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Original article

Study of demographic profile of patients of preterm labour at tertiary care hospital: An observational study

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Abstract:

Introduction: Preterm birth, a leading cause of neonatal morbidity and mortality is a major contributor to loss of life, long term disability and health care cost in both developing and developed countries.

Methodology: The present study was conducted in the department of obstetrics and gynaecology of Rural Medical College , Loni, The present work comprises of 135 cases between 28 to 37 weeks of gestational age having premature labour pains that were admitted in antenatal ward or labour room.

Results : In present study, maximum number of patients, going into preterm labour were second gravida. Out of 135 cases, 59 cases were second gravida with incidence of 43.7%.

Conclusion: Preterm birth is the leading cause of neonatal morbidity and mortality, regular antenatal check up is very important to prevent preterm labour. Early identification of risk factors like previous history of preterm, uterine anomalies, urinary tract infection, bacterial vaginosis, anemia plays a vital role for prevention of preterm labour.

Keywords: Preterm labour , neonatal morbidity , nifedipine

Introduction:

Preterm birth, a leading cause of neonatal morbidity and mortality is a major contributor to loss of life, long term disability and health care cost in both developing and developed countries.[1,2] According to American college of Obstetrics and Gyneacology19971, "Preterm birth is defined as those infants delivered prior to the completion of 37 weeks" Spontaneous preterm labour is responsible for 40-50% of all preterm births.[3] Preterm birth rates range from 5 % in developed countries to 25 % in developing counteries2. In practical terms, preterm birth after 32 weeks of gestation are known to have improved survival and less morbidity due to rapid advances in perinatal and neonatal medicine in recent decades. [4,5,6]

The efficacy of nifedipine in suppressing pretem labour appears to be as good as, and possibly better than, ritodrine and terbutaline. [7, 8 , 9] It also appears equivalent in its ability to prolong pregnancy once the premature contractions have abated. The temporary effects on contractions and the immediate delay in delivery are not linked to an improvement in perinatal mortality. Only one randomised trial has compared the efficacy of nifedipine to 'no treatment'[10]. This trial showed that nifedipine was superior to no treatment but, similar to other studies, was not large enough to show an effect on important outcomes.

Material and methods:

The present study was conducted in the department of obstetrics and gynaecology of Rural Medical College , Loni, The present work comprises of 135 cases between 28 to 37 weeks of gestational age having premature

labour pains that were admitted in antenatal ward or labour room. The study was approved by the IEC . The sample size was estimated with the help of expert using online sample size estimation calculator.

Inclusion criteria:

- Gestational age between 28weeks to 37 weeks
- Presence of regular uterine contractions 4 in 20 minutes or 8 in period of one hour
- Cervical dilatation > 1 cm
- Primigravida as well as multigravida

Exclusion criteria:

- Systemic diseases like diabetes mellitus, cardiac disease, liver or renal disease, hypotension
- Obstetric complication like hypertensive disorder of pregnancy, antepartum haemorrhage, PROM
- Multifetal gestation
- Foetal complications like chorioamnionitis, congenital malformations, IUGR, fetal distress, intrauterine death.

Pregnant women presenting with preterm labour and those fulfilling inclusion and exclusion criteria will be admitted. A detailed history, complete physical examination and routine investigations, obstetric ultrasound will be done for all patients. All women will be screened for urinary tract infections/bacterial vaginosis with mid-stream clean catch urine sample & a high vaginal swab respectively and antibiotic treatment will be instituted.

Results:

The present study comprises of 135 cases who were studied with nifedipine between gestational age 28 weeks to less than 37 weeks, as case of preterm labour, admitted in the Dept. of Obstetrics and Gynecology, Rural Medical College, Loni in the year from September 2016 to july 2018, to study the effect of nifedipine to arrest the premature labour and to reduce sequelae of prematurity.

TABLE 1: DISTRIBUTION OF PATIENTS ACCORDING TO MATERNAL

	Frequency	**Percent**
20-25	83	61.5
25-30	50	37.0
30-35	2	1.5
Total	135	100.0
Mean ± SD	24.57 ± 2.71	

The table shows, the frequency of preterm labour in different age groups. The total no. of cases 135. The maximum number of cases are in 20 to 25 followed by 25-30

TABLE 2: DISTRIBUTION OF CASES AS PER SES

	Frequency	Percent
lower	122	90.4
lower middle	13	9.6
Total	135	100.0

Table no.2 shows distribution of cases according to socio-economic status. There are 122 cases in lower class, according to kuppuswamy scale of classification

TABLE 3: DISTRIBUTION OF CASES OF AS PER GRAVIDA SCORE

	Frequency	Percent
G1	57	42.2
G2	59	43.7
G3	15	11.1
G4	4	3.0

The above table shows distribution of cases according to gravida score. Maximum being in second gravida, followed by minimum in fourth gravida.

TABLE 4: DISTRIBUTION OF CASES AS PER GESATIONAL AGE AT THE TIME OF TOCOLYSIS

Gestational age	Frequency	Percent
28.00	13	9.6
29.00	3	2.2
30.00	8	5.9
31.00	4	3.0
32.00	47	34.8
33.00	11	8.1
34.00	49	36.3
Total	135	100.0
Mean ± SD	32.207±1.87	

The above table shows the distribution of cases according to gestational age, highest frequency at 34 weeks (36.3%) followed by 32 weeks (34.8%)

TABLE 5: DISTRIBUTION OF CASES AS PER GESTATIONAL AGE AT THE TIME OF DELIVERY

Gestational age	Frequency	Percent
28.00	2	1.5
30.00	2	1.5
31.00	3	2.2
32.00	14	10.4
33.00	4	3.0
34.00	18	13.3
36.00	4	3.0
37.00	41	30.4
38.00	43	31.9
39.00	4	3.0
Total	135	100.0
Mean ± SD	35.94 ± 2.52	

The above table shows distribution of cases according to gestational age at time of delivery. The distribution shows 31.9% cases delivered at 38 weeks of gestation, while 30.4% at 37 weeks of gestation. Lowest being of 1.5 % at 28 weeks and 30 weeks gestation .

Discussion:

Globally, an estimated 13 million babies are born before 37 completed weeks of gestation annually. Preterm birth is the leading direct cause of neonatal death (27%), more than one million preterm newborn die annually.

Preterm is divided into moderately preterm (33 to 36 completed weeks), very preterm (<32weeks) and extremely preterm (<28 weeks). Mortality rates increase proportionally with decreasing gestational age. Mortality and morbidity are highest among infants born at less than 32 weeks gestation. Infants born from 32 to 36 weeks represent about 75% of all preterm births and the group of infants who make up the fast growing proportion of the preterm births in high income countries[143]. Babies born preterm have an increased risk of morbidity , some are directly related to immaturity, as with hyaline membrane disease due to lack of pulmonary surfactant, and retinopathy of prematurity due to the excessive use of oxygen. Preterm birth may also be a marker for other problems that produce disease such as fetal infections and systemic inflammation, which are associated with intracranial hemorrhage, cerebral palsy, cerebral white matter damage, and chronic lung disease which include bronchopulmonary dysplasia[11].

There is evidence that antenatal corticosteroids are associated with a significant reduction in the rates of respiratory distress syndrome, neonatal deaths and intraventricular hemorrhage, although the numbers needed to treat increase significantly after 34 weeks. The RCOG has recommended that antenatal corticosteroids should be administered between 24 and 34weeks of gestation. Use of a tocolytic drug is not associated with a clear reduction in perinatal or neonatal mortality or neonatal morbidity. The main effect of tocolytic drugs when used for women in preterm labour is to reduce the numbers who deliver within 48 hours or within 7 days of commencing the drug. Data on long-term outcome are sparse. It remains plausible that, for selected women,

such as those who require transfer for neonatal care or time to complete a course of corticosteroids, there may be benefit associated with tocolysis.[12]

In our study, total 135 patients in preterm labour were given tablet nifedipine 20 mg, and was repeated 6 hourly if contraction persisted. Miller et al[13](1978) in their excellent review of studies on preterm birth also estimated that approximately 60 % of preterm deliveries are associated with low socio-economic status. But in our study 90 % are associated with low socio economic status, as our hospital is in rural area. In our study age wise distribution of cases shows maximum incidence in age group of 20-25, which is similar to following studies shown in the table.

In present study, maximum number of patients, going into preterm labour were second gravida. Out of 135 cases, 59 cases were second gravida with incidence of 43.7%. The study conducted by Goffinet F[14] in 2005 incidence of preterm labour was highest in nullipara and grand multipara, and in 1999 the study conducted by Smith GN[15] shows that it was in primigravida that there were highest number of preterm labour.

Conclusion:

Preterm birth is the leading cause of neonatal morbidity and mortality, regular antenatal check up is very important to prevent preterm labour. Early identification of risk factors like previous history of preterm, uterine anomalies, urinary tract infection, bacterial vaginosis, anemia plays a vital role for prevention of preterm labour.

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