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ORIGINAL ARTICLE

INCIDENCE OF PRETERM LABOR, BIRTH AND POSSIBLE ETIOLOGY: A CLINICAL STUDY

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ABSTRACT:

Background: Preterm delivery affects one in 10 births (11%) in USA and even greater births in developing countries and causes 40-75% neonatal deaths. Incidence of preterm labor is 23.3% and of preterm delivery 10-69% in India. The present study records the incidence of preterm labor and preterm birth and possible etiology. **Materials & Methods:** This study was conducted in department of Obstectrics & Gynecology in year 2015. It included 542 antenatal women with preterm labor at less than 37 weeks gestational age. **Results:** Maximum (252) women with preterm labor were from age group 34-36 weeks. 175 were in age group 28- 34 weeks. Age group more than 36 weeks showed 78 women and women < 28 weeks were 37 in numbers. Maximum cases of tocolysis were seen in age group 28-34 weeks followed by 34-36 (110) weeks, < 28 (20) weeks. The difference was significant (P-0.01). Out of 363 (21%) preterm deliveries, maximum were seen in 34-36 weeks, 101 in 28-34 weeks, 52 in >36 weeks and <28 weeks showed 18 deliveries. The difference was significant (P-0.05). The various causes of allowing delivery on admission (282) was active phase of labor 197 (70%), acute fetal distress 42 (15%), antepartum hemorrhage 28 (10%), severe preeclampsia 7 (2%) and choriomnionitis 8 (3%). The difference was significant (P-0.02). **Conclusion:** Author concluded that preterm labor and preterm birth are increasing nowadays. It has to be managed safely to avoid further complications. Proper examination, good nutrition, family planning, treatment of sexually transmitted diseases is required.

Key Words: Preterm birth, preterm labor, choriomnionitis

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INTRODUCTION

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. Preterm labor and delivery has become challenging complications encountered by obstetricians nowadays, as are preterm neonates for the pediatricians.[1]

Preterm delivery affects one in 10 births (11%) in USA and even greater births in developing countries and causes 40-75% neonatal deaths. Incidence of preterm labor is 23.3% and of preterm delivery 10-69% in India.[2]

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. 30% of premature birth are due to preterm rupture of membranes, in 45% cases causes are idiopathic and rest 15%- 20% are elective preterm deliveries. McPheeters et al[3] state that incidence of first time hospitalization for preterm labor is 9% with only 38% delivering in their first episode. Their incidence is increasing in trend due to assisted reproduction leading to an increase in multiple births, early and late procreation, and better obstetrical intervention.

The present study records the incidence of preterm labor and preterm birth and possible etiology.

MATERIALS & METHODS

This study was conducted in department of Obstectrics & Gynecology in year 2015. It included 542 antenatal women with preterm labor at less than 37 weeks gestational age. Information regarding name, age, history taking, clinical examination, and ultrasonography was done.

Factors such as 1. four uterine contractions in 20 minutes with or without cervical dilatation greater than 1 cm or effacement 80% or greater. 2. Rupture of membranes (Leaking) was diagnosed by speculum examination and confirmed by ferning.

Complete hemogram, urine and vaginal swab culture was done in all women to investigate any signs of infection, if any. Whereever required antibiotics were prescribed.

Women with gestational age greater than 36 weeks, were not given tocolysis. Tocolytics were given to the other 200 women. 12 mg betamethasone was given intramuscularly to all those with less than 34 weeks gestation first at the time of admission and again after 24 hours. Women with rupture of membranes were kept on strict bed rest with foot end elevated and given 2g ampicillin intravenously at the time of admission followed by 1g 6 hourly. The type of antibiotic was changed after urine or vaginal culture sensitivity reports. Women were followed till delivery. Risk factors related to preterm labor and neonatal outcome were recorded and analyzed.

RESULTS

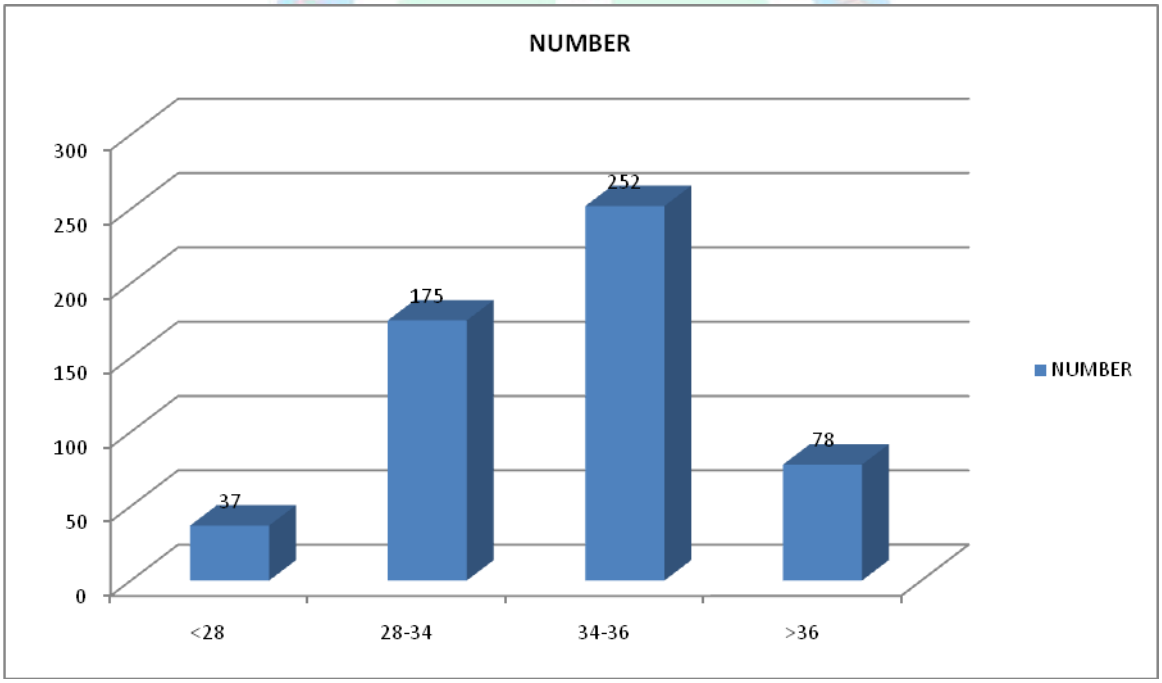
In this study, amongst 2010 antenatal women, 542 were admitted due to preterm labour comprising of 27%. It is seen that distribution of cases of preterm labor according to gestational age. Maximum (252) women were from age group 34-36 weeks. 175 were in age group 28- 34 weeks. Age group more than 36 weeks showed 78 women and women < 28 weeks were 37 in numbers (Graph I).

Maximum cases of tocolysis were seen in age group 28-34 weeks followed by 34-36 (110) weeks, < 28 (20) weeks. The difference was significant (P-0.01) (Graph- II).

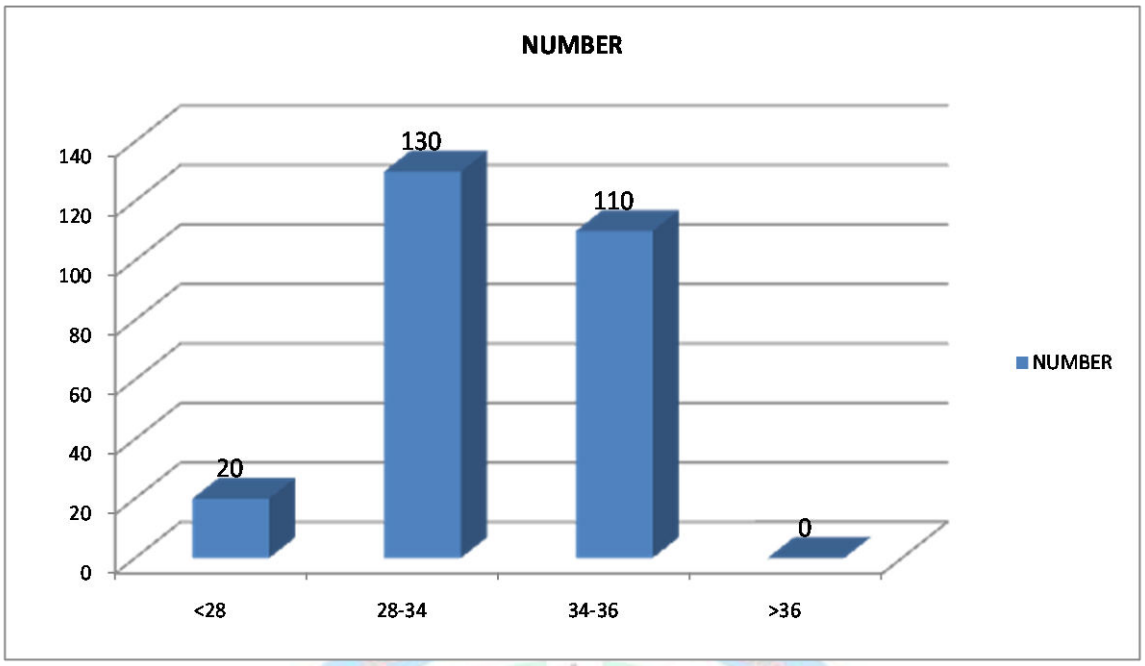
Graph III shows number of preterm deliveries. Out of 363 (21%) preterm deliveries, maximum were seen in 34-36 weeks, 101 in 28-34 weeks, 52 in >36 weeks and <28 weeks showed 18 deliveries. The difference was significant (P-0.05). The various causes of allowing delivery on admission (282) were active phase of labor 197 (70%), acute fetal distress 42 (15%), antepartum hemorrhage 28 (10%), severe preeclampsia 7 (2%) and choriomnionitis 8 (3%). The difference was significant (P-0.02) (Graph IV).

Among various risk factors for preterm labor (542), the most common recorded in present study was premature membrane rupture (120). Infections comprised of 125 cases. In 54 cases, the reason was idiopathic (Table I).

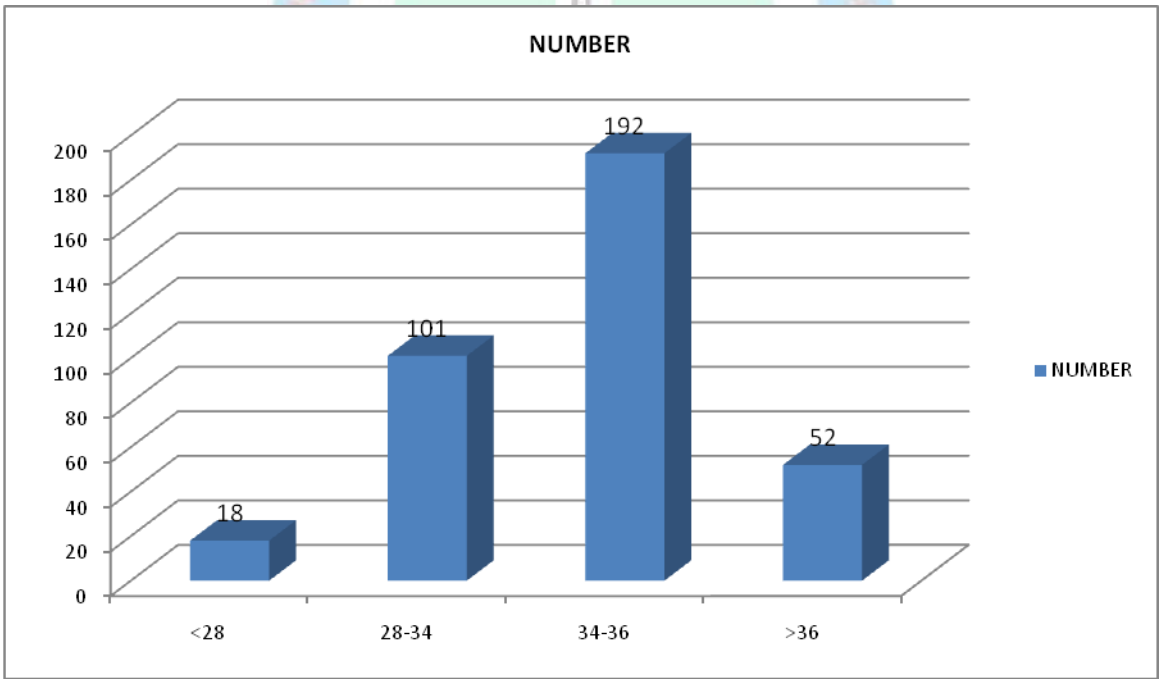
GRAPH I Gestational Age



GRAPH II Number Of Tocolysis



GRAPH III Number Of Preterm Deliveries



GRAPH IV Reasons for delivery on admission

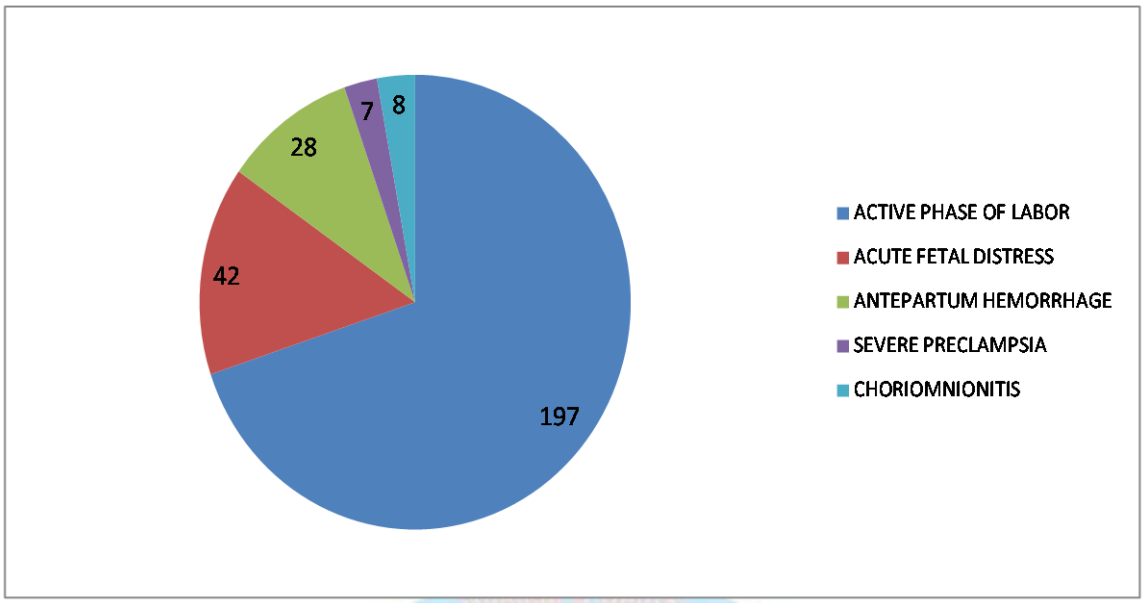


TABLE I High risk factor for preterm labor (542)

FACTORS	NUMBER OF CASES
PREMATURE RUPTURE OF MEMBRANE	120
INFECTIONS	
URINARY	55
VAGINAL	70
MULTIPLE GESTATION	64
ANTEPARTUM HEMORRHAGE	78
IDIOPATHIC	54
MATERNAL DISEASE	101

DISCUSSION

Preterm labor and delivery are not uncommon in today's life. Incidence of preterm labor is showing an increasing trend due to assisted reproduction leading to an increase in multiple births, early and late procreation, and better obstetrical intervention.[4] India has a very high incidence of preterm labor (23.3%). According to annual vital statistics in USA percentage of infants delivering before 37 weeks is continuously rising from 11% in 1998 to 12.3% in 2003.

In present study, out of 2010 antenatal women, 542 were admitted due to preterm labour comprising of 27%. Maximum number of preterm labor was seen in 34-36 weeks. Our results are in agreement with the results of Martin JA et al.[5]

In our study, maximum tocolysis was done in 28-34 weeks. Similar result was seen in study of Vonder Pool BA[6]. Maximum number of preterm deliveries was done in 34-36 weeks.

Etiology of preterm labor is multifactorial. Gonclaves[7] found that approximately 30% of preterm births are associated with rupture of membranes. In present study, preterm rupture of membranes was associated with 120 (22%) preterm births. Lamout[8] suggested that 40% resons are due to infections. He has commented on the presence of E.coli and Klebsiella pneumonia. Cram et al[9] concluded that infections are the second most common reasons for premature birth.

He found that asymptomatic bacteriurea, gonococcal cervicitis and bacterial vaginosis are strongly associated with preterm labor and the role of chlamydia, candida, trichomonas and urea plasma is less clear. A study conducted by Bibby E[10] considered antepartum hemorrhage as one of the important factor leading to preterm birth followed by infections. In our study also, antepartum hemorrhage was seen in 78 out of 542 cases.

Shingairai AF [11] stated that male fetus is one of the risk factors of preterm birth. He concluded that there is a greater synthesis of active prostaglandins in the placentae with male fetuses in a state of inflammation, which may explain the higher incidence of preterm birth.

CONCLUSION

Author concluded that preterm labor and preterm birth are increasing nowadays. It has to be managed safely to avoid further complications. Proper examination, good nutrition, family planning, treatment of sexually transmitted diseases is required.

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