and gestational age. Survival of preterm babies can be affected by maternal obstetric and gynecological factors and biological and socioeconomic factors that extend from prenatal through postnatal periods. Preterm babies born to single mothers have an increased risk for postneonatal and infant deaths which highlights the importance of having both parents during childhood. Researchers have been focused more on trends involving the occurrence of and consequent deaths of preterm births over a period of time to a certain degree than on the rates and factors affecting the survival of preterm babies.[1-8]

Hence; we planned the present study to retrospectively assess various pre-term deliveries in a tertiary care centre.

MATERIALS & METHODS

The present retrospective study was carried out in the department of Obstetrics & Gynaecology of the Zanana Hospital, Bharatpur, Rajasthan, India. Its included evaluation of pre-term deliveries. Ethical approval was obtained from the institutional ethical committee and written consent was obtained after explaining in detail the entire research protocol. We evaluated the data records of all the patients and made following exclusion criteria for selecting patients in the present study:

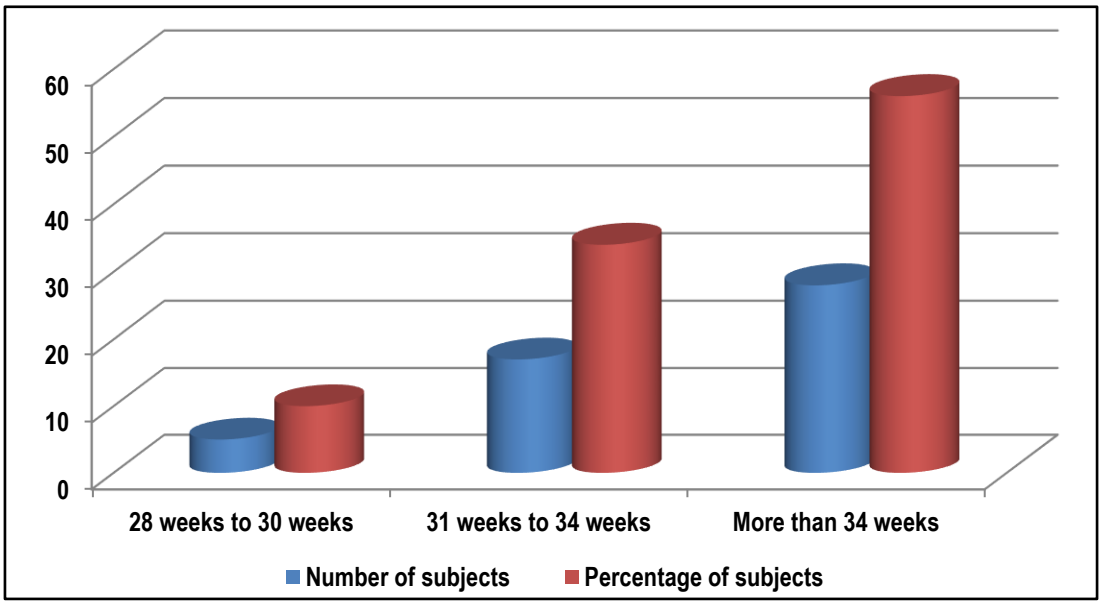
- Patients with intrauterine fetal demise and congenital anomalies,
- Patients with presence of any co-morbid condition,
- Patients with past medical history of any systemic illness,
- Patients less than 20 years of age

After meeting the exclusion criteria, the data records of 50 patients were included in the present study. Complete demographic details and medical history of all the patients was recorded. Past medical

and surgical history along with past obstetrical history especially of preterm births and abortions was taken to determine the causative factor. All the records were separately analyzed.

All the results were analyzed by SPSS software. Chi-square test and univariate regression curve was used for evaluation of level of significance. P- value of less than 0.05 was taken as significant.

Graph 1: Distribution of subjects according to the gestation age at the time of delivery



Graph 2: Distribution of patients according to cause of preterm delivery

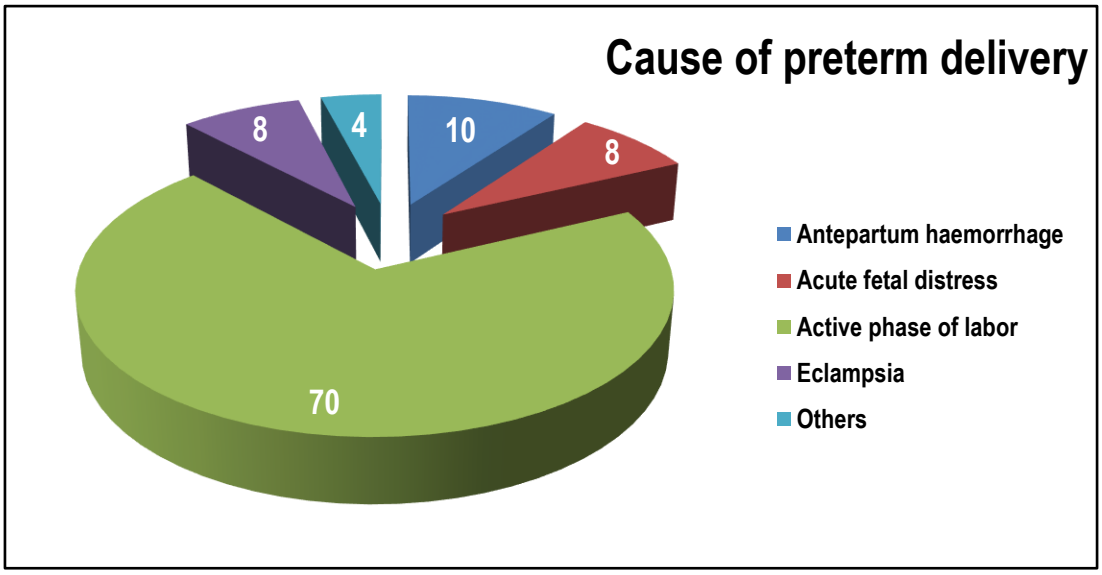


Table 1: Distribution of patients according to various risk factors

Risk factor		No. of patients
Age	**More than 36 years**	5
Parity	**Primipara**	14
	Multipara	30
	Grandmultipara	6
Past obstetric history	**Abortions**	10
	Previous preterm delivery	5

RESULTS

Data records of a total of 50 patients were analyzed. Out of 50, in 10 percent of the patients, the gestation age was 28 weeks to 30 weeks, whereas in 56 percent of the patients, the gestation age was more than 34 weeks. In 34 percent of the patients, gestation age was between 31 weeks and 34 weeks. Active phase of labor was the most common cause of preterm delivery in the present study accounting for 70 percent of the cases. Other causes of preterm delivery included antepartum haemorrhage, acute fetal distress, and eclampsia. History of previous preterm delivery was present as a risk factor in 5 patients while previous history of abortion was present as a risk factor in 10 patients.

DISCUSSION

In the present study, we analyzed data records of a total of 50 patients. Active phase of labor was the most common cause of preterm delivery in the present study accounting for 70 percent of the cases. Previous history of abortion was present as a risk factor in 10 patients. Lee SK et al examined the relationship between gestational age and outcomes of outborn versus inborn preterm infants. Multivariable logistic regression analysis was used to examine gestational age-specific, risk-adjusted outcomes of 2962 singleton infants who were born at <32 weeks of gestation who were admitted to 17 Canadian neonatal intensive care units from 1996 through 1997. The risk-adjusted incidence was significantly (P <.05) higher among outborn versus inborn infants for mortality rates (odds ratio, 2.2) and > or =grade 3 intraventricular hemorrhage (odds ratio, 2.1) at < or =26 weeks of gestation and for chronic lung disease (odds ratio, 1.7) at 27 to 29 weeks of gestation. Outcomes of outborn and inborn infants at 30 to 31 weeks of gestation were not significantly different. The short-term benefit of preterm birth at tertiary centers was related inversely to gestational age and may not extend beyond 29 weeks of gestation.[9]

Garg S et al conducted over a period of eight months from September 2016 till April 2017 at a tertiary care hospital. All patients who delivered a live baby before 37 weeks of gestation were included in the study. Present study was conducted on 100 eligible women out of which 7 delivered before 30 weeks but majority of them (55%) delivered after 34 weeks of gestation. In our study, most of the patients (66%) presented in active phase of labor which resulted in preterm birth of baby. The most common risk factor of preterm labor was genitourinary tract infections (34%) followed by Preterm Premature rupture of membranes (22%). Past obstetric history of preterm delivery and abortions also had a significant impact on the present pregnancy outcome. Preterm labour and birth still have a high incidence causing significant neonatal mortality and morbidity as well as economic burden on family and hospital. The causes of preterm birth are multifactorial and modifiable. This incidence can be reduced by early identification of established risk factors, as revisited and reemphasized in our study, with the help of universal and proper antenatal care.[10] Westgren LM et al evaluated the significance of the route of delivery for preterm breech deliveries, a retrospective study was performed on 136 infants in breech presentation, weighing less than 1500 g. Thirty-seven (27%) were delivered vaginally, and the remaining 99 (73%) by cesarean section. Although perinatal mortality was higher in the vaginally delivered infants than in those born by cesarean section (54 versus 37%), statistical significance was not shown. One-fourth of the deaths in the vaginal delivery group occurred intrapartum. Although most previous studies have suggested improved outcome with delivery by cesarean section, the present study fails to demonstrate any statistically significant difference. Whether there is, in fact, no difference in outcome attributable to the route of delivery or a difference exists that is not demonstrable by a retrospective study is an open question. It is concluded that the design of the retrospective study, as in all published studies on this subject, confounds the results and thereby makes conclusions precarious.[11] Girsen AI et al investigated the distribution of known factors for preterm birth (PTB) by severity of maternal underweight. Singleton live births of women whose pre-pregnancy body mass index (BMI) was underweight (<18.5 kg/m2) or normal (18.50–24.99 kg/m2) were analyzed. Underweight BMI was further categorized as: severe (<16.00), moderate (16.00–16.99) or mild (17.00–18.49). PTB was grouped as 22–27, 28–31, 32–36 or <37 weeks (compared with 37–41 weeks). Adjusted multivariable Poisson regression modeling was used to estimate relative risk for PTB. 72,686 (7.6%) women were underweight. Increasing severity of underweight was associated with increasing percent PTB: 7.8% (n=4421) in mild, 9.0% (n=1001) in moderate and 10.2% (475) in severe underweight. The adjusted relative risk of PTB also significantly increased: aRR=1.22 (95%CI: 1.19–1.26) in mild, aRR=1.41 (95%CI: 1.32–1.50) in moderate and aRR=1.61 (95%CI: 1.47–1.76) in severe underweight. These findings were similar in spontaneous PTB, medically indicated PTB, and the gestational age groupings. Increasing severity of maternal pre-pregnancy underweight BMI was associated with increasing risk adjusted PTB at <37 weeks. This increasing risk was of similar magnitude in spontaneous and medically indicated births and in preterm delivery at 28–31 and at 32–36 weeks of gestation.[12]

CONCLUSION

From the above results, the authors concluded that Active phase of labor is the most common cause of preterm labor. Also past history of abortions and preterm labor constitute a significant risk factor for the occurrence of preterm labor. However; future studies are recommended.

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