

Original Research

Determination of various risk factors associated with preterm labor in gynecological department- A clinical study

Dr. Jigyasa Govil

Assistant professor, Department of Obstetrics & Gynaecology, Varun Arjun Medical College, Banthara, Uttar Pradesh, India

ABSTRACT:

Background: Preterm labour is the onset of regular uterine contractions associated with progressive cervical change between viability and 37 completed weeks of gestation. The present study reported the cases of preterm labor and preterm birth in known group. **Materials & Methods:** 116 antenatal females with preterm labor at less than 37 weeks gestational age underwent ultrasonography (USG) by Toshiba machine. Risk factors related to preterm labor were recorded. **Results:** Various risk factors were PROM seen in 24, APH in 36, infection in 28, maternal diseases in 2, multiple gestation in 10 and idiopathic in 16 cases. The difference was significant ($P < 0.05$).

Conclusion: Various risk factors associated with preterm labour were PROM, multiple gestation, APH and idiopathic.

Key words: Preterm labor, Pregnancy, Gestation.

Received: 15 January, 2019

Revised: 26 May 2019

Accepted: 17 June 2019

Corresponding Author: Dr. Jigyasa Govil, Assistant professor, Department of Obstetrics & Gynaecology, Varun Arjun Medical College, Banthara, Uttar Pradesh, India

This article may be cited as: Govil J. Determination of various risk factors associated with preterm labor in gynecological department- A clinical study. J Adv Med Dent Sci Res 2019;7(7): 222-225.

INTRODUCTION

Preterm labour is the onset of regular uterine contractions associated with progressive cervical change between viability and 37 completed weeks of gestation.¹ The incidence is between 5% and 10% in most developed nations. In the US, the incidence has increased from 9% to 12% in the past two decades. Preterm delivery can be associated with immediate and long-term neonatal complications.² Long-term morbidity includes cerebral palsy, neurodevelopmental delay and chronic lung disease. The neonatal outcome is dependent on the gestational age at delivery and associated features such as infection.³

The exact etiology is unknown. It has been postulated that it can be due to interaction of several pathways or independent effect of each pathway. 25% of premature birth are due to preterm rupture of membranes, in 45% cases causes are idiopathic and rest 10%- 25% are elective preterm deliveries. The incidence of first time hospitalization for preterm labor is 9% with only 38% delivering in their first episode.⁴ Factors possibly

contributing to but not completely explaining this upward trend include increasing rates of multiple births, greater use of assisted reproductive techniques, increases in the proportion of births among women over 34 years of age and changes in clinical practices, such as greater use of elective caesarean sections. Rates of preterm birth have been reported to range from 5-7% of all live births in some developed countries and are estimated to be substantially higher in developing countries.⁵ The present study reported the cases of preterm labor and preterm birth in known group.

MATERIALS & METHODS

This study was conducted among 116 antenatal females with preterm labor at less than 37 weeks gestational age. All were informed regarding the study and written consent was obtained.

Demographic data such as name, age etc. was recorded. A thorough history and clinical examination was performed in all patients followed by ultrasonography (USG) by Toshiba machine. In all, rupture of

membranes was diagnosed by speculum examination and confirmed by ferning. Risk factors related to preterm labor were recorded. Results thus obtained

were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Age group (years)	Number	P value
<28	24	0.01
28- 34	20	
34- 36	42	
>36	30	

Table I, graph I shows that age group <28 years had 24, 28-34 years had 20, 34-36 years had 42 and >36 years had 30. The difference was significant (P<0.05).

Graph I Distribution of patients

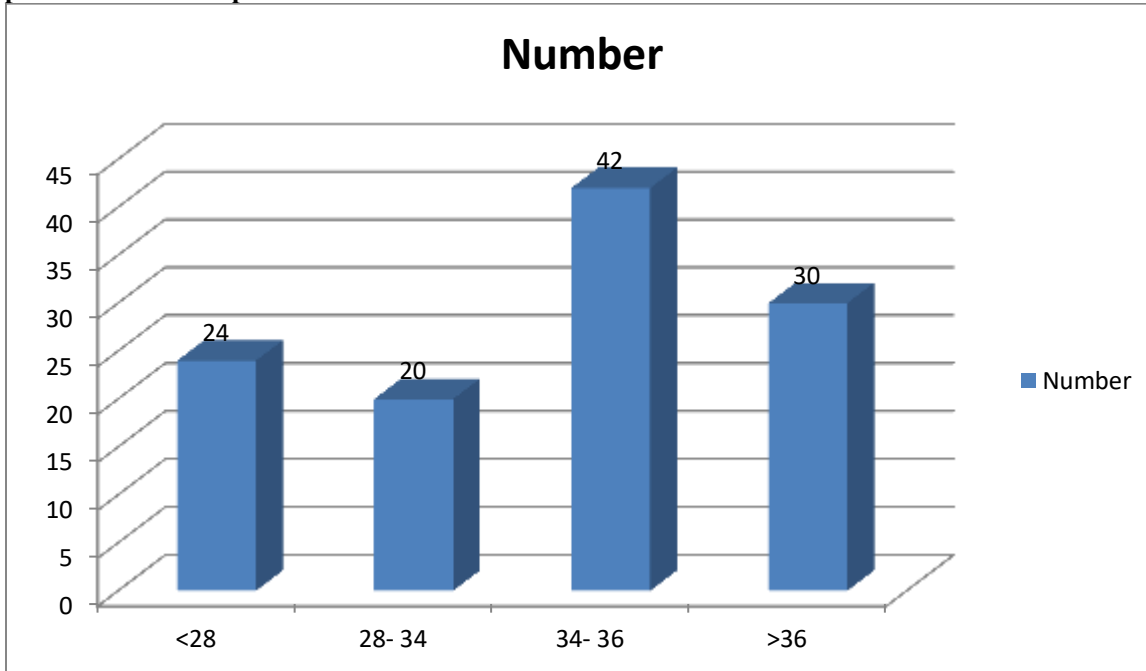
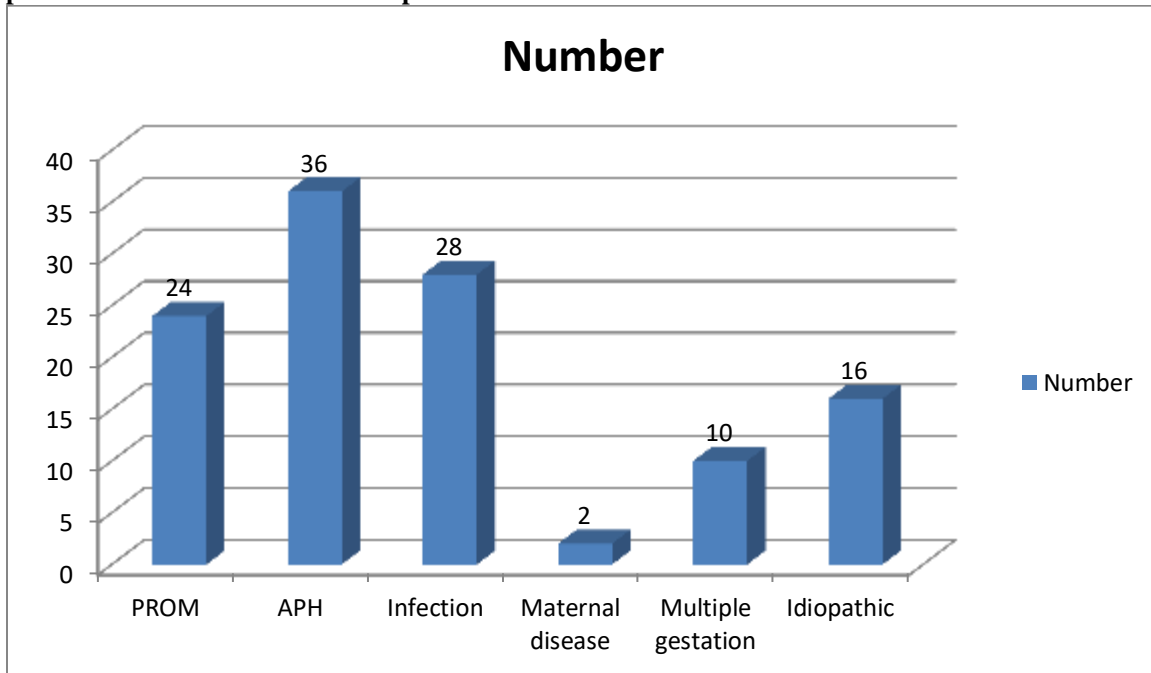


Table II Assessment of risk factor for preterm labor

Risk factors	Number	P value
PROM	24	0.03
APH	36	
Infection	28	
Maternal disease	2	
Multiple gestation	10	
Idiopathic	16	

Table II, graph I shows that various risk factors were PROM seen in 24, APH in 36, infection in 28, maternal diseases in 2, multiple gestation in 10 and idiopathic in 16 cases. The difference was significant (P<0.05).

Graph II Assessment of risk factor for preterm labor

DISCUSSION

Preterm labor and delivery has become challenging complications encountered by obstetricians nowadays, as are preterm neonates for the pediatricians. Preterm labor is defined as the onset of labor prior to 37 completed weeks of gestation i.e. 359 days from first day of last menstrual period.⁶ Preterm delivery affects greater births in developing countries and causes 45-70% neonatal deaths. Preterm birth is a major determinant of neonatal mortality, morbidity and childhood disability.⁷ Preterm birth remains one of the most serious obstetric problems. Preterm birth is recognized as a worldwide problem responsible for most of the neonatal deaths and a vast majority of neonatal morbidity in the surviving infants. Incidence of preterm labor is 23.3% and of preterm delivery 10-70% in India.⁸

There are various causes of preterm labor, though in a majority of cases, the cause is un-known. Infections, maternal medical and surgical disorders, uterine over-distension, uterine anomalies, placental anomalies and fetal pathologies are amongst the causes for preterm labor. There are some factors associated with preterm labor like socio-economic, genetic, constitutional and obstetric.⁹ The present study reported the cases of preterm labor and preterm birth in known group.

In present study we found that age group <28 years had 24, 28-34 years had 20, 34-36 years had 42 and >36 years had 30. Mahajan et al¹⁰ in their study, 100 preterm births (cases) and 100 term births (control cases) were enrolled in the study. A detailed questionnaire was used to record sociodemographic factors, maternal and

antenatal characteristics of current and previous pregnancies. Pre-eclampsia, preterm prelabour rupture of membranes, previous history of preterm births, IUD, genitourinary infections and polyhydramnios or oligohydramnios were determined as significant risk factors for preterm birth. 53.1% preterm babies were late preterm babies.

We observed that various risk factors were PROM seen in 24, APH in 36, infection in 28, maternal diseases in 2, multiple gestation in 10 and idiopathic in 16 cases. In a study of 2567 asymptomatic women with singleton pregnancies, cervical length measurement was taken at 23 weeks gestation. The rate of preterm delivery below 32 weeks was 1%, 4% and 78% for cervical lengths of >25 mm, <15 mm and <5 mm, respectively. Cervical length also predicts preterm delivery in high-risk women. A likelihood ratio of 4.7 has been reported for preterm delivery at <35 weeks with a cervical length <25 mm in women with a previous cone biopsy. Furthermore, there is evidence that a short cervix is associated with earlier rather than late preterm birth and that the mean cervical length is shorter in women with a history of preterm delivery.¹¹

Oturina et al¹² suggested that it is feasible and easy to make an elastographic image in the cervix at the time of transvaginal ultrasound examination of the cervix during pregnancy. Authors found that the cervical elastography strain ratio is similarly predictive as the cervical length measurement for preterm delivery. Also, they concluded that the combination of two measurements is superior to single measurements for each parameter. Interobserver and intraobserver

variability for data acquisition and measurement are low, which indicates that this is a reliable ratio.

CONCLUSION

Authors found that various risk factors associated with preterm labour were PROM, multiple gestation, APH and idiopathic.

REFERENCES

1. Sharma, Kochanek KD, Strobino DM et al. Premature birth in study groups. *Pediatrics*. 2005; 115: 619-34.
2. Mittal, Von der Pool BA. Preterm labor - diagnosis and treatment. *Am Acad Fam Physician*. 1998; 15: 866-68.
3. Carr-Hill RA, Hall MH. The repetition of spontaneous preterm labour. *Br J Obstet Gynecol*. 1985; 92: 921-8.
4. Diallo FB, Diallo MS, Sylla M et al. Premature delivery - epidemiology, etiologic factors, prevention strategies. *Dakar Med*. 1998; 43: 70-3.
5. McPheeters ML, Miller WC, Hartmann KE et al. The epidemiology of threatened preterm labor: a prospective cohort study. *Am J Onstet Gynecol*. 2005; 192: 1325-9.
6. Begum F, Buckshee K, Pande JN. Risk factors associated with preterm labor. *Bangladesh Med Res Coune Bull*. 2003; 59-66.
7. Eimel, Gonclaves LF, Chaiworapongsa T, Romero R. Intrauterine infection and prematurity. *Ment Retard Dev Disabil Res Rev*. 2002; 3-13.
8. Arif, Lamont RF. Infection in the prediction and antibiotics in prevention of spontaneous preterm labour and preterm birth. *BJOG* 2003; 110: 71-5.
9. Tsimis ME, Abu Al-Hamayel N, Germaine H, Burd I. Prematurity: present and future. *Minerva Ginecol*. 2015;67:35-46.
10. Mahajan Cram LF, Zapata M, Toy EC et al. Genitourinary infections and their association with preterm labor. *Am Fam Physician* 2002; 65: 241-8.
11. Heath V C, Souka A P, Erasmus I. Cervical length at 23 weeks of gestation: prediction of spontaneous preterm delivery. *Ultrasound Obstet Gynecol* 1998;12:312-317.
12. Oturina V, Hammer K, Möllers M, Braun J, Falkenberg MK, Murcia KO, et al. Assessment of cervical elastography strain pattern and its association with preterm birth. *J Perinat Med*. 2017;45:925-32.