

**Study of Risk Factors of Preterm Labour in Urban Population in Mumbai**Dr. Prasannajeet Kokate<sup>1</sup>, Dr Priyadarshani Mane<sup>2</sup><sup>1</sup> Associate professor, Department of Obstetrics and Gynecology, Govt. Medical College, Chandrapur, Maharashtra<sup>2</sup> Junior Resident Department of Obstetrics and Gynecology, Grant Govt. Medical College, Mumbai, Maharashtra**Correspondence Author: Dr.Prasannajeet Kokate**, Associate professor, Department of Obstetrics and Gynecology, Govt. Medical College, Chandrapur, Maharashtra**Conflicts of Interest:** None to Declare**Abstract**

**Introduction:** Preterm birth, also known as premature birth, is the birth of baby at less than 37 weeks gestational age. Infants are at greater risk of cerebral palsy, delay in development, hearing problems and sight problems. These risks are greater the earlier the baby is born. The risk factors include diabetes, high blood pressure, multiple gestations, obese, underweight, urogenital infection, tobacco smoking, psychological stress etc. Preterm birth is the most common cause of death among infants worldwide. This study is designed to study the risk factors causing preterm labour.

**Methodology:** This is hospital based descriptive study was conducted in the department of Obstetrics and Gynecology at a tertiary care Centre in the city of Mumbai attached to a Medical college. Study Period was one year with sample size of 400 patients.

**Results:** Mean age was 25.67 years. Majority of patients (43.2%) were in the age group of 21-25 years followed by 31.5% in the age group of 26-30 years. It is observed from the study that as the education increases, the chances of preterm decreases. Majority of patients were from lower socio-economic status (73.3%). It is observed that as no. of visits increases, chances of preterm decreases. Patients with 6 or more visits had only 7.6% chances of preterm labour compared to patients with 3 visits had 66.9%. Incidence of preterm labour was more in Primigravida

(34.5 %) and second gravida( 34%) patients. Vaginal (24%) , urinary infection(18%) & bleeding during pregnancy(18.2%) were important risk factors for preterm labour.

**Conclusion:** Increasing the quality and frequency of antenatal visits, identifying risk factors and giving special care to these patients can definitely reduce the incidence of preterm labour.

**Keywords:** Preterm Labour, Premature Birth, Primigravida

**Introduction**

Preterm birth, also known as premature birth , is the birth of baby at less than 37 weeks gestational age <sup>1</sup>. Infants are at greater risk of cerebral palsy, delay in development, hearing problems and sight problems. These risk are greater the earlier the baby is born <sup>1</sup>. The risk factors include diabetes ,high blood pressure, multiple gestation, obese, underweight, urogenital infection, tobacco smoking, psychological stress etc <sup>2,3</sup>. In those at risk, the hormone progesterone, if taken during pregnancy may prevent preterm birth. Evidence does not support usefulness of bed rest <sup>4,5</sup>. In women who might deliver between 24 and 37 weeks corticosteroid improves outcome <sup>6,7</sup>. Preterm birth is the most common cause of death among infants worldwide<sup>1</sup>. The chance of survival at less than 23 weeks is close to zero, while at 23 weeks it is 15%, 24 weeks 55% and 25 weeks about 80% <sup>8</sup>. Preterm birth rates have been reported to range from 5% to 7% of

live births in some developed countries, but are estimated to be substantially higher in developing countries. This study is designed to study the risk factors causing preterm labour.

**Material and methods**

This is hospital based descriptive study was conducted in the department of Obstetrics and Gynecology at a tertiary care Centre in the city of Mumbai attached to a Medical college after obtaining permission from Institutional Ethics Committee.

Study Period: One year

Sample Size: 400 patients

Inclusion Criteria: All registered and unregistered antenatal patients delivered between 24 to 36.6 weeks of gestation.

Detailed history and examination was conducted, labour details, neonatal details noted .Data analyzed & plotted.

**Observations**

**1. Distribution of patients according to age**

Age (Years)	No.	%
18-20	45	11.2
21-25	173	43.2
26-30	126	31.5
31-35	43	10.7
36-40	13	3.4

Mean age was 25.67 years. Majority of patients (43.2%) were in the age group of 21-25 years followed by 31.5% in the age group of 26-30 years.

**2. Distribution of patients according to Education**

Education	No.	%
Uneducated	133	33.2

Primary	132	33.1
SSC	112	28
HSC	20	5
Graduation	3	0.7

It is observed from the study that as the education increases,the chances of preterm decreases.

**3. Distribution of patients according to socio-economic status.**

Socio-economic status	No.	%
Lower	293	73.3
Middle	106	26.5
Upper	1	0.2

Majority of patients were from lower socio-economic status (73.3%).

**4. Number of visits of Booked patients**

No of visits	No.	%
3 visits	150	66.9
4 visits	32	14.3
5 visits	25	11.2
6 or more visits	17	7.6
Total	224	100

It is observed that as no. of visits increases, chances of preterm decreases. Patients with 6 or more visits had only 7.6% chances of preterm labour compared to patients with 3 visit had 66.9%.

5. Distribution of patients according to Gravida status.

Gravida status	No	%
One	138	34.5
Two	136	34
Three	80	20
Four & above	46	11.5

Incidence of preterm labour was more in Primigravida (34.5 %) and second gravida( 34%) patients.

6. Association of socioeconomic risk factors and preterm delivery.

Risk factor	No.	%
Tobacco addiction	15	3.7
Malnutrition	52	13
Obesity	30	7.5
Advanced age	13	3.2

7. Association of Maternal risk factors and preterm delivery.

Risk Factor	No.	%
UTI & Bacteriuria	72	18
STD	10	2.5
Bacterial vaginosis	96	24
Preeclampsia	39	9.7
Placenta previa	45	11.25
H/O Abortion	73	18.2
Bleeding of uncertain origin	98	24.5
H/O spontaneous preterm birth	13	3.25
Cervical length at 24 wks <25 mm	60	15

Utero-placental insufficiency	30	7.5
Oligohydroamnios	72	18
Multiple Gestation	36	9

Vaginal (24%) , urinary infection(18%) & bleeding during pregnancy(18.2%) were important risk factors for preterm labour.

8. Distribution of patients according to cause of preterm birth

Cause of preterm birth	No.	%
Spontaneous	212	53
Iatrogenic	109	27.3
PROM	79	19.7

The most common cause for preterm birth was spontaneous (53%).

**Discussion**

The total no of deliveries at our institute during study period were 3400, so incidence of preterm delivery in our study was 11.76%. Similar finding was found in study by Das et al where incidence was 10.23%<sup>9</sup> Majority of patients (43.2%) were in the age group of 21-25 years, followed by 31.5 % in the age group of 26-30 years. In a study done by Das et al late age pregnancy (age >35 years) constituted 12.88% and teenage pregnancy constituted 12.69%. This difference is due to trend of compulsory and early marriages in India.

There were 33.2% of the study group were educated upto primary level while 28% and 5% of the patients studied till SSC & HSC respectively. 33.1% patients had no education. Majority of patients in our study group were from lower class(73.3%) followed by middle class(26.5%) and upper class 0.2%. This is comparable to the study done by Smith LK et al<sup>10</sup> and Brett KM et al<sup>11</sup> observed Maternal demographic characteristics associated with

preterm birth include low socioeconomic and educational status. Begum F et al<sup>12</sup> found that educational status <5 years(OR2.7), monthly income <2000 rupees (OR5.05) are significant risk factors. Diallo FB et al in a study found that poor and rich women groups (amounting to 7.34% and 3.84% of preterm) are important risk factors.<sup>13</sup>

Incidence of preterm labour was more in primigravida (34.5%) followed by 34.2% patients in 2<sup>nd</sup> gravida and 20% in 3<sup>rd</sup> gravida. Similar finding was found in a study done by Naoko Kozuki et al who observed that nulliparous, age <18 years, compared with women who were parity 1-2 had the highest odds of preterm (pooled adjusted OR:1.52)<sup>15</sup>.

The most common risk factors for preterm delivery were bleeding of uncertain origin in pregnancy(24.5%), bacterial vaginosis (24%), abortion(18.2%), cervical length < 25 mm at 24 weeks gestation (15%), placenta praevia (11.2%), preeclampsia(9.7%) and multiple pregnancy (9%). In the similar studies done by Rao CR et al<sup>14</sup>, Begum F<sup>12</sup>, Diallo FB<sup>13</sup> on the risk factors for preterm labour found same observations.

Increasing the quality of antenatal care is the important way of reducing preterm labour, as less number of antenatal visits increasing the chances of preterm.

#### **Conclusion:**

Increasing the quality and frequency of antenatal visits, identifying risk factors and giving special care to these patients can definitely reduce the incidence of preterm labour. Social development with improving female education, reducing poverty will definitely help in reducing the incidence of preterm labour.

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